

Washington: HIV/AIDS, 7 Units

7 contact hours: \$35.00

Authors: Susan Walters Schmid, PhD
JoAnn O'Toole, RN, BSN
Lauren Robertson, BA, MPT

Course Summary: Addresses the requirement for the 7-unit course on HIV/AIDS for healthcare workers in Washington State. Covers six subject areas: HIV etiology and epidemiology, transmission precautions and infection control, testing and counseling, clinical manifestations and treatment, legal and ethical issues, and psychosocial issues.

COI/Commercial Support: The planners and authors of this course have declared no conflict of interest and all information is provided fairly and without bias. We received no commercial support for this activity and do not approve or endorse any commercial products displayed.

Off-Label Use: No off-label uses were discussed or recommended in this course.

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

This course will be reviewed and updated or discontinued on Oct 1, 2012.

Accreditation Information

Nursing

ATrain Education, Inc. is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

Physical Therapy

ATrain Education, Inc. is an approved reviewer and provider by the Physical Therapy Board of California and an approved provider by the New York State Board for Physical Therapy.

Occupational Therapy

ATrain Education, Inc. is an approved provider by the American Occupational Therapy Association. The following course information applies to occupational therapy professionals:

Target Audience: Occupational Therapists, OTAs

Instructional Level: Introductory

Content Focus:

- Category 1 - Domain of OT, Areas of OT, Context and Environmental Issues
- Category 2 - Occupational Therapy Process, Outcomes

Other Professions and Accreditations

See the ATrainCEU Accreditation page at <http://www.ATrainCeu.com/accreditation.php>.

Instructions

1. Read the course material and then complete the following forms:
 - A. Answer Sheet
 - B. Evaluation Learning Activity
 - C. Registration Form
2. If you are not paying by credit card, prepare a check for the amount of the course made out to: *ATrain Education, Inc.*
3. Mail the completed forms and your payment to:
ATrain Education, Inc
5171 Ridgewood Rd
Willits, CA 95490

When we receive your forms and payment, we will mail (or email, at your request) your completion certificate. If you have any questions, please call or email Info@ATrainCEU.com.

Course Objectives

When you finish this course, you will be able to:

- Discuss the etiology and epidemiology of HIV in Washington State and the United States.
- Describe transmission and infection control precautions for prevention of HIV transmission.
- Outline the common testing and counseling requirements for HIV-infected individuals.
- Characterize the main clinical manifestations and treatment options of HIV/AIDS.
- Identify the legal and ethical issues associated with HIV in Washington State.
- Discuss the main psychosocial issues facing HIV-infected persons and their caregivers.

Part I: Etiology and Epidemiology of HIV/AIDS

The human immunodeficiency virus (HIV) has infected tens of millions of people around the globe in the past three decades, with devastating results. In its advanced stage—acquired immunodeficiency syndrome (AIDS)—the infected individual has no protection from diseases that may not even threaten people who have healthy immune systems. While medical treatment can delay the onset of AIDS, no cure is available.

Definition of HIV and AIDS

The human immunodeficiency virus (HIV) 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.

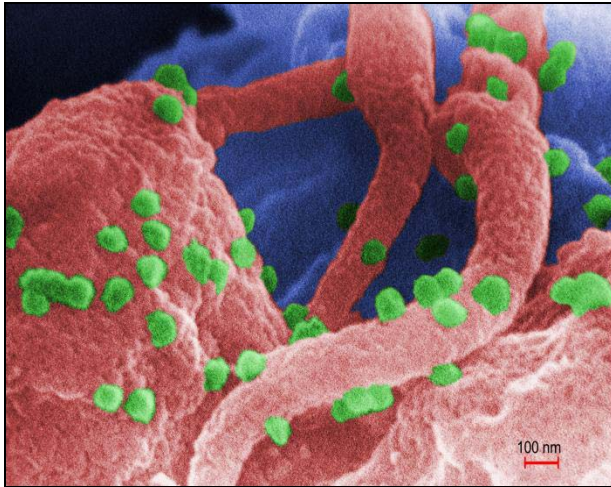
The term **AIDS** stands for “acquired immunodeficiency syndrome,” and it refers to the most advanced stage of HIV infection. Medical treatment can delay the onset of AIDS, but HIV infection eventually results in a **syndrome** (combination) of symptoms, diseases, and infections. The diagnosis of AIDS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

All people diagnosed with AIDS have HIV, but an individual may be infected with HIV and not yet have AIDS.

