FL: HIV, 3 units

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Contact hours: 3

Course price: $24

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This course meets the HIV 3-unit continuing education requirement for the following healthcare professions in the State of Florida: nursing, CNAs, PT, OT, respiratory therapy, massage therapy, clinical lab personnel, athletic training, podiatry, dietetics and nutrition, midwifery, medical physics, electrology, EMTs, and paramedics. If you need only one unit, please go to our Florida HIV-1 course offering.

Course Summary

Comprehensive discussion of HIV and AIDS in Florida, including the cause and mechanism of HIV infection, basic components of HIV antibody testing and confirmation, and initial evaluation and clinical management of HIV patients.

COI Support
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Criteria for Successful Completions
80% or higher on the post test, a completed evaluation form, and payment where required. No partial credit will be awarded.

Course Objectives

When you finish this course you will be able to:

1. Discuss the prevalence and incidence of HIV and AIDS.
2. Identify the cause of HIV infection and the mechanisms of infection and transmission of HIV.
3. Outline the basic components of HIV antibody testing and confirmation.
4. Describe infection control practices shown to prevent transmission of HIV.
5. Discuss managing a possible occupational exposure to HIV.
6. Explain the initial evaluation and clinical management of HIV patients, including antiretroviral therapy.
7. Identify the special populations who may be especially vulnerable to HIV-infection.
8. Spell out HIV prevention strategies, including behavioral change management and needle exchange programs.
9. Discuss the psychosocial issues associated with HIV and AIDS infection.
10. Name the main components of the Florida Omnibus AIDS Act.

Prevalence and Incidence of HIV

Bulletin

September 9, 2013. An HIV/AIDS vaccine candidate being developed by researchers at Oregon Health and Science University appears to have the ability to completely clear an AIDS-causing virus from the body.

”To date, HIV infection has only been cured in a very small number of highly publicized but unusual clinical cases in which HIV-infected individuals were treated with antiviral medicines very early after the onset of infection or [were given] a stem cell transplant to combat cancer. This latest research suggests that certain immune responses elicited by a new vaccine may also have the ability to completely remove HIV from the body,” according to Louis Picker, associate director of the Vaccine and Gene Therapy Institute at OHSU. (See Module 8.)

For the year 2011 the United Nations estimated 34 million people worldwide were living with **human immunodeficiency virus (HIV)** and about 2.5 million became newly infected. Progress against the disease over the past ten years has been uneven. Twenty-five countries have seen more than a 50% drop in infections since 2001, and there was a 42% drop in the Caribbean, which is the second most affected region in the world. Unfortunately, However, in the Middle East and North Africa the number of new infections *increased* by more than 35%, and Eastern Europe and Central Asia have also seen increases (UNAIDS, 2012).

Worldwide, deaths related to **acquired immune deficiency syndrome (AIDS),** the final stage of HIV-infection, have decreased by 24% since 2005, and in 2011 were approximately 1.7 million. However, increases in those deaths occurred in the same regions that experienced an increase in new HIV infections: the Middle East, North Africa, Eastern Europe, and Central Asia (UNAIDS, 2012).

Data are incomplete as of 2013, but the United Nations estimated that in 2013 in the United States there would be approximately 1.3 million people living with HIV—about 1 million men and 300,000 women. The United Nations also estimated that 20,000 Americans would die from AIDS in 2013 (UNAIDS, 2013).

Through the end of 2010, Florida ranked third in the nation with 121,161 AIDS cases reported. In 2011 Florida was second among the states in numbers of new cases of HIV infection diagnosed, and third in the number of AIDS cases. Florida has five large metropolitan areas that have more AIDS cases individually than many states do as a whole.

In 2012, 5,388 cases of HIV infection and 2,775 AIDS cases were reported among adults; both numbers reflected a small drop over those from 2011. Women accounted for 22% of the 2012 HIV cases and 29% of the AIDS diagnoses, and the percentage of cases among females has been decreasing over the past ten years. The new AIDS cases reported were 54% black, 24% white, and 21% Hispanic, and these proportions have changed little over the past ten years (FDOH, 2012).

Hispanics, who make up 22% of Florida’s adult population, comprise 23% of the HIV cases and 21% of the AIDS cases (proportional to the Hispanic population).

Blacks represent only 14% of Florida’s adult population, however they account for 44% of the adult HIV-infection cases and 53% of the adult AIDS cases reported in 2012. Black men—and especially black women—are significantly over-represented in these statistics, with the HIV case rate among black women 15 times that among white women (FDOH, 2012).

Since the peak year of 1995 there has been a 79% decline in deaths of Florida residents due to HIV disease. The number has continued to decline since 2007, and in 2012 there were 923 HIV-related deaths. However, HIV is still the sixth leading cause of death for 25- to 44-year-olds. For blacks it is the fourth leading cause of death, having fallen from first in 2010 for the first time since 1988 (FDOH, 2012.)

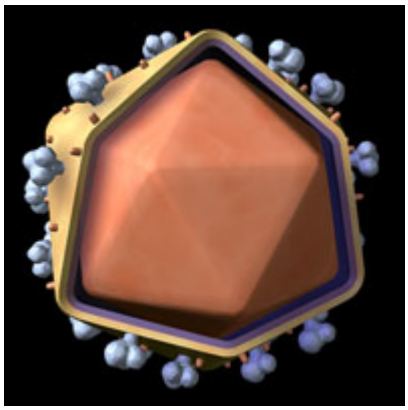
HIV Infection and Transmission

Cause of HIV

The human immunodeficiency virus kills or impairs the cells of the immune system and progressively destroys the body's ability to protect itself. Over time, a person with a deficient immune system (**immunodeficiency**) may become vulnerable to infections by disease-causing organisms such as bacteria or viruses. These infections can become life-threatening.

The term *AIDS* stands for "acquired immunodeficiency syndrome," and it refers only to the most advanced stage of HIV infection. Medical treatment can delay the onset of AIDS, but HIV infection eventually results in a **syndrome** (combination) of symptoms, diseases, and infections. The diagnosis of AIDS requires evidence of HIV infection and the appearance of some specific additional conditions or diseases. Only a licensed medical provider can make an AIDS diagnosis.

HIV Virus



The physical structure of HIV is characterized by a protein shell encapsulating the genetic information and enzymes of the virus; a lipid membrane that circles the protein capsule; and glycoproteins that dot the surface of the virus, which aid in processes such as entry into macrophages and T-helper cells of the host. Illustration provided by 3DScience.com.

Surveillance Case Definitions (rev. 2008)

In December 2008, the Centers for Disease Control and Prevention (CDC) published *Revised Surveillance Case Definitions for HIV Infection Among Adults, Adolescents, and Children Aged <18 Months and for HIV Infection and AIDS Among Children Aged 18 Months to <13 Years*.

For adults and adolescents (people 13 years or older), the surveillance case definitions for HIV infection and AIDS were revised into a single case definition that includes AIDS and incorporates a system for staging HIV-infection. In addition, the HIV case definition for children over 13 years old and the AIDS definition for children aged 18 months to 13 years were revised.

No changes were made to the HIV classification system, the 24 AIDS-defining conditions for children older than 13 years, or the AIDS definition for children over 18 months of age (CDC 2013, CDC 2008).

A **confirmed case** meets the laboratory criteria for diagnosis of HIV infection and one of the four HIV infection stages (stage 1, stage 2, stage 3, or stage unknown).

- **HIV infection, stage 1:** No AIDS-defining condition and either CD4+ T-lymphocyte count of ≥500 cells/μL or CD4+ T-lymphocyte percentage of total lymphocytes of ≥29.
- **HIV infection, stage 2:** No AIDS-defining condition and either CD4+ T-lymphocyte count of 200–499 cells/μL or CD4+ T-lymphocyte percentage of total lymphocytes of 14–28.
- **HIV infection, stage 3 (AIDS):** CD4+ T-lymphocyte count of <200 cells/μL or CD4+ T-lymphocyte percentage of total lymphocytes of <14, or documentation of an AIDS-defining condition. Documentation of an AIDS-defining condition supersedes the laboratory definitions here.
- **HIV infection, stage unknown:** No information available on CD4+ T-lymphocyte count or percentage and no information available on AIDS-defining conditions (CDC 2013, CDC 2008)

AIDS-Defining Conditions

- Bacterial infections, multiple or recurrent*
- Candidiasis of bronchi, trachea, or lungs
- Candidiasis of esophagus†
- Cervical cancer, invasive§
- Coccidioidomycosis, disseminated or extrapulmonary
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis, chronic intestinal (>1 month's duration)
- Cytomegalovirus disease (other than liver, spleen, or nodes), onset at age >1 month
- Cytomegalovirus retinitis (with loss of vision)†
- Encephalopathy, HIV related
- Herpes simplex: chronic ulcers (>1 month's duration) or bronchitis, pneumonitis, or esophagitis (onset at age >1 month)
- Histoplasmosis, disseminated or extrapulmonary
- Isosporiasis, chronic intestinal (>1 month's duration)
- Kaposi sarcoma†
- Lymphoid interstitial pneumonia or pulmonary lymphoid hyperplasia complex*†
- Lymphoma, Burkitt (or equivalent term)
- Lymphoma, immunoblastic (or equivalent term)
- Lymphoma, primary, of brain
- Mycobacterium avium complex or Mycobacterium kansasii, disseminated or extrapulmonary†
- Mycobacterium tuberculosis of any site, pulmonary,†§ disseminated,† or extrapulmonary†
- Mycobacterium, other species or unidentified species, disseminated† or extrapulmonary†
- Pneumocystis jirovecii pneumonia†
- Pneumonia, recurrent†§
- Progressive multifocal leukoencephalopathy
- Salmonella septicemia, recurrent
- Toxoplasmosis of brain, onset at age >1 month†
- Wasting syndrome attributed to HIV

* Only among children aged <13 years. (CDC. 1994 Revised classification system for human immunodeficiency virus infection in children less than 13 years of age. MMWR 1994;43[No. RR-12].)