HIV-Infection in the Body

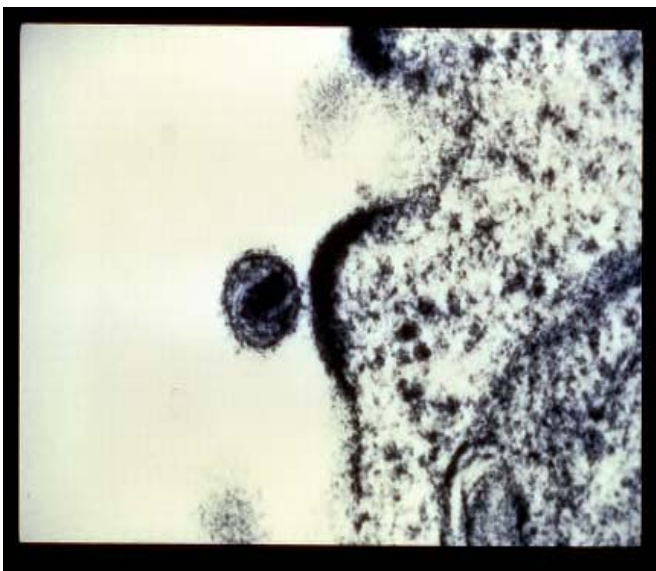
HIV enters the bloodstream and seeks out **T-helper lymphocytes**, white blood cells essential to the functioning of the immune system. One of the functions of these cells is to regulate the immune response in the event of attack from disease-causing organisms such as bacteria or viruses. When the virus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

Human Lymphocyte Showing HIV Infection



A scanning electron micrograph showing HIV-1 virions (in green) on the surface of a human lymphocyte. HIV was identified in 1983 as the pathogen responsible for AIDS. In the infected individual, the virus causes a depletion of T-cells, which leaves these patients susceptible to opportunistic infections and to certain malignancies. Source: Public Health Image Library, image #11279, CDC, 1989. From: CDC/ C. Goldsmith, P. Feorino, E. L. Palmer, W. R. McManus [PHIL Image ID#11279]

HIV “Budding” Out of a T-Cell



Source: NIAID, courtesy of Dr. Tom Folks.

Antibodies (proteins made by the immune system in response to infection) are produced by the immune system to help get rid of specific foreign invaders that can cause disease. Producing antibodies is an essential function of our immune systems. The body makes a specific antibody for each disease. For example, if we are exposed to the measles virus, the immune system will develop antibodies specifically designed to attack that virus. Polio antibodies fight the polio virus.

When our immune system is working correctly, it protects against these foreign invaders. HIV infects and destroys the T-helper lymphocytes and damages their ability to signal for antibody production. This results in the eventual decline of the immune system.

Primary HIV Infection

Primary HIV infection (acute HIV infection) is the first stage of HIV disease. It begins with initial infection and typically lasts only a week or two. During this time the virus is establishing itself in the body but **the body has not yet begun to produce antibodies**. Because of this, the infection cannot be discovered by any HIV tests.

This period of acute infection is characterized by a **high viral load** (large numbers of the virus) and a decline in CD4 cells. Perhaps half of infected patients experience mononucleosis-like symptoms (fever, swollen glands) during primary infection, but the symptoms are not life-threatening and may be misinterpreted as a minor illness.

During primary infection, newly infected people can infect partners because they do not yet know they have HIV. The primary infection period ends when the body begins to produce HIV-specific antibodies. The number of antibodies is still insufficient to be detectable by HIV testing.

The Window Period

The **window period** is the period of time between initial infection with HIV and when the body produces **detectable** antibodies, which can vary from 2 to 12 weeks. During the window period a person is infectious, with a high viral load and a negative HIV antibody test. This means the infected person might get a negative result while actually having HIV.