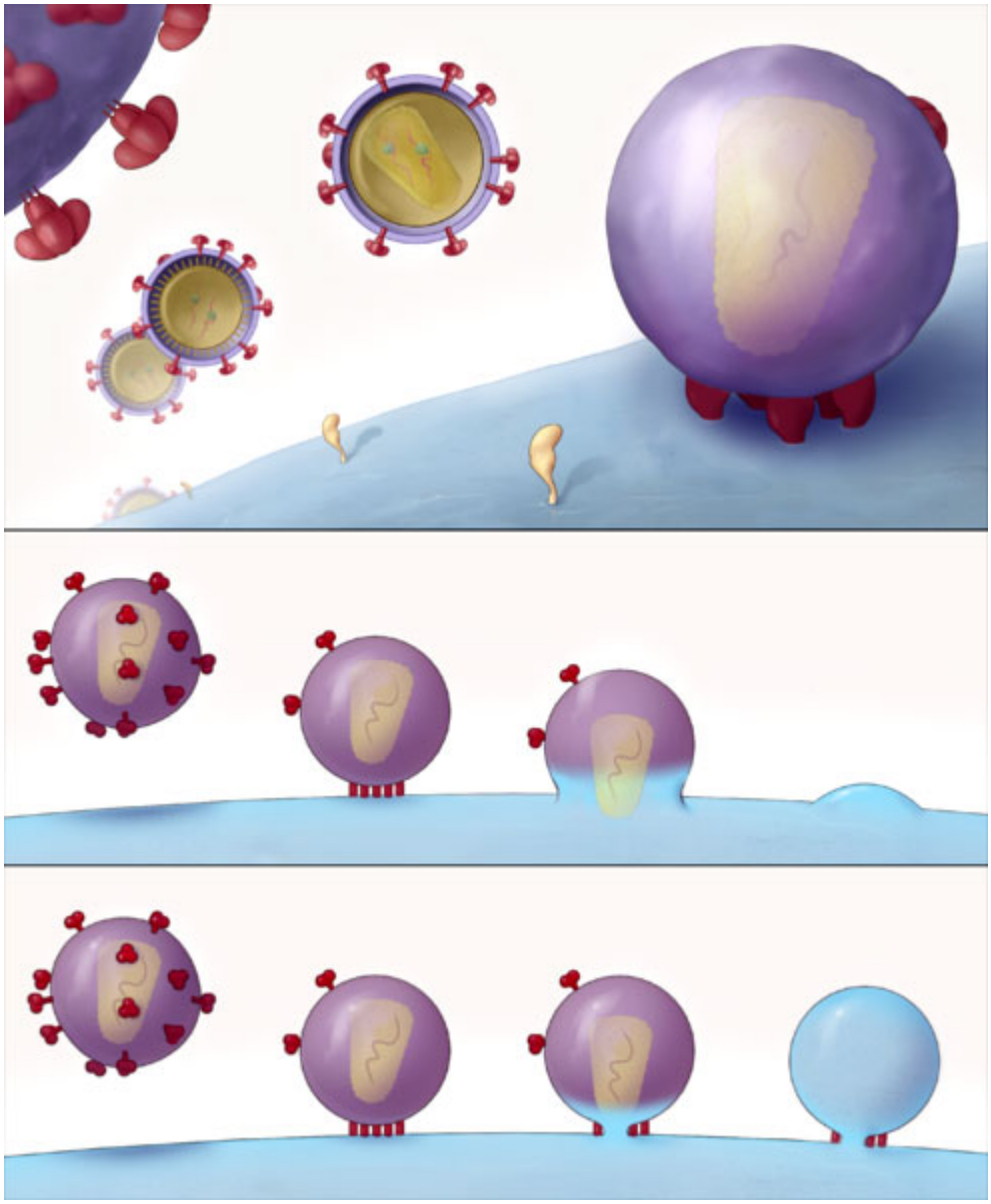
† Condition that might be diagnosed presumptively.

§ Only among adults and adolescents aged >13 years. (CDC. 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR 1992;41[No. RR-17].)

Source: CDC, 2008.

HIV enters the bloodstream and seeks out T-helper lymphocytes, white blood cells essential to the functioning of the immune system. One of the functions of these cells is to regulate the immune response in the event of attack from disease-causing organisms such as bacteria or viruses. When the virus infects the T-helper lymphocyte, the cell sends signals to other cells, which produce antibodies. This T-helper lymphocyte cell is also called the T4 or the CD4 cell.

HIV Entry into T Cell



The top panel shows the HIV virion finding and attaching to a T cell. The second and third panels show HIV viruses (dotted with red glycoproteins) attaching to the T cell and depositing the HIV virus particle into it. Source: Image courtesy of Sougrat et al., 2007; PLoS Creative Commons Attribution 2.5 license.

A person with untreated HIV infection experiences several stages of infection:

- **Viral transmission**
- **Primary HIV infection**—lasting 1 to 2 weeks as the virus establishes itself in the body.
- **Seroconversion**—the point when antibodies to the HIV virus produced by the immune system are able to be identified by laboratory test.
- **Asymptomatic HIV infection**—a person is infectious but looks and feels healthy. The virus is active and continuing to damage the immune system.

- **Symptomatic HIV infection—**symptoms such as skin rash, night sweats, mouth ulcers, weight loss, and fungal infections appear.
- **AIDS**—the CDC defines AIDS as an HIV-positive person who has a CD4+ T-lymphocyte count of <200 cells/μL or CD4+ T-lymphocyte percentage of total lymphocytes of <14, or documentation of an "AIDS-defining condition."

These stages are sometimes called the "natural history" of disease progression. The natural history of HIV infection has been altered dramatically in developed countries because of new medications. In countries where there is no access to these expensive medications, or in cases where people do not become aware of their HIV infection until very late, the disease progresses as described above (WSDOH, 2007).

HIV is a relatively fragile virus, which is not spread by casual contact. HIV is not easy to "catch"—it must be acquired. In order for HIV to be transmitted, there must be:

- An **HIV source**.
- A **sufficient dose of virus**.
- **Access to the bloodstream of another person**.

One of the predictors of the infectious level of an HIV-positive person is viral load—how much HIV is present in the bloodstream. Studies show a clear connection between higher viral load in the blood and increased transmissibility of HIV.

HIV is transmitted through:

- Unprotected anal, vaginal, and oral intercourse
- Sharing needles or other injection equipment
- A mother passing the virus to her baby either before or during birth
- An infected woman breastfeeding her infant
- Accidental needlestick injuries, or infected body fluid coming into contact with the broken skin or mucous membranes of another person (as with healthcare workers)
- A transfusion prior to 1986 of HIV-infected blood or blood products

In extremely rare cases, HIV can be transmitted by sharing razors or toothbrushes, if infected blood from one person was deposited on the toothbrush or razor and the blood entered the bloodstream of another person.

In settings such as hospital operating rooms, other fluids—cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid—may be considered infectious if the source is HIV-positive. These fluids are generally not found outside the hospital setting. Therefore, the most common body fluids considered potentially infectious for HIV are blood, semen, vaginal secretions, and breast milk.

HIV transmission may occur during practices such as tattooing, blood-sharing activities such as "blood brother" rituals or any other type of ritualistic ceremonies where blood is exchanged, or when unsterilized equipment contaminated with blood is shared. HIV transmission may also occur in occupational settings.

People Unaware of Their Positive Status

People who are infected with HIV come from all races, countries, sexual orientations, genders, and income levels. Globally, most of the people who are infected with HIV have not been tested and are unaware that they are living with the virus. The CDC estimates that, in 2009, 18% of those in the United States who had HIV were unaware that they were living with the virus. This is a decline from the 25% measured in 2003 and is a positive sign because research shows that most individuals who know they are infected with HIV will reduce behaviors that could transmit the virus (CDCNPIN, 2012).

It is important to note that the great majority of people with HIV infection do not transmit HIV to others. The CDC estimates that in 2006 there were 5 transmissions per 100 persons living with HIV infection. This means that at least 95% of those living with HIV infection did not transmit the virus to others that year. This represents an 89% decline in the estimated rate of transmission since the peak level of new infections in the mid-1980s. It is believed that the decline is due to effective prevention efforts and the availability of improved testing and treatments for HIV (CDCNPIN, 2012).

Pregnant Women

An HIV-infected woman may transmit the virus to her baby during pregnancy, during the birth process, or following pregnancy by breastfeeding. One of the predictors of how infectious the woman will be to her baby is her viral load (how much HIV is present in her bloodstream). Women with new or recent infections or people in later stages of AIDS tend to have higher viral loads and may be more infectious.

HIV is transmitted from an HIV-infected woman to her baby in about 25% of pregnancies if intervention with antiretroviral medications does not occur. The perinatal transmission rate has dropped dramatically in the United States due to the widespread use of AZT by HIV-infected pregnant women. When a woman's health is monitored closely and she receives a combination of antiretroviral therapies during pregnancy, the risk of HIV transmission to the newborn drops below 2%.

In some pregnancies, cesarean section (C-section) may be recommended to reduce the risk of transmission from woman to baby. Advice about medications and C-section should be given on an individual basis by a medical provider with experience in treating HIV-positive pregnant women. Most states, including Florida, require pregnant women to be counseled regarding risks around HIV and offered voluntary HIV testing.

HIV Testing

The first HIV antibody test became available in 1985. Since then, new HIV antibody tests have been developed and approved by the Food and Drug Administration (FDA). Currently, these antibody tests involve a two-step process utilizing a screening test and, when the **screening test** is reactive (positive), a **confirmatory test**.

Those who have put themselves at risk through anal, vaginal, or oral sex, or shared needles, and anyone who has had an occupational exposure may benefit from HIV testing. People may have partners with risk factors, and these people (along with their partners) should consider testing. For occupational exposure, refer to your employer protocol or to Module 5 of this course.

New drug therapies for HIV infection can sustain an infected person's health for long periods of time. Early detection allows people with HIV the option to receive medical treatment sooner, take better care of their immune system, and stay healthier longer. Additionally, early detection of HIV allows people to take precautions not to infect others.

The Window Period

It is important to remember that HIV antibody testing has a window period. The **window period** is the time between infection with the virus and when the HIV-infected person develops enough antibodies to be detected by the antibody test. Until the infected person's immune system makes enough antibodies to be detected, the test will be negative even though the person is infected with HIV.

Unfortunately, there is no way to know how long each infected person will take to develop antibodies. Some infected people are able to produce antibodies as early as 2 weeks after infection and almost everyone will develop enough antibodies to be detected by 12 weeks (3 months) after infection. Therefore, to be sure, people should test 3 months after the last potential HIV exposure.

Because people who are newly infected have so few antibodies to fight HIV, the virus can grow and multiply unchecked. During this time, they can have a large amount of virus in their blood, making them highly infectious for HIV. During the window period it is possible for an infected person to test negative (before they develop antibodies) but still be able to infect another person.

Confidential and Anonymous Testing

HIV testing can only be done with the person's consent. Consent may be contained within a comprehensive consent for medical treatment. It can be verbal or written, but must be specific to HIV and must be documented. There are some rare exceptions where a person can be tested without their consent.

With confidential HIV testing, the clients give their real name and the information about the testing is maintained in their medical records. The results are confidential. Results and testing information are not released to others except when medically necessary or under special circumstances including when a release is signed for the results to be given to another person or agency. HIV is a reportable condition in most states—including Florida—so confidential HIV results are reported to local public health officials.

Anonymous HIV antibody testing—where clients do not give their name and the person who orders or performs the test maintains no record of the name of the person being tested—is also available in Florida. As part of the informed consent process, a test subject must also be given information on the availability and location of anonymous test sites. Each county health department maintains a list of available anonymous test sites to be disseminated to all people and programs offering HIV testing within their service area (FDOH, 2010).

HIV Antibody Tests

The first HIV antibody test became available in 1985. Since then, new HIV antibody tests have been developed and approved by the Food and Drug Administration (FDA). Currently, these antibody tests involve a two-step process utilizing a screening test and, when the screening test is reactive (positive), a confirmatory test.

Step 1: Screening Test

The first test done on a specimen is a screening test called an **enzyme-linked immunosorbent assay test (ELISA, or EIA**). This type of test screens for the presence of antibodies to HIV in blood, urine, or oral fluid. Screening tests are inexpensive and highly accurate.

Most HIV antibody screening tests are conventional, in that the specimen is collected from the client and sent to a laboratory for testing. If a screening test is negative (no antibodies detected), the results can be released to the client. If the screening test is reactive (positive) at the laboratory, a confirmatory **Western Blot test** is conducted on the same sample.

Rapid tests are also screening tests, but they are conducted at the test site, often with the client present, and negative results are available in under an hour. Reactive (antibodies detected) results from a rapid test must be confirmed. This is done because there is a small chance that an HIV screening test may detect proteins related to other autoimmune diseases and react to those proteins with a positive result.

Step 2: Confirmatory Testing

If a rapid test is reactive, an additional specimen must be drawn from the client and sent to the lab for confirmatory Western Blot testing. The HIV Western Blot detects antibodies to the individual proteins that make up HIV. This test is much more specific, and more costly, than the ELISA screening test.

Rapid HIV Test

The rapid test is an immunoassay used for screening and it produces quick results, in 20 minutes or less. Rapid tests use blood or oral fluid to look for antibodies to HIV. If an immunoassay (lab test or rapid test) is conducted during the window period (ie, the period after exposure but before the test can find antibodies), the test may not find antibodies and may give a false negative result. All immunoassays that are positive need a followup test to confirm the result (CDC, 2013b). Information about FDA-approved tests and their use in various settings is available through the CDC website.

HIV Rapid Test Kit

Contents of the CAPILLUS HIV-1/HIV-2 Rapid Test Kit that tests whole blood, serum, or plasma. Source: CDC.

Home HIV Test

Currently there are only two home HIV tests: OraQuick In-home HIV test and the Home Access HIV-1 Test System. If you buy your HIV home test online make sure it is FDA-approved (CDC, 2013b).

The OraQuick In-Home HIV Test provides rapid results in the home. The testing procedure involves swabbing your mouth for an oral fluid sample and using a kit to test it. Results are available in 20 minutes. If you test positive, you will need a followup test. The manufacturer provides confidential counseling and referral to followup testing sites. Because the level of antibody in oral fluid is lower than it is in blood, blood tests find infection earlier than oral fluid tests. Up to 1 in 12 people may test false negative with oral fluid tests (CDC, 2013b).

The Home HIV Access HIV-1 Test System is a home collection kit that involves pricking your finger to collect a blood sample, sending the sample to a licensed laboratory, then calling in for results a few days later. If the blood tests positive, a followup test is performed right away. This test is anonymous. The manufacturer provides confidential counseling and referral to treatment. The tests conducted on the sample collected at home find infection later than most lab-based tests offered by providers (CDC, 2013b).

A positive test result means you are HIV positive and can infect others who come in contact with your blood, semen, or vaginal fluids. A negative result means there are no antibodies to HIV in your blood at the time of the test. A negative test does not mean you are HIV negative—you may be infected but be in the "window period"—a period lasting up to 6 months in which an infected person has no detectable antibodies in their blood.

Counseling

In most states, HIV test counseling is offered to clients who are at risk for HIV or who request counseling. The goal of HIV counseling is help individuals assess risk, understand test results, and develop a personalized prevention plan.

Florida law requires those who perform HIV tests in county health departments and other registered testing sites obtain the informed consent of the test subject, confirm positive preliminary results with a supplemental test before informing the test subject of the result (except as provided for by statute), and make a reasonable attempt to notify the test subject of the test result. Although Florida law no longer requires pre-test counseling—except in the case of a provider who attends a pregnant woman for conditions related to her pregnancy—the Department of Health recommends that HIV testing be preceded by a pre-test counseling session that includes test purpose and procedures, information about infection and transmission, ramifications of a positive test, reducing risky behavior, available support services, and information on how to obtain test results (FDOH, 2010, 2010b)

Florida law also no longer requires face-to-face post-test counseling; however, it does require that when test results are provided the following be included:

- For positives, information on preventing transmission of HIV, on the availability of appropriate medical and support services, and on the importance of notifying sex and/or needle-sharing partners who may have been exposed. Providers must make a good faith effort to ensure that spouses and former spouses (from the past 10 years) of HIV-infected people are notified that they may have been exposed to HIV infection.
- For negatives, information on preventing the transmission of HIV, if appropriate.

The Department of Health still recommends that face-to-face post-test counseling be provided and that it include: information about the meaning of the test results, potential consequences of a positive result, need for retesting and risk reevaluation, support services, elimination of virus transmission, tuberculosis, and all appropriate referrals.

When a pregnant woman tests positive for HIV, in addition to medical and support services, she should also be referred to the Healthy Start Care Coordination System. For more information on the availability of services, contact the Family Health Line at 800 451-BABY or the Florida AIDS Hotline at 800 FLA-AIDS (FDOH, 2010, 2010b).

HIV Infection Control in Healthcare Facilities

Preventing HIV infection is a universal goal, and within healthcare facilities prevention is an important component of any infection control program. Environmental control factors, engineering and work practice controls, as well as training and education of healthcare workers are all part of a comprehensive infection prevention program.

Universal Precautions was a system designed to prevent transmission of bloodborne pathogens in healthcare and other settings. Under Universal Precautions, blood/OPIM of all patients would always be considered potentially infectious for HIV and other pathogens. Standard Precautions is the preferred, newer system because it considers all body fluids except sweat to be potentially infectious.

Standard Precautions (and Universal Precautions) involve the use of protective barriers—defined in the following section—to reduce the risk of exposure of the employee's skin or mucous membranes to OPIM. It is also recommended that all healthcare workers take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices. Both Standard and Universal Precautions apply to blood and OPIM.

Hand Hygiene

Hand hygiene is the single most important procedure for preventing the spread of infections, and strict adherence protects both patients and workers. Despite its simplicity and effectiveness in preventing the spread of infectious disease, hand hygiene adherence remains unacceptably low throughout the world. Adherence varies among professional categories of healthcare workers and between hospital departments but is usually estimated as less than 50% (Pittet, 2001).

Hand hygiene should be done when you first come on duty, before you touch any clean equipment, and before and after every patient contact, including after touching intact skin. Hand hygiene should be performed after contact with body fluids, including your own—for example, after coughing, sneezing, or blowing your nose. In addition, perform hand hygiene:

- Before any clean or invasive procedure.

- Before contact with any portal of entry, your patient's or your own.
- Before putting on sterile gloves.
- Before and after eating.
- Each time you remove your gloves.
- When leaving an isolation room.
- When going from a dirtier to a cleaner part of the patient's body.
- When your hands feel or look dirty.
- After contact with contaminated things or environments, such as charts.
- After handling used equipment or linen.
- After using the bathroom.

If you can see dirt on your hands—whether from blood, body fluid, or something else—wash your hands with soap and water. Washing with soap and water physically removes the dirt from your hands but does not kill germs.

Alcohol products kill most germs—including viruses—but they do not remove dirt and debris from your hands. If you use alcohol choose a product that contains alcohol as part of its overall formulary—plain alcohol should not be used because it evaporates too quickly to provide enough contact time to kill germs. It is also advisable to keep fingernails short and to wear a minimum of jewelry (CDC, 2002).

Personal Protective Equipment

The Occupational Safety and Health Administration (OSHA) defines personal protective equipment (PPE) as "specialized clothing or equipment worn by an employee for protection against infectious materials."