The point when the HIV antibody test becomes positive is called the point of **seroconversion**.

Asymptomatic Stage

After the acute stage of HIV infection, people infected with HIV continue to look and feel completely well for long periods, sometimes for many years. During this time, the virus is replicating and slowly destroying the immune system. This asymptomatic stage is sometimes referred to as clinical latency.

This means that, although a person looks and feels healthy, they can infect other people through unprotected anal, vaginal, or oral sex or through needle sharing—especially if they have not been tested and do not know that they are infected. The virus can also be passed from an infected woman to her baby during pregnancy, birth, or breastfeeding. Without antiretroviral therapy, it takes an average of 10 years between the time a person is infected with HIV and the onset of AIDS.

The Origin of HIV

Since HIV was discovered in 1983, researchers have worked to pinpoint the origin of the virus. In 1999 an international team of researchers reported that they discovered the origins of HIV-1, the predominant strain of HIV in the developed world. A subspecies of chimpanzees native to west equatorial Africa was identified as the original source of the virus.

The researchers believe that HIV-1 was introduced into the human population when hunters became exposed to infected blood. The transmission of HIV is driven by changes in migration, housing, travel, sexual practices, drug use, war, and economics that affect both Africa and the entire world.

HIV Strains and Subtypes

HIV has divided into two primary strains: **HIV-1** and **HIV-2**. Worldwide, the predominant virus is HIV-1, and generally when people refer to HIV without specifying the type of virus they are referring to HIV-1. The relatively uncommon HIV-2 type is concentrated in West Africa and is rarely found elsewhere.

HIV is a highly variable virus that mutates very readily. This means there are many different strains of HIV, even within the body of a single infected person. Based on genetic similarities, the numerous viral strains may be classified into types, groups, and subtypes.

Both HIV-1 and HIV-2 have several subtypes. It is virtually certain that more undiscovered subtypes are in existence now. It is also probable that more HIV subtypes will evolve in the future. As of 2001, blood testing in the United States can detect both strains and all known subtypes of HIV.

Epidemiology of HIV and AIDS

Epidemiology is “the study of how disease is distributed in populations and of the factors that influence or determine this distribution.” Epidemiologists try to discover why a disease develops in some people and not in others. AIDS was first recognized in the United States in 1981. In Washington State, the first reported case of AIDS was in 1982. Since then, the number of AIDS cases has continued to increase both in the United States and other countries. In 1983 HIV was discovered to be the cause of AIDS.

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 U.S. Centers for Disease Control and Prevention (CDC) estimates that in 2006, 21% 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 (CDC, 2010).

It is important to note that **the great majority of persons 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 (CDC, 2010).

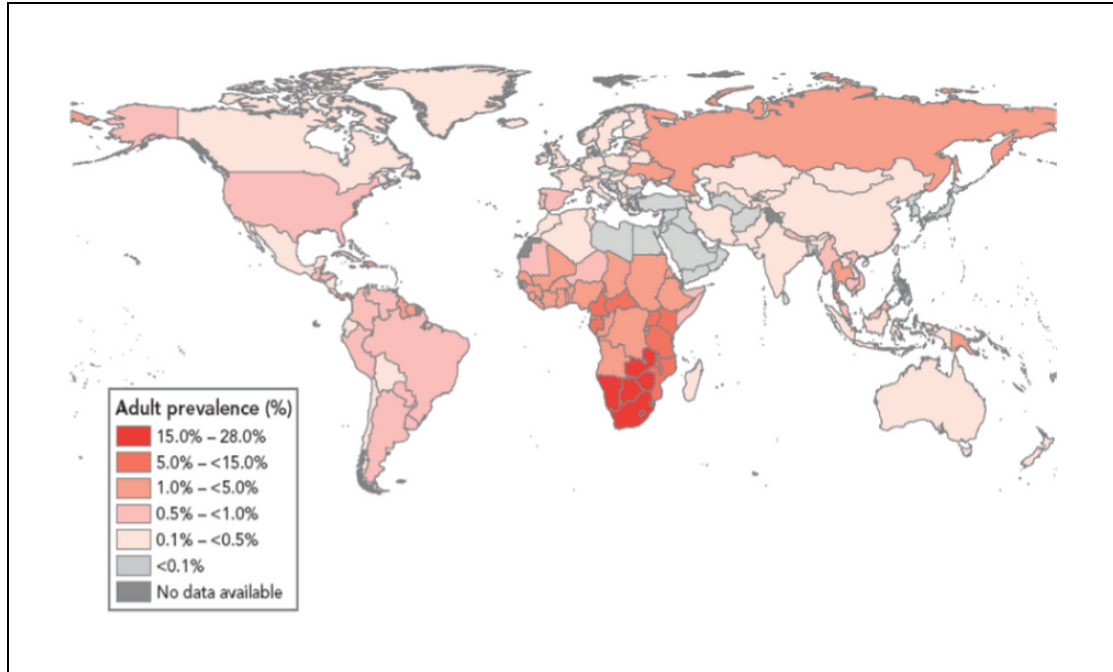
The CDC estimates that more than 1 million (1,106,400) adults and adolescents were living with HIV infection in the United States at the end of 2006. This is an 11% increase over the previous estimate in 2003. The increase may be due to a higher number of people with HIV knowing their status and seeking care and/or a higher number becoming infected with HIV than the number with HIV or AIDS who die each year. Despite this increase, the number of new infections has remained stable at about 56,000/year since the late 1990s (CDC, 2010).