Gloves, masks, protective eyewear, and chin-length plastic face shields are examples of personal protective equipment (PPE). PPE shall be provided and worn by employees in all instances where they may come into contact with blood or OPIM. This includes but is not limited to dentistry, phlebotomy, or processing of any bodily fluid specimen, as well as postmortem (after death) procedures.

Traditionally, latex gloves have been advised for use when dealing with blood or OPIM. However, some people are allergic to latex. In most circumstances, nitrile, vinyl, and other glove alternatives meet the definition of "appropriate" gloves and may be used in place of latex gloves. Employers are required to provide non-latex alternatives to employees with latex and other sensitivities. Reusable PPE must be cleaned and decontaminated, or laundered, by the employer.

Lab coats and scrubs are generally considered to be worn as uniforms or personal clothing. When contamination is reasonably likely, protective gowns should be worn. If lab coats or scrubs are worn as PPE, they must be removed as soon as practical and laundered by the employer.

Percutaneous Exposures

Percutaneous exposure incidents (needlestick, sharp injuries, as well as splashes leading to exposure of the skin or mucosa to blood) are a potential mode of exposure to—and transmission of—bloodborne infectious diseases among healthcare workers. According to the CDC, approximately 600,000 healthcare workers in the United States experience exposures to blood each year. These can occur in any department and may be related to faulty needle insertion techniques, needle recapping, or incautious disposal of contaminated needles and sharps. Needlestick and sharp injuries may be combined with failure to use appropriate barrier garments (for example, hand gloves of proper size) (Falagas et al., 2007).

Because injuries from needles and other sharps have been associated with transmission of hepatitis B virus (HBV), hepatitis C virus (HCV), and HIV, the prevention of sharps injuries is an essential goal of Standard (and Universal) Precautions. Needles and other sharp devices should be handled in a manner that will prevent injury to the user and to others who may encounter the device during or after routine patient care. For additional information about these exposures, their prevention, and treatment consult the CDC's Bloodborne Infectious Diseases website here.

Needles are **not** to be recapped, purposely bent or broken, removed, or otherwise manipulated by hand. After they are used, disposable syringes and needles, scalpel blades, and other sharp items are to be immediately placed in puncture-resistant, labeled containers for disposal.

Phlebotomy needles must not be removed from holders unless required by a medical procedure. The intact phlebotomy needle/holder must be placed directly into an appropriate sharps container.

Tags and Labels

Biohazard Label

Tags or labels must be used to protect employees from exposure to potentially hazardous biologic agents. Tags must contain a signal word (BIOHAZARD) or the biohazard symbol and a major message. The major message must indicate the specific hazardous condition or the instruction to the employee. The signal word must be readable at a minimum of five feet or such greater distance as warranted by the hazard.

The tag's major message must be presented in either pictographs, written text, or both. The signal word and the major message must be understandable to all employees who may be exposed to the identified hazard. All employees will be informed as to the meaning of the various tags used throughout the workplace and what special precautions are necessary.

Personal Activities

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas that carry occupational exposure. Food and drink must not be stored in refrigerators, freezers, or cabinets where blood or OPIM are stored, or in other areas.

Managing Occupational Exposures to HIV

Risk of Bloodborne Infection

The need to protect healthcare workers from bloodborne exposures resulted in the publication of the Bloodborne Pathogens Standard by the Occupational Safety and Health Administration (OSHA) in 1991. The Standard requires employers whose employees have exposure to blood to provide safe work practices, education, and barriers to exposure. The Standard was later amended to add requirements for the safe use of sharps devices.

Part of the OSHA Bloodborne Pathogens Standard is the requirement that every healthcare worker who may have contact with body fluids on the job must receive specific annual education. This education includes:

- Instruction in the basics of infection control and prevention
- Bloodborne pathogens training
- Instruction in modes of transmission, needlestick precautions, and contact precautions

An occupational exposure to a bloodborne pathogen is defined as a percutaneous injury (eg, a needlestick or cut with a sharp object) or contact of mucous membrane or non-intact skin (eg, exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or OPIM.

According to the CDC, the risk of infection varies case by case. Factors influencing the risk of infection include: whether the exposure was from a hollow-bore needle or other sharp instrument; to non-intact skin or mucus membrane (such as the eyes, nose, and/or mouth); the amount of blood that was involved, and the amount of virus present in the source's blood.

Risk of HIV Transmission

The risk of HIV infection to a healthcare worker through a needlestick is less than 1%. Approximately 1 in 300 exposures through a needle or sharp instrument result in infection. The risks of HIV infection though splashes of blood to the eyes, nose, or mouth is even smaller—approximately 1 in 1,000. There have been no reports of HIV transmission from blood contact with intact skin. There is a theoretical risk of blood contact to an area of skin that is damaged, or from a large area of skin covered in blood for a long period of time. Through December 2001, the CDC reported 57 documented cases of occupational HIV transmission to healthcare workers in the United States, and no confirmed cases since 1999 (CDC, 2011a).

Risk of Hepatitis B and C Transmission

The risk of getting hepatitis B (HBV) from a needlestick is 22% to 31% if the source person tests positive for hepatitis B surface antigen (HBsAg) and hepatitis B e antigen (HBeAg). If the source person is HBsAg-positive and HBeAg-negative there is a 1% to 6% risk of getting HBV unless the person exposed has been vaccinated.

The risk of getting hepatitis C (HCV) from a needlestick is 1.8%. The risk of getting HBV or HCV from a blood splash to the eyes, nose, or mouth is possible but believed to be very small. As of 1999 about 800 healthcare workers a year are reported to be infected with HBV following occupational exposure. There are no exact estimates on how many healthcare workers contract HCV from an occupational exposure, but the risk is considered low.

Treatment After a Potential Exposure

Follow the protocol of your employer. As soon as safely possible, wash the affected area(s) with soap and water. Application of antiseptics should not be a substitute for washing. It is recommended that any potentially contaminated clothing be removed as soon as possible. It is also recommended that you familiarize yourself with existing protocols and the location of emergency eyewash or showers and other stations within your facility.

Mucous Membrane Exposure

If there is exposure to the eyes, nose, or mouth, flush thoroughly with water, saline, or sterile irrigants. The risk of contracting HIV through this type of exposure is estimated to be 0.09%.

Sharps Injuries

Wash the exposed area with soap and water. Do not "milk" or squeeze the wound. There is no evidence that shows using antiseptics (like hydrogen peroxide) will reduce the risk of transmission for any bloodborne pathogens; however, the use of antiseptics is not contraindicated. In the event that the wound needs suturing, emergency treatment should be obtained. The risk of contracting HIV from this type of exposure is estimated to be 0.3%.

Bite or Scratch Wounds

Exposure to saliva is not considered substantial unless there is visible contamination with blood or the saliva emanates from a dental procedure. Wash the area with soap and water, and cover with a sterile dressing as appropriate. All bites should be evaluated by a healthcare professional.

Did you know. . .

> For human bites, the clinical evaluation must include the possibility that both the person bitten and the person who inflicted the bite were exposed to bloodborne pathogens.

Exposure to Urine, Vomitus, or Feces

Exposure to urine, feces, vomitus, or sputum is not considered a potential bloodborne pathogens exposure unless the fluid is visibly contaminated with blood. Follow your employer's procedures for cleaning these fluids.

Reporting the Exposure

Follow the protocol of your employer. After cleaning the exposed area as recommended above, report the exposure to the department (or individual) at your workplace that is responsible for managing exposure.

Obtain medical evaluation as soon as possible. Discuss with a healthcare professional the extent of the exposure, treatment, followup care, personal prevention measures, and the need for a tetanus shot or other care.

Your employer is required to provide an appropriate post exposure management referral at no cost to you. In addition, your employer must provide the following information to the evaluating healthcare professional:

- A description of the job duties the exposed employee was performing when exposed
- Documentation of the routes of exposure and circumstances under which exposure occurred
- Results of the source person's blood testing, if available
- All medical records that you are responsible to maintain, including vaccination status, relevant to the appropriate treatment of the employee

Remember that HIV and hepatitis infection are notifiable conditions.

Post Exposure Prophylaxis

Post exposure prophylaxis (PEP) provides anti-HIV medications to someone who has had a substantial exposure, usually to blood. PEP has been the standard of care for occupationally exposed healthcare workers with substantial exposures since 1996. Animal models suggest that cellular HIV infection happens within 2 days of exposure to HIV and the virus in blood is detectable within 5 days. Therefore, PEP should be started as soon as possible, within hours not days, after exposure and continued for 28 days. However, PEP for HIV does not provide prevention of other bloodborne diseases like HBV or HCV.

Hepatitis B PEP for susceptible people would include administration of hepatitis B immune globulin and HBV vaccine. This should occur as soon as possible and no later than 7 days post exposure.

The benefit of the use of antiviral agents to prevent HCV infection is unknown and antivirals are not currently FDA-approved for prophylaxis. Because of the frequent advances in treatment, doses and medications are not listed here. Post exposure prophylaxis can only be obtained from a licensed healthcare provider. Your facility may have recommendations and a chain of command in place for you to obtain PEP.

After evaluation of the exposure route and other risk factors, certain anti-HIV medications may be prescribed. The national bloodborne pathogen hotline provides 24-hour consultation for clinicians who have been exposed on the job. Call 888 448-4911 for the latest information on prophylaxis for HIV, hepatitis, and other pathogens.

PEP is not as simple as swallowing one pill. The medications must be started as soon as possible and continued for 28 days. Many people experience significant medication side effects. It is very important to report occupational exposure to the department at your workplace that is responsible for managing exposure. If post exposure treatment is recommended, it should be started as soon as possible. In rural areas, police, firefighters, and other at-risk emergency providers should identify a 24-hour source for PEP.

Clinical Management of HIV

When their immune system is suppressed, people have weaker defenses against the wide variety of bacteria, viruses, fungi, and other pathogens that are present almost everywhere. The opportunistic diseases and infections associated with HIV infection comprise any of the infections that are part of the AIDS-defining classification and the AIDS indicator conditions discussed earlier. The original case definition of HIV infection was based on the clinical symptoms seen in men. In 1993 the CDC revised the classification system for HIV infection and expanded the case definition for AIDS to include invasive cervical cancer, obviously a condition found only in women. Since 1993 scientists have reported further differences in the way that HIV affects men, women, and children.

Initial Evaluation

Each HIV-infected patient initially entering into care should have a complete medical history, physical examination, laboratory evaluation, and counseling. The purpose is to confirm the presence of HIV infection, obtain appropriate baseline historical and laboratory data, ensure patient understanding about HIV infection and its transmission, and initiate care. The initial evaluation also should include introductory discussion on the benefits of antiretroviral therapy (ART) for the patient’s health and to prevent HIV transmission. Baseline information then is used to define management goals and plans (DHHS, 2013).

The CD4+ T-cell count (or CD4 count) serves as the major clinical indicator of immune function in patients who have HIV infection. It is one of the key factors in determining the urgency of antiretroviral therapy (ART) initiation and the need for opportunistic infection prophylaxis. it is also the strongest predictor of subsequent disease progression and survival according to clinical trials and cohort studies (DHHS, 2013).

Treatment

Before 1996 there were three medications available to treat HIV. These drugs were used singly and were of limited benefit. Researchers in 1996 discovered that taking combinations of these and newer medications dramatically reduced the amount of HIV (viral load) in the bloodstream of a person infected with HIV. Two or three different medications are used in combination. Each one targets a separate part of the virus and its replication. The reduction of deaths from AIDS in the United States has been primarily attributed to this combination therapy, called **highly active antiretroviral therapy (HAART).**

HAART is made up of several different kinds of medications:

- Nucleoside reverse transcriptase inhibitors (NRTIs)
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- Protease inhibitors
- Fusion inhibitors
- Integrase inhibitors
- Entry inhibitors
- Combination drugs

The addition of new drugs to combination therapy has contributed to a decline in morbidity and mortality in those infected with HIV and AIDS; it has also added to the cost of HAART. A Canadian study, which analyzed healthcare costs in HIV-infected patients during 1995 to 2002, noted a substantial increase in healthcare expenditures per patient per month since the advent of HAART (Sendi and Gafni, 2003). However, when other factors are taken into consideration—such as increased productivity due to a longer lifespan—the increased cost of HAART appears to be offset by other societal gains.

In 2003 the lack of access to HIV/AIDS treatment was declared a global health emergency and world leaders set a goal of universal access to HAART by 2010. The World Health Organization (WHO) estimates that, globally, 2 million AIDS patients in developing countries were receiving HAART in December of 2006, a more than fivefold increase since 2001. However, this number is only about 26% of the estimated 7.1 million people needing HAART. Even the lowest price—US $142 per person per year for the first-line HAART regimen—remains out of reach for many patients in resource-limited settings. Because large-scale treatment began only recently in many developing countries, little is known about the long-term costs of drugs for AIDS treatment (Nunn et al., 2007).

As patients receive HAART for longer periods, AIDS case management has become more complex. Over time new antiretrovirals have emerged, offering therapeutic improvements with fewer pills. Although the prices of some new second-line antiretrovirals (ARVs) have also declined in some countries, second-line treatment is nearly always more expensive than first-line treatment because of the high costs associated with developing new technologies and the monopoly prices innovator companies enjoy during patent terms. As treatment scales up globally, many AIDS patients now receiving first-line therapies will need therapeutic alternatives. The cost of second- and third-line AIDS treatment and access to the latest ARV therapies is therefore a problem of global public health concern (Nunn et al., 2007).

Many studies have demonstrated that better outcomes are achieved in HIV-infected outpatients cared for by a clinician with HIV expertise. Appropriate training and experience, as well as ongoing continuing education, are important components for optimal care. Primary care providers without HIV experience, such as those who provide service in rural or underserved areas, should identify experts in the region who will provide consultation when needed (DHHS, 2013).

HIV and Viral Hepatitis Co-Infection

People infected with HIV are often at risk for viral hepatitis; about one-third are co-infected with either HBV or HCV, which can cause long-term illness and death. More people living with HIV have HCV than HBV. Viral hepatitis progresses faster and causes more liver-related health problems among people with HIV than among those who do not have HIV. Although drug therapy has extended the life expectancy of people with HIV, liver disease—much of which is related to HCV and HBV—has become the leading cause of non-AIDS-related deaths in this population (CDC, 2013d).

To prevent co-infection for those who are not already infected with HBV, the Advisory Committee on Immunization Practices recommends universal HBV vaccination of high-risk patients (including those who have multiple sex partners; gay, bisexual, and other men who have sex with men [MSM]; injection drug users; and those who are exposed to blood at their jobs) with HIV infection or AIDS (CDC, 2013d).

Co-infection with viral hepatitis may also complicate the treatment and management of HIV infection. Because viral hepatitis infection is often serious in people with HIV infection and may lead to liver damage more quickly, CDC recommends that all people with HIV infection be tested for HBV and HCV. The CDC also recommends that everyone born during the period 1945–1965 should be tested at least once for HCV, no matter what their HCV risk (CDC, 2013d)

HIV/HBV and HIV/HCV co-infections can be effectively treated in many people, but treatment is complex and people with co-infection should look for healthcare providers with expertise in the management of both HIV infection and viral hepatitis (CDC, 2013d).

Special Populations Vulnerable to HIV

Although HIV infection affects people from all ethnic groups, genders, ages, and income levels, some groups have been significantly affected by the AIDS epidemic. These groups include men who have sex with men, injecting drug users, people with hemophilia, infants and children, women, and people of color.

Men Who Have Sex with Men

American society has issues with homosexuality. Grief may not be validated when relationships are viewed through prejudice and considered unacceptable. An example of this may be the reaction of churches to those who are living with, or have families living with, AIDS. Many congregants report that they do not get the support they need from their church families because of the stigma attached to HIV, AIDS, and homosexuality. Self-esteem issues and psychological issues including depression, anxiety, diagnosed mental illness, and risk-taking behaviors may also complicate the lives of these men.

Injecting Drug Users

People who continue to use injecting drugs, despite warnings and information about risks, may be viewed by some as "deserving" their infection. Harm reduction measures such as needle exchange programs have been proven to reduce the transmission of bloodborne pathogens such as HIV, HBV, and HCV. In addition, poverty, self-esteem issues, and psychological issues (including depression, anxiety, diagnosed mental illness, and risk-taking behaviors) may also complicate the lives of injection drug users.

People with Hemophilia

Many hemophiliacs were infected with HIV prior to the advent of blood testing. During the 1980s, 90% of severe hemophiliacs contracted HIV or HCV through use of contaminated blood products. There is anger within this community because evidence shows that the companies manufacturing the concentrates knew their products might be contaminated but continued to distribute them anyway.

Some people considered hemophiliacs to be innocent victims of HIV, but there has been significant discrimination against them. The Ryan White Care Act, funding HIV services, and the Ricky Ray Act, which provides compensation to hemophiliacs infected with HIV, were both named after HIV-positive hemophiliacs who suffered significant discrimination (arson, refusal of admittance to grade school) in their hometowns.

Infants and Children

At the end of 2010, Florida ranked second, behind New York, in the number of cumulative pediatric AIDS cases reported (FDOH, 2010a). Ninety-five percent of pediatric AIDS cases were acquired perinatally—the remaining 5% were acquired through blood transfusion, hemophilia, or another risk. Prevention of perinatal HIV is a high priority in Florida and several initiatives are focused on that goal. There has been significant progress in combating perinatally acquired AIDS—its incidence has declined from a peak of 194 HIV-infected babies born in Florida in 1992 to 7 cases in 2012, although that is up from 3 cases in 2011 (FDOH, 2012).

Children show significant differences in their HIV disease progression and their virologic and immunologic responses when compared to adults. Without drug treatment, children may have developmental delay, *P. carinii* pneumonia, failure to thrive, recurrent bacterial infections, and other conditions related to HIV. The ARV treatments that are available for HIV infection may not be available in pediatric formulations. The medications may have different side effects in children than they do in adults.

It is vital that women know their HIV status before and during pregnancy. Antiretroviral treatment significantly reduces the chance that their child will become infected with HIV. Prior to the development of antiretroviral therapies, most HIV-infected children were very sick by 7 years of age. In 1994 scientists discovered that a short treatment course of the medication AZT for pregnant women dramatically reduced the number, and rate, of children who became infected perinatally. Cesarean sections for delivery may be warranted in certain cases to reduce HIV transmission. As a result, perinatal HIV infections have substantially declined in the developed world.

Early diagnosis of HIV infection in newborns is now possible. Antiretroviral therapy for infants is now the standard of care, and should be started as soon as the child is determined by testing to be HIV-infected. Apparently uninfected children born to HIV-positive mothers are currently treated with antiretroviral medicines for 6 weeks to reduce any possibility of HIV transmission.

Women

Women in the United States, and worldwide, are becoming infected with HIV at higher rates than any other group of people. This is particularly true of women of color. Certain strains of HIV may infect women more easily. The strain of HIV present in Thailand seems to transmit more easily to women through sexual intercourse. Scientists believe that women and receptive partners are more easily infected with HIV than insertive partners. Receptive partners are at greater risk for transmission of any sexually transmitted disease, including HIV.

Women infected with HIV are at increased risk for a number of gynecologic problems, including pelvic inflammatory disease (PID), abscesses of the fallopian tubes and ovaries, and recurrent yeast infections. Some studies have found that HIV-infected women have a higher prevalence of infection with the human papilloma virus (HPV). Cervical dysplasia is a precancerous condition of the cervix caused by certain strains of HPV. Cervical dysplasia in HIV-infected women often becomes more aggressive as the woman's immune system declines. This may lead to invasive cervical carcinoma, which is an AIDS-indicator condition. It is important for women with HIV to have more frequent Pap tests.