Overall, more than 576,000 persons with an AIDS diagnosis in the United States have died from the beginning of the epidemic through 2007. From 2005 through 2007, deaths of persons with a diagnosis of HIV infection increased 17% and the estimated rate of deaths increased 14%. However, interpreting the data regarding deaths of persons with a diagnosis of HIV can be difficult because many factors can affect the data (CDC, 2010).

Worldwide, the number of HIV-infected people has stabilized but at what the Joint United Nations Programme on HIV/AIDS (UNAIDS) calls “an unacceptably high level.” UNAIDS estimates there were 33 million people in the world living with HIV or AIDS in 2007. Worldwide the annual number of new HIV infections declined from 3.0 million in 2001 to 2.7 million in 2007 (UNAIDS, 2008).

Young people between the ages of 15 and 24 account for 45% of new infections, and globally the percentage of women among those living with HIV/AIDS has remained constant at 50% for several years. After decades of increasing mortality, the annual number of AIDS deaths globally finally saw a two-year decline to just over 2 million people in 2007 (UNAIDS, 2008).

A Global View of HIV Infection, 2007



Thirty-three million people were living with HIV in 2007. Source: "A Global View of HIV Infection," UNAIDS, 2008. Reprinted with permission.

The discovery of combination antiviral drug therapies in 1996 resulted in a dramatic decrease in the number of deaths due to AIDS among people given the drug therapies. Many people who have access to the therapies may not benefit from them, or may not be able to tolerate the side effects. The medications are expensive and require strict dosing schedules. In developing countries, many people with HIV have no access to the newer drug therapies.

HIV and AIDS Cases Are Reportable

AIDS cases have been **reportable** (physicians must confidentially report any cases among their patients) to the CDC since 1984. AIDS and symptomatic HIV infections have been reportable to the Washington State Department of Health (DOH) since 1984 and 1993, respectively. HIV cases became reportable to the Washington State Department of Health in fall 1999.

Part II: Transmission and Infection Control

Necessary Conditions for HIV-Infection

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, three conditions must occur:

- There must be an **HIV source**.
- There must be a sufficient dose of virus.
- There must be access to the bloodstream of another person.

Body Fluids That Can Transmit HIV

Anyone infected with the virus is potentially a source of HIV infection. Transmission occurs primarily through infected blood, semen, vaginal secretions, or breast milk. Sweat, tears, saliva, urine, and feces are not capable of transmitting HIV unless visibly contaminated with blood.

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.**

Sufficient Dose

The concentration and amount of HIV necessary for infection to occur is called a **sufficient dose**.

Blood

Access to another person's bloodstream involves behaviors or circumstances that place someone at risk for infectious fluid entering their bloodstream. The most common of the risk behaviors are **unprotected sexual intercourse (anal, vaginal, oral) with an infected person** and **use of contaminated injection equipment for use in injecting drugs**.