Women may become infected with HIV from a partner who either used injecting drugs or had other sexual partners. Many of these women assumed that the relationship was monogamous, or that they "knew" their partner's history. Many others are unable to discuss or implement safer sex practices because they lack the skills or because domestic violence is present in their relationship.

Women who are infected with HIV, or who have family members who have HIV, face some unique challenges. Women may postpone taking medication, or going to medical appointments, in order to care for their children or other family members. Many women have problems with lack of transportation, lack of health insurance, limited education, and low income. They may have childcare problems that prevent them from going to medical appointments. Several studies have shown that women in the United States who have HIV receive fewer healthcare services and HIV medications than men. This may be because women aren't diagnosed or tested as frequently.

Women (and also men) may fear disclosing their HIV status to others, fearing loss of their jobs, housing, or other forms of discrimination. Single parents with HIV may feel particularly fearful because of their lack of support.

Many women who are infected with HIV do not consider this to be their worst problem. Their symptoms may be mild and manageable for many years. Meanwhile, they may have more pressing concerns, such as their lack of income, housing, access to medical care, possible abusive relationships, and concerns about their children (WSDOH, 2007).

People of Color

African Americans and Hispanics have disproportionately higher rates of AIDS in the United States, despite the fact that there are no biologic reasons for the disparities. African American and Hispanic women make up less than 25% of the total U.S. population, but account for 77% of all reported AIDS cases in women. African Americans make up about 12% of the population, but account for 37% of all AIDS cases in the United States. Hispanics make up about 13% of the population, but account for 20% of the AIDS cases in the United States. In some areas, disparities also exist in the number of AIDS cases in Native Americans.

There is no single reason that stands out as to why the disparities exist. One factor is health disparities, which are linked to socioeconomic conditions. Another factor is distrust of the healthcare system. Both legacies of the past and current issues of race mean that many people of color do not trust "the system" for a variety of reasons. Thus, even when income is not a barrier, access to early intervention and treatment may be limited. And HIV may be only one of a list of problems that also includes adequate housing, food, and employment.

Another factor may be the diversities within these populations. Diversity is evident in immigrant status, religion, languages, and geographic locations, as well as socioeconomic conditions. Providing targeted information to these diverse populations is challenging.

A significant amount of denial about HIV risk continues to exist in these communities. As with other groups, there may also be fear and stigmatization of those who have HIV. Prevention messages must be tailored and presented in a culturally and linguistically appropriate manner. The messages must be carried through channels that are appropriate for the individual community. These channels may include religious institutions or respected elders in the community. Ironically, it may be these institutions or elders who, in the past, have contributed to the misinformation and stigma associated with HIV.

Many HIV prevention programs are recognizing the importance of working with diverse communities. Input from these communities must be included in planning, delivering, and evaluating HIV prevention activities.

HIV Prevention

Many are seeking to address the HIV epidemic through prevention programs. These efforts include national, international, and local programs. A bright spot on the horizon is the possibility of a vaccine.

Potential Vaccine in the Pipeline

As noted in the bulletin at the top of the course, there is growing confidence that in the future a vaccine for HIV may be able to "remove the HIV virus from the body." For a video issued in September 2013 by Louis Picker, associate director of the Oregon Health and Science University's Vaccine and Gene Therapy Institute, click here.

National Strategy and High-Impact Prevention

A conservative estimate for the period 1991 to 2006 finds that in the United States prevention has already averted more than 350,000 HIV infections. The nation's HIV prevention efforts are guided by a single, ambitious strategy for combating the epidemic: the National HIV/AIDS Strategy (NHAS). Recent scientific breakthroughs and growing leadership and momentum among some of the hardest hit communities bode well for change (CDC, 2013e).

Many challenges remain and by CDC's latest estimates, approximately 50,000 Americans become infected with HIV annually, and 16,000 people with AIDS died in 2008. As a result, the number of people living with HIV in the United States, now at nearly 1.2 million, continues to grow by tens of thousands each year, creating more opportunities for HIV transmission. And a range of social, economic, and demographic factors affect some Americans' risk for HIV, such as stigma, discrimination, income, education, and geographic region (CDC, 2013e).

To address the continuing challenges, CDC and its partners are pursuing a High-Impact Prevention approach to reducing new HIV infections. High-Impact Prevention refers to use of combinations of scientifically proven, cost-effective, and scalable interventions targeted to the right populations in the right geographic areas, and is intended to increase the impact of HIV prevention efforts—an essential step in achieving the goals of NHAS (CDC, 2013e).

This approach is designed to maximize the impact of prevention efforts for all Americans at risk for HIV infection, including gay and bisexual men, communities of color, women, injection drug users, transgender women and men and youth (CDC, 2013e).

Syringe Exchange Programs

Syringe exchange programs (SEPs) provide free sterile syringes in exchange for used syringes to reduce transmission of bloodborne pathogens among injection-drug users. SEPs in the United States began as a way to prevent the spread of HIV and other bloodborne infections such as HBV and HBC. The National Institute on Drug Abuse recommends that people who continue to inject drugs use a new, sterile syringe for each injection. As of November 2007, a total of 185 SEPs were operating in 36 states, the District of Columbia, and Puerto Rico (CDC, 2007). A ban on the use of federal money for these programs was reinstated in 2012, and SEPs are banned in the state of Florida. However, efforts were mounted in the state legislature 2013 to establish a five-year pilot program to legalize SEPs (Adams, 2010; Burch, 2013; CDC, 2010/2012).

Behavior Change and HIV Prevention

In instances where national epidemics have been reversed, a number of evidence-based studies have shown that broad-based behavioral changes were central to success. Hundreds of randomized controlled trials have demonstrated that individual, small group, and community-level interventions can generate safer behaviors (Working Group, 2008).

Studies in low- and middle-income countries among young people, sex workers, and other populations have demonstrated that prevention programs have the ability to change sexual and drug-use behaviors in resource-limited settings to prevent HIV transmission. The prevention programs have used the following approaches to prevent HIV infection:

- Programs are targeted to individual behavior.
- Emphasis is on broad-based efforts to alter social norms and address the underlying drivers of the epidemic.

In addition, there is effective use of available tools such as:

- Treatment of sexually transmitted infections
- Medical male circumcision
- Substitution therapy for chemical dependence
- Programs that provide access to clean injecting equipment

Using these and other interventions aimed at behavioral change, several countries—Brazil, Australia, Uganda, Thailand, and Senegal, among others—have had dramatic successes in curbing the spread of HIV within their borders. Together, these examples suggest that countries in a wide variety of settings have contributed to changes in HIV risk behaviors and, in doing so, have saved countless lives by averting HIV transmission. Based on the totality of epidemiologic evidence, it appears that national implementation of evidence-informed combination HIV prevention efforts in the 1990s was associated with a 50% to 90% decline in HIV incidence and prevalence in key populations (Working Group, 2008).

Brazil

In Brazil public health campaigns have encouraged discussion of HIV, including frank public-awareness campaigns, condom promotion, focused behavioral interventions, syringe and needle exchange, school-based HIV education, prevention services in prisons, and voluntary HIV counseling and testing. Brazil has been particularly successful in reversing a serious epidemic among injection drug users. Condom use increased by almost 50% among sexually active adults between 1998 and 2005, and focused behavior change prevention programs helped maintain HIV prevalence at low levels among sex workers. Although the World Bank had predicted in 1990 that 1.2 million Brazilians would be infected by 2000, fewer than 600,000 were living with HIV in 2002 (Working Group, 2008).

Australia

In Australia, public awareness campaigns have focused on behavioral interventions among gay men, syringe exchange programs, and voluntary counseling and testing for HIV. As a result of Australia's early, comprehensive response, focused largely on behavior change, annual HIV incidence peaked in 1985 and declined through the end of the 1990s. Between 1990 and 2000, the annual number of new HIV diagnoses fell by half (Working Group, 2008).

Uganda

In what is perhaps the world's best-documented national prevention success, Uganda began in the mid-1980s to address the rapid spread of HIV. It implemented public-awareness campaigns that encouraged young people to delay initiation of sex and urged sexually active adults to reduce the number of sex partners. In the 1990s, the country supplemented these early measures with condom promotion and investment in voluntary counseling and testing. From the earliest years, community-generated programs played a major role in the country's AIDS response.

The results of these efforts were remarkable. The percentage of young people who were sexually active fell by more than half between 1989 and 1995, and Ugandans were significantly less likely to have multiple sex partners than people living in neighboring countries. Increases in condom use in the 1990s helped preserve and accelerate early prevention gains. By the late 1990s, infection levels in capital city Kampala had fallen by two-thirds, and national HIV prevalence had been cut in half (Working Group, 2008).

Thailand

In Thailand the annual incidence of HIV has declined from 143,000 in 1991 to 19,000 in 2003 through the country's innovative 100% condom program, which promoted the use of condoms in brothels. The government also promoted public education about HIV and fair treatment of those infected with the virus. Had Thailand not brought comprehensive HIV prevention to scale, it would now have 7.7 million HIV infections, rather than the estimated 580,000 residents currently living with HIV (Working Group, 2008).

Senegal

In Senegal, early investment in awareness-raising, condom promotion, intensive prevention services for populations at greatest risk, and engagement of community leaders and faith-based organizations, combined with high rates of medical male circumcision, succeeded in keeping national HIV prevalence below 1% when neighboring countries experienced significant increases in infections (Working Group, 2008).

Psychosocial Issues with HIV Infection

Most states, including Florida, have systems to link people with HIV infection and AIDS to care and support services. Case managers in the HIV/AIDS programs are the primary contact people for services. They can usually be found by contacting the local health department or health district. HIV-infected or -affected people can be linked with medical care, insurance programs, volunteer groups, hospice, and other types of care and support services that may be needed during the course of a person, or family's, time of living with HIV.

Difficult Realities

People with HIV and their families and friends face a multitude of difficult realities:

- Even with the advent of antiretroviral (ARV) drugs, people with AIDS still die prematurely.
- Men who have sex with men and injecting drug users—who may already be stigmatized and subjected to social and job-related discrimination—may encounter

even more societal pressure and stress with a diagnosis of HIV or AIDS.