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, which will be discussed in more detail later in this section.

HIV Transmission

People may become infected with HIV if they engage in specific risk behaviors or if they are exposed through needlestick injuries (usually in a healthcare setting). Other blood contact with mucous membranes or non-intact skin provides a possible, but not probable, chance of transmission.

Means and Requirements for Transmission

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.

The transmission of HIV depends upon:

- The **availability** of the infectious agent (HIV) in sufficient quantity
- The **viability** of the infectious agent (how strong it is)
- The **virulence** of the infectious agent (how infectious it is)
- The **ability** of the infectious agent to reach the bloodstream, mucous membranes, or broken skin of a potential host (ie, getting into another person's body)

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.

Blood Transfusions

Transmission by contaminated blood or blood products occurred in the United States before March 1985. Testing for HIV at blood banks and organ transplant centers began in 1985 and has almost completely eliminated the risks for transmission in developed countries. In 1999 about 1% of national AIDS cases were caused by transfusions or use of contaminated blood products. The majority of those cases were in people who received blood or blood products before 1985.

Sexual Intercourse

HIV can enter the bloodstream through mucous membranes—breaks, sores, and cuts in the mouth, anus, vagina, or penis. Anal, vaginal, and oral intercourse (both receptive and penetrative) can transmit HIV from person to person.

Anal Intercourse

Unprotected anal intercourse is considered to be the greatest sexual risk for transmitting HIV. Anal intercourse frequently results in tears of mucous membranes, which makes it very easy for the virus to enter the bloodstream. The receptive (bottom) partner is considered to be at more risk of getting HIV if the virus is present. Risks vary for the insertive (top) partner.

Vaginal Intercourse

Unprotected vaginal intercourse with the exchange of semen, pre-ejaculate fluid (pre-cum), menstrual blood or vaginal fluids is also a risk for HIV transmission. Studies have shown that women are more likely to become infected with HIV through vaginal sex than men. The larger amount of mucous membrane surface area of the vagina is a probable reason for women's greater rate of HIV infection from their male partners.

Sharing Needles and Drug Injection Equipment

Sharing injection needles, syringes, and other drug paraphernalia with an HIV-infected person can put HIV directly into the user's bloodstream and is the behavior that most efficiently transmits HIV, hepatitis B (HBV), and hepatitis C (HCV).

Indirect sharing occurs when drug injectors share injection paraphernalia or divide a shared or jointly purchased drug while preparing and injecting it. The paraphernalia that carry the potential for transmission are the syringe, needle, "cooker," cotton, and rinse water. Sharing these items (sometimes called "the works") may transmit HIV—or other bacteria and viruses. Examples of indirect sharing are when a user squirts the drug back (from a dirty syringe) into the drug cooker or someone else's syringe or shares a common filter or rinse water.

Probability of HIV Transmission from One HIV Exposure

Donor screening, blood testing, and other processing measures have reduced the risk of transfusion-caused HIV transmission in the United States to between 1 in 450,000 and 1 in 600,000 transfusions. Donating blood is always safe in the United States, because sterile needles and equipment are used. All used syringes, needles, and blood or body fluid spills should be considered potentially infectious, and should be treated using Standard Precautions (formerly known as Universal Precautions).

Probability of Infection Following One Exposure to HIV*

Source of infection	HIV infection rate
Contaminated blood transfusion (prior to 1986)	95.0%
One intravenous syringe or needle exposure	0.67%
One percutaneous exposure (e.g. a needlestick)	0.4%
One episode of receptive anal sexual intercourse	0.1%–3%
One episode of receptive vaginal intercourse	0.1%–0.2%
One episode of insertive vaginal intercourse	0.03–0.09%

* A 1% risk means 1 chance in 100 for infection to occur. An 0.10% risk means 1 chance in 1,000. Source: CDC.

HIV and Pregnancy

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.

In 1994 researchers discovered that a course of the antiretroviral drug AZT (zidovudine) significantly reduced the transmission of HIV from woman to baby. In 2002 medications such as AZT and others were introduced during pregnancy and delivery to prevent transmission of HIV.

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. Washington State law requires pregnant women to be counseled regarding risks of HIV and offered voluntary HIV testing.

Lifelong Infection

HIV infection is lifelong—once people become infected with HIV, their blood, semen, vaginal secretions, and breast milk will always be potentially infectious.

Transmission of Multidrug-Resistant Forms of HIV

There is evidence of transmission of multidrug-resistant forms of HIV. People who have been infected with HIV and have used a number of the available antiretroviral medicines may transmit forms of HIV that are resistant to some of these available drug therapies. This reduces the treatments available for the newly HIV-infected person.

Factors Affecting HIV Transmission

The Presence of Other STDs

The presence of other **sexually transmitted diseases (STDs)** increases the risk for HIV transmission, because the infected person may have a much larger number of HIV-infected white blood cells present at the site of infection. The infected person's immune system may be less able to suppress or combat HIV infection. Lesions from STDs break down the protective surface of the skin or mucous membrane, which makes the infected person more vulnerable to other infections.

The presence of co-infection with other STDs increases the risk of HIV transmission because:

- STDs like syphilis and symptomatic herpes can cause breaks in the skin, which provide direct entry for HIV.
- Inflammation from STDs, such as chlamydia, makes it easier for HIV to enter and infect the body.
- HIV is often detected in the pus or other discharge from genital ulcers of HIV-infected men and women.
- Sores can bleed easily and come into contact with vaginal, cervical, oral, urethral, and rectal tissues during sex.
- Inflammation appears to increase HIV viral shedding and the viral load in genital secretions.

Multiple Partners

Having multiple partners for drug injection or sexual intercourse increases the chances of being exposed to a person infected with HIV. Persons who have unprotected sex with multiple partners are considered to be at high risk for HIV infection. In some studies, the CDC defines **multiple partners** as six or more partners in a year. However, someone who has only one partner is still at risk if the person is HIV-positive and they have unprotected sex and/or share needles.

Use of Non-Injecting Drugs

Use of other substances, including alcohol and non-injecting street drugs, can also put a person at risk for getting HIV. These substances impair judgment, increasing the likelihood that a person will take risks (have unprotected sex, share needles), or may place the person in unsafe situations. Additionally, some substances have physiologic and biologic effects on the body, including masking pain and producing sores on the mouth and genitals, which can create additional "openings" for HIV and other sexually transmitted diseases.

Gender and Equality Issues

Lack of power (being subservient) in a relationship can affect a person's ability to insist on sexual protection, such as the use of condoms. Women are socially and economically dependent upon men in many societies. This sometimes results in their being unable to ask their partner to use condoms or to leave a relationship that puts them at risk.

In some cultures, females are not encouraged to learn about their bodies, sex, birth control, or other sexuality topics. Other cultures promote the value of the male having multiple sexual partners, while discouraging the same behavior in females.

Casual Contact

HIV is not transmitted through the air or by sneezing, breathing, or coughing. Touching, hugging, and shaking hands do not transmit HIV. HIV transmission is not possible through restaurant food prepared or served by an HIV-infected employee.

HIV is not transmitted through casual contact in the workplace. No cases of HIV transmission have been linked to sharing computers, food, telephones, paper, water fountains, swimming pools, bathrooms, desks, office furniture, toilet seats, showers, tools, equipment, coffee pots, or eating facilities. However, personal items that may be contaminated with blood, including but not limited to razors, toothbrushes, and sex toys, should not be shared. There have been no cases of HIV transmission by children playing, eating, sleeping, kissing, and hugging.

Unusual Cases of HIV Transmission

To date, less than a dozen known cases of HIV transmission have occurred in household settings in the United States and elsewhere. Reports of these cases have been thoroughly investigated by the CDC. The researchers determined that the transmissions were caused by sharing a razor contaminated with infected blood, exposure of infected blood to cuts and broken skin, and (possibly) deep kissing involving a couple who both had bleeding gums and poor dental hygiene. It is important to remember that these cases were extremely unusual. Sensible precautions with bleeding cuts and not sharing personal hygiene items would have prevented these cases of infection.