- Ninety percent of all adults with AIDS are in the prime of life and may not be prepared to deal with death and dying.
- The infections and malignancies that accompany AIDS—along with certain medications—can diminish and disfigure the body.
- People who are living with HIV face the need to practice "safer sex" and take medications for the remainder of their lives.

One thing that characterizes the grief around AIDS is the repetition of deaths among peers that one person may experience. Many people working with or living with AIDS for years have gone to countless funerals and have seen a succession of their friends pass away. This is sometimes termed chronic grief. Chronic grief intensifies when an individual realizes that before the grieving process for one death is complete many more people may have died.

The idea of cumulative multiple loss or grief saturation is not new. The emotions felt by long-term survivors of HIV and their HIV-negative friends and families are similar to the emotions of the survivors of the Holocaust, survivors of natural disasters (earthquakes, tornados), and to the battle fatigue (PTSD) described by soldiers.

Psychological Suffering

Infection with HIV causes distress for those who have HIV and for their caregivers, family, lovers, and friends. Grief can manifest itself in physical symptoms, including clinical depression, hypochondria, anxiety, insomnia, and the inability to get pleasure from normal daily activities. Dealing with these issues may lead to self-destructive behaviors such as alcohol or drug abuse.

Disbelief, numbness, and inability to face facts occur for some. The fear of the unknown, the onset of infections, swollen lymph nodes, loss of weight (or unusual weight gain) can be accompanied by fear of developing AIDS, or of getting sicker. People infected with HIV/AIDS are often rejected by family, friends, or co-workers. In some cases, guilt develops about the disease, about past behaviors, or about the possibility of having unwittingly infected someone else.

People living with HIV may feel as though their "normal" lives have completely ended as they plan detailed medication schedules and medical appointments. The cost of the medications for HIV may result in financial hardship, even if the person has medical coverage.

Sadness, hopelessness, helplessness, withdrawal, and isolation are often present. Anger is common: at the virus, at the effects of the medications or the failure of some of the medications, at the prospect of illness or death, and at the discrimination that often encountered. Some people with HIV consider suicide or attempt suicide, and some may actually kill themselves. Call the crisis hotline listed in your phone book, or call the national suicide hotline at 800 784-2433 or 800 273-8255.

Caregivers

Often feelings experienced by the caregiver will mirror those of the patient, such as a sense of vulnerability and helplessness. Caregivers may experience the same isolation as the person with HIV infection. Finding a support system, including a qualified counselor, can be just as important for the caregiver as for the person who has HIV disease. Support from co-workers can be especially important. Caregivers may find it necessary to acknowledge their own experiences and feelings when dealing with all aspects of this disease. Good self-care for the caregiver is important and involves addressing issues specific to caregiving.

HIV and AIDS in Florida

In 1988 Florida became one of the first states with high rates of HIV infection to enact comprehensive legislation to address the AIDS epidemic. The Florida Omnibus AIDS Act stipulates that all licensed healthcare providers must take a course on HIV/AIDS and licensed healthcare facilities must educate their entire workforce on HIV infection. It also sets standards for testing, confidentiality, informed consent, reporting requirements, and discrimination (FDOH, 2013). For more information, click here.

Testing, Informed Consent, and Confirmation

The Florida Omnibus AIDS Act stipulates that HIV testing must be "informed, voluntary, and confidential" and "shall be preceded by an explanation of the right to confidential treatment of information identifying the subject of the test and the results of the test to the extent provided by law" (Florida Senate, 2010).

Consent does not have to be in writing but an explanation of the test and an indication that consent was obtained must be recorded in the medical chart. In addition, the person tested must be informed that a positive test will be reported to the county health department with sufficient information to identify the test subject. "All reasonable efforts" must be made to inform the subject of a positive test result. In addition, healthcare providers are required to confirm positive test results through corroborating tests before informing the test subject of the result (FDOH, 2013).

There are some exceptions in Florida law to the requirement to obtain informed consent prior to conducting a test for HIV (Florida Senate, 2013):

- When testing for sexually transmissible diseases is required by state or federal law, or by rule including the following situations:
  - When a person is convicted of prostitution or procuring another to commit prostitution
  - When an inmate is released from prison
  - When deemed necessary by a medical examiner
  - When a woman is pregnant (see Pregnancy below)
- Exceptions provided for blood, plasma, organs, skin, semen, or other human tissue
- During bona fide medical emergencies when needed to provide appropriate care
- When obtaining informed consent would be detrimental to the patient
- When performed as part of an autopsy for which consent was obtained
- When done at a victim's request in a prosecution for any type of sexual battery where a blood sample is taken from the defendant voluntarily
- When mandated by a court order
- For epidemiologic research
- When human tissue is collected lawfully without the consent of the donor for corneal removal or enucleation of the eyes
- When a healthcare worker has had significant exposure to a patient's blood, and a blood sample is already available that was given voluntarily for other purposes
- When a hospitalized infant is determined to be abandoned
- When done on a person already determined to be HIV positive and for repeat testing

The Florida Omnibus AIDS Act also directs the Florida Department of Health to conduct epidemiologic studies and provide testing and patient care services throughout the state. In 2010 there were 405,757 HIV tests performed in Florida by county public health departments, with 1.1% of the tests being positive (FDOH, 2010a).

Confidentiality

In Florida, all patient medical records are confidential, but to encourage voluntary testing the Omnibus AIDS Act makes HIV test results superconfidential. The superconfidentiality applies only to the results of laboratory reports and does not extend to clinical observations regarding symptoms associated with AIDS. Breach of confidentiality of sexually transmitted disease information is a third-degree felony.

Pregnancy

Florida law requires that during pregnancy every person—including physicians and midwives—attending a pregnant woman for conditions relating to pregnancy during the period of gestation and delivery must offer the woman tests for sexually transmissible diseases, including HIV. In 2005 the law was amended to mandate "opt-out" testing for pregnant women. Pregnant women are advised that they will be tested for HIV but they have the right to refuse. Any refusal must be obtained in writing and placed in the woman's medical record (FDOH, 2013).

Minors

Minors under the age of 18 do not need parental consent for HIV and STD testing. Florida law specifically forbids informing the parents of the minor's HIV test, results, or treatment, even indirectly (FDOH, 2013).

Discrimination

The Florida Omnibus AIDS Act prohibits discrimination against those who are HIV-positive in employment, housing, public services, health and life insurance, and public accommodations.

Notifiable Disease

HIV and AIDS are notifiable diseases in Florida. In 1996 Florida began requiring physicians and laboratories to report HIV-positive test results to local health authorities with patient identifiers. Failure to do so can result in a $500 fine and disciplinary action by their licensing board. Under Department of Health (DOH) rules, practitioners must report HIV-positive diagnoses of all people to their local county health department within 2 weeks, and infants born to HIV-positive women must be reported the next day. In 2006 the DOH expanded its reporting requirements to include CD4 and viral load data (FDOH, 2013).

Conclusion

There have been many well-documented and successful strategies employed in the United States and throughout the world to curb the devastating expansion of the AIDS epidemic. Nevertheless, the cost in lives and lost productivity remains a staggering problem. In the United States there were 42,011 new HIV infections reported in 2009 and worldwide there are about 2.5 million new infections annually.

HIV/AIDS affects people of all ages and ethnic backgrounds in Florida and is the third leading cause of death among women between the ages of 25 and 44, although it is the sixth leading cause of death in men in that age group. In 2010 it was the fourth leading cause of death among black men and second among black women.

As healthcare workers, we have the ability to encourage practices that are known to reduce the spread of AIDS including behavioral change, prompt treatment of sexually transmitted disease, encouraging use of clean injection drug equipment, routine HIV testing, patient education and counseling, and consistent condom use. The goal is to eliminate new HIV infections entirely in Florida and throughout the United States and the world. We all play a vital role in accomplishing this goal.

Resources and References

Florida State Resources

Department of Health
Bureau of Communicable Disease
HIV/AIDS & Hepatitis Section
Physical Address:
2585 Merchants Row Boulevard
Tallahassee, FL

Mailing Address:
4052 Bald Cypress Way, Bin A09
Tallahassee, FL 32399-1714
Phone: 850 245 4300
Fax: 850 245 4297
diseasecontrol@doh.state.fl.us
http://www.doh.state.fl.us/Disease_ctrl/aids/index.html

National Resources

Centers for Disease Control and Prevention
www.cdc.gov/hiv/default.html (HIV/AIDS)
www.cdc.gov/niosh/topics/bbp/ (Workplace Safety & Health)
cdcinfo@cdc.gov
404 639 3311
800 CDC-INFO (800 232 4636)
TTY: 888 232 6348

CDCNPIN—National Prevention Information Network
800-CDC-INFO/800 232 4636
800-HIV-0440/800 448 0440

FDA-Approved Test Kit
http://www.fda.gov/BiologicsBloodVaccines/BloodBloodProducts/ApprovedProducts/LicensedProductsBLAs/BloodDonorScreening/InfectiousDisease/UCM080466

KNOW Curriculum Sources
Washington State Department of Health
HIV Prevention and Education Services
http://www.doh.wa.gov/cfh/hiv.htm
800 272 2437

Global Resources

Joint United Nations Programme on HIV/AIDS (UNAIDS)
http://www.unaids.org/en/

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Post Test

Use the answer sheet following the test to record your answers.

1. According to U.N. estimates, since 2001 new cases of HIV infection are:

    a. Increasing in every region of the world.
    b. Increasing only in the Caribbean and North Africa.
    c. Decreasing in every region of the world.
    d. Increasing in some regions and decreasing in others.

2. The majority of HIV cases in the United States:

    a. Occur in women of Hispanic ancestry.
    b. Occur in men, accounting for about 73% of cases.
    c. Are in African American women.
    d. Are seen in teenage boys.