There are also isolated cases of transmission from healthcare workers to patients. To date, there were three instances where transmission of HIV could only be tracked to the HIV-infected clinician treating the patient. At least one of these cases occurred prior to the implementation of strict equipment disinfection.

Biting

Biting poses very little risk of HIV transmission. The possibility only exists if the person who is biting and the person who is bitten have an exchange of blood (such as through bleeding gums or open sores in the mouth). Bites may transmit other infections, and should be treated immediately by thoroughly washing the bitten skin with soap and warm water and then disinfecting with antibiotic skin ointment.

Workplace Situations

Workplace exposures generally occur through a needlestick injury but can occur through a splash of infectious blood or exposure to blood-contaminated material. (Occupational exposure is discussed later in the course.)

Risk Reduction Methods

There are many effective methods for reducing the risk of sexual and drug-related transmission of HIV.

Sexual Abstinence

Sexual abstinence (not engaging in anal, vaginal, or oral intercourse or other sexual activities where blood, semen, or vaginal fluid can enter the body) is a completely safe and 100% effective method for preventing the sexual transmission of HIV.

Non-Penetrative Sex

Non-penetrative sex, where the penis does not enter the vagina or anus, and penetrative sex toys are not shared, is a safer sex method that greatly decreases your risk of getting infected with HIV. This practice will not transmit HIV, provided that there is no exchange of blood, semen, vaginal fluids, or breast milk in the sexual contact. Non-penetrative sexual intercourse, however, may still be a risk factor for the transmission of other sexually transmitted diseases.

Monogamous Long-Term Relationships

Monogamy—having sex with only one person who only has sex with you—is another choice to prevent/reduce the risk of HIV infection. If neither partner is infected with HIV or other STDs, and neither has other sexual or injection equipment—sharing contacts, then neither partner is at risk of exposure to HIV or other STDs. In order for monogamy to protect against HIV and STDs, both partners must be free of disease and both partners must remain monogamous.

Limiting Partners

The decision to limit the number of sexual or drug-injecting partners may reduce the risk of HIV transmission, but is not a guarantee of safety. The fewer the partners the greater the reduction of risk.

Safer Sexual Practices

Did you know. . .

Not all condoms and lubricants provide effective protection against the transmission of HIV and other STDs.

Latex condoms

When used correctly and consistently during sexual intercourse, (anal, vaginal, and oral) latex condoms are highly effective in preventing the transmission of HIV. To prevent tearing of latex condoms, only water-based lubricants should be used. Oil-based lubricants like petroleum jelly or cooking oils should not be used because the oil in these products breaks down the latex condom.

Polyurethane Condoms

For the male, polyurethane condoms are made of a soft plastic. They look like latex condoms but are thinner. Lab tests show that sperm and viruses (like HIV) cannot pass through polyurethane.

Female condoms are insertive (fit inside the vagina or anus). They are made of polyurethane, which blocks sperm and viruses (like HIV). These condoms may be inserted several hours before intercourse.

Dental Dams

Dental dams, large pieces of new, unused, clear, non-microwaveable plastic wrap, and latex condoms may be used to provide a barrier to reduce the risk of HIV transmission during oral intercourse on a female. The latex condom can be cut into a square for use as a dental dam. Simply cut off the tip and then down one side, and open it into a square. Water-based lubricant may be used with the dental dams, plastic wrap, or cut-open condoms to enhance sensitivity and reduce friction.

Natural Membrane Condoms

Natural membrane condoms (“skins”) **do not provide protection from HIV, HBV, and some other STDs.** (They can help prevent pregnancies and some STDs, such as syphilis.)

When Both Partners are HIV-Positive

If two people are infected with HIV, do they still need to have protected sex? Some people think it is safe for HIV-infected people to have unprotected sex with each other, but latex condoms are advised when both partners are HIV-positive. Each additional exposure to the virus may further weaken an immune system already damaged by HIV. Other STDs are transmitted through unprotected sex. Any additional viral or bacterial infection stresses the immune system and should be avoided.

Avoidance of Injection Drug Use

Not injecting drugs is another way to avoid transmission of HIV. If abstaining from using injecting drugs is not possible, then use a clean needle each time and do not share injection equipment. This includes people who use needles to inject insulin, vitamins, steroids, or prescription or non-prescription drugs.

Syringe Exchange

Syringe exchange, or needle exchange, is a disease prevention program for people who use illegal drugs. It provides new sterile syringes in exchange for used ones. People who trade in their used syringes/needles for clean ones at needle exchanges significantly reduce their risk for becoming infected with HIV or hepatitis through sharing needles.

Syringe exchanges are also referral sources for drug treatment. Participants may be able to secure drug treatment through the intervention of the syringe exchange staff. Public support for syringe exchange has grown in recent years. Many local health departments in Washington State, some in conjunction with other organizations, operate syringe exchanges in their communities. For more information, contact your local/district HIV/AIDS program.

It is safest always to use new, sterile needles and syringes, as well as other "works" (which can all become contaminated with blood). If someone cannot avoid sharing syringes, rinsing out the syringe/needle with full-strength bleach and clean water helps clean the syringe/needle and kill any HIV inside it.

There is high prevalence of HBV and HCV infection among injecting drug users; these viruses are stronger than HIV and are not likely to be killed by short contact with bleach. Cleaning the syringe with bleach and water is not likely to prevent transmission of HBV or HCV. There is no substitute for a new syringe. If there is no possible way to obtain new needles, the directions for using bleach to clean syringes/needles are:

1. Fill the syringe completely with water.
2. Tap it with your finger to loosen any traces of blood.
3. Shake the syringe and shoot out the bloody water.
4. Repeat these steps until you can't see any blood. Then:
5. Fill the syringe completely with fresh bleach.
6. Keep the bleach inside the syringe for at least 30 seconds.
7. Shoot out the used bleach.
8. Rinse out the syringe with **new, clean** water.
9. Shake the syringe and squirt out the water.

It is important to follow these steps exactly, because inadequate cleaning can result in the possibility of HIV infection. Always do the final rinse with water!

HIV Prevention Through Behavioral Change

[The material is taken with permission from a report by the Global HIV Prevention Working Group. The goal of the Working Group is to inform global policymaking, program planning, and donor decisions on HIV prevention, and to advocate for a comprehensive response to HIV/AIDS that integrates prevention, treatment, and care. Working Group publications are available at www.GlobalHIVPrevention.org.]

Behavioral HIV prevention programs that target individuals, families, communities, entire societies, or a combination of all these have been shown to significantly reduce the rate of new HIV infections. Prevention programs build skills needed to use prevention tools properly and, to the extent feasible, help those at risk to avoid or effectively negotiate risky situations. Countries in diverse regions and of different income levels have significantly lowered the rate of new HIV infections because of major shifts in human behavior (Global HIV Prevention Working Group, 2008).

Behavioral HIV prevention programs emphasize direct and indirect interventions. **Direct** interventions introduce prevention tools into a particular environment. For example:

- Mandating condom use in brothels
- Influencing the physical environment (improving street lighting to reduce the likelihood of rape)
- Expanding clinical services (ensuring access to drug substitution therapy for chemical dependence)
- Creating more supportive legal and policy norms (legalizing same-sex relations) (PWG, 2008).

Indirect social or structural interventions can improve overall protection by promoting human rights, reducing income inequality, and addressing gender inequities.

HIV prevention is one of the world's most important priorities and behavior change remains the driving force for national success against HIV. As the HIV epidemic continues to expand, treatment alone will not reverse the incidence of new infections. In most countries prevention efforts should focus on populations at highest risk of infection (men who have sex with men, sex workers, injection drug users, prisoners, mobile populations, and other vulnerable groups.) (PWG, 2008).

Globally Successful Behavioral Programs

[These examples are from PWG, 2008.]

Australia

In the early 1980s Australia mounted a national AIDS response that included broad public-awareness campaigns, specific behavioral interventions for gay men, public-sector support for needle and syringe exchange, and voluntary HIV counseling and testing. Dramatic declines were recorded in unprotected anal intercourse and the sharing of needles for drug use.

Because 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.

Brazil

Brazil has encouraged open discussion