3. Since 2007, HIV-related deaths in Florida have:

    a. Increased by only 1 percent.
    b. Remained steady.
    c. Decreased.
    d. Increased by only 5 percent.

4. HIV:

    a. Progressively destroys the body's ability to fight infection and disease.
    b. Immediately destroys the body's ability to fight infection and disease.
    c. Causes the body's immune system to attack body organs.
    d. Is the same as AIDS.

5. The term *AIDS*:

    a. Refers to the period immediately after HIV infection.
    b. Can be used interchangeably with the term *HIV*.
    c. Refers only to the most advanced stage of HIV infection.
    d. Refers to the period when the person is least vulnerable to other infections.

6. The "natural history" of HIV infection:

a. Refers to the history of the spread of AIDS from Africa to the rest of the world, and how the disease has affected humans.

b. Begins with viral transmission of the disease and ends with AIDS.

c. Tells how the HIV virus has changed since it first infected humans.

d. Begins with symptomatic HIV infection and ends with AIDS.

7. Transmission of HIV can occur through:

a. Sharing of needles and infusion of current blood products.

b. Sharing of needles and use of antiviral drugs.

c. Tattooing and donating blood in the United States.

d. Anal sex and accidental needlestick injuries.

8. Approximately 25% of people in the United States who are infected with HIV do not know they are infected.:

a. True

b. False

9. An HIV-infected woman may transmit the virus to her baby during:

a. Pregnancy, during the birth process, or following pregnancy by breastfeeding.

b. Pregnancy only.

c. Birth by C-section only.

d. Birth or after the birth by breastfeeding, but not during pregnancy.

10. There are several tests available to test for HIV infection. A positive test means you:

a. Do not have HIV.

b. Are infected with HIV and can infect others who come into contact with your blood, semen, or vaginal fluids.

c. Are infected with HIV, but cannot infect another person for at least 6 months.

d. Do not have HIV, but may be in the "window period" with no detectable antibodies for up to 6 months.

11. Which of the following is true about HIV counseling in Florida?:

a. State law requires face-to-face pre- and post-test counseling.

b. Department of health recommends pre- and post-test counseling by phone.

c. State law requires no counseling of any type for anyone.
d. Department of Health recommends face-to-face post-test counseling.

12. Standard Precautions:

a. Consider all body fluids, including sweat, to be potentially infectious.
b. Are not implemented unless a patient has been diagnosed with AIDS or hepatitis C.
c. Do not include the use of latex gloves.
d. Mandate only the use of protective eyewear and face shields.

13. Hand hygiene:

a. Is required only after contact with blood or other infectious materials.
b. Is not required after removing gloves.
c. Includes the use of lotion to prevent dry skin.
d. Is required after removal of gloves or other PPE and upon leaving the work area.

14. An example of a percutaneous exposure is:

a. Carrying a red-bagged urine specimen to the lab.
b. Taking the temperature of an HIV-infected patient using Standard Precautions.
c. A needlestick from a patient who probably does not have HIV.
d. Assisting an HIV-infected patient to walk in the hallway using Standard Precautions.

15. Biohazard labels:

a. Must include a signal word/symbol or a message, but not both.
b. Must be readable from a minimum of five feet.
c. Are used to protect only nursing staff from hazardous biologic exposure.
d. Need not be understood by housekeeping staff.

16. An example of an occupational exposure to a bloodborne pathogen is:

a. A percutaneous injury or contact of your non-intact skin with OPIM.
b. Carrying a red-bagged specimen to the lab.
c. Changing the bedding of an HIV-infected patient.
d. Assisting an HIV-infected patient to bathe.

17. HIV transmission risk to healthcare workers is:

a. Highest with a blood splash to the eyes, nose, or mouth.

b. Less than 1% from a needlestick.

c. Exactly the same as that of HCV.

d. Not affected by the amount of virus present in the exposure.

18. Sharps injuries:

a. Should be "milked" to increase cleansing blood flow.

b. Must not be treated with antiseptics.

c. Should be washed with soap and water.

d. Are not considered an occupational exposure.

19. Treatment after a potential exposure includes all of the following except:

a. Washing the affected area with soap and water.

b. Flushing exposed eyes, nose, or mouth with water, saline, or sterile irrigants.

c. Removal of potentially contaminated clothing.

d. Application of antiseptics when washing is inconvenient.

20. Following HIV exposure, employees must:

a. Call their personal physician to set up an appointment.

b. Cleanse the exposed area and then report the incident immediately to the person responsible for managing exposure.

c. Be assigned to another department until the incident is fully investigated.

d. Call the health department for emergency instructions.

21. The combination drug therapy currently used to treat HIV is called:

a. Toxoplasma gondii.

b. IGRA.

c. HAART.

d. CD4 count.

22. Treatment for HIV infection in infants:

a. Is the same as treatment for the mother.

b. Should be started as soon as the child tests positive for HIV-infection.

c. Should not be used in apparently uninfected children who are born to mothers who are HIV-positive.

d. Should not be started until 2 years of age or later.

23. Programs aimed at interventions to change behavior:

a. Are rarely successful.

b. Have actually changed sexual and drug-use behavior in resource-limited settings.

c. Have shown that use of condoms is not effective in preventing spread of HIV.

d. Have shown that providing access to clean injecting equipment encourages drug addiction.

24. Chronic grief is associated with AIDS because of the repetition of deaths among peers that one person may experience.:

a. True

b. False

25. The Florida Omnibus AIDS Act requires that HIV testing be:

a. Informed, voluntary, and consensual.

b. Informed and voluntary only.

c. Informed, voluntary, and confidential.

d. Voluntary and confidential only.

26. To encourage voluntary testing, Florida law makes HIV test results superconfidential and breach of this confidentiality is:

a. A third-degree felony.

b. A misdemeanor.

c. Cause for dismissal.

d. Punishable by a $10,000 fine.

27. Florida law was amended in 2005 to mandate “opt-out” testing for pregnant women.:

a. True

b. False

Answer Sheet

FL: HIV, 3 units

Name (Please print your name): _____

Date: _____

Passing score is 80%

1. _____
2. _____
3. _____
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22. _____

23. _____
24. _____
25. _____
26. _____
27. _____

Course Evaluation

Please use this scale for your course evaluation. Items with asterisks * are required.

- 5 = Strongly agree
- 4 = Agree
- 3 = Neutral
- 2 = Disagree
- 1 = Strongly disagree

* Upon completion of the course, I was able to:

a. Discuss the prevalence and incidence of HIV and AIDS.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

b. Identify the cause of HIV infection and the mechanisms of infection and transmission of HIV.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

c. Outline the basic components of HIV antibody testing and confirmation.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

d. Describe infection control practices shown to prevent transmission of HIV.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

e. Discuss managing a possible occupational exposure to HIV.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

f. Explain the initial evaluation and clinical management of HIV patients, including antiretroviral therapy.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

g. Identify the special populations who may be especially vulnerable to HIV-infection.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

h. Spell out HIV prevention strategies, including behavioral change management and needle exchange programs.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

i. Discuss the psychosocial issues associated with HIV and AIDS infection.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

j. Name the main components of the Florida Omnibus AIDS Act.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

* The author(s) are knowledgeable about the subject matter.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

* The author(s) cited evidence that supported the material presented.

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

* This course contained no discriminatory or prejudicial language.

○ Yes ○ No

* The course was free of commercial bias and product promotion.

○ Yes ○ No

* As a result of what you have learned, do you intend to make any changes in your practice?

○ Yes ○ No

If you answered Yes above, what changes do you intend to make? If you answered No, please explain why.

* Do you intend to return to ATrain for your ongoing CE needs?

○ Yes, within the next 30 days.

○ Yes, during my next renewal cycle.

○ Maybe, not sure.

- ○ No, I only needed this one course.

* Would you recommend ATrain Education to a friend, co-worker, or colleague?

- ○ Yes, definitely.
- ○ Possibly.
- ○ No, not at this time.

* What is your overall satsfaction with this learning activity?

○ 5 ○ 4 ○ 3 ○ 2 ○ 1

* Navigating the ATrain Education website was:

- ○ Easy.
- ○ Somewhat easy.
- ○ Not at all easy.

* How long did it take you to complete this course, posttest, and course evaluation?

- ○ 60 minutes (or more) per contact hour
- ○ 50-59 minutes per contact hour
- ○ 40-49 minutes per contact hour
- ○ 30-39 minutes per contact hour
- ○ Less than 30 minutes per contact hour

I heard about ATrain Education from:

- ○ Government or Department of Health website.
- ○ State board or professional association.
- ○ Searching the Internet.
- ○ A friend.

- ○ An advertisement.
- ○ I am a returning customer.
- ○ My employer.
- ○ Other
- ○ Social Media (FB, Twitter, LinkedIn, etc)

Please let us know your age group to help us meet your professional needs.

- ○ 18 to 30
- ○ 31 to 45
- ○ 46+

I completed this course on:

- ○ My own or a friend's computer.
- ○ A computer at work.
- ○ A library computer.
- ○ A tablet.
- ○ A cellphone.
- ○ A paper copy of the course.

Please enter your comments or suggestions here: _____

_____

_____

_____

Registration Form

Please print and answer all of the following questions (* required).

* Name: _____

* Email: _____

* Address: _____

* City: _____ * State: _____ * Zip: _____

* Country: _____

* Phone: _____

* Professional Credentials/Designations:

_____

Your name and credentials/designations will appear on your certificate.

* License Number and State: _____

* Please email my certificate:

○ Yes ○ No

(If you request an email certificate we will not send a copy of the certificate by US Mail.)

Payment Options

You may pay by credit card or by check.
Fill out this section only if you are **paying by credit card.**
3 contact hours: $24

Credit card information

* Name: _____

Address (if different from above): _____

* City: _____ * State: _____ * Zip: _____

* Card type:

○ Visa ○ Master Card ○ American Express ○ Discover

* Card number: _____

* CVS#: _____

* Expiration date: _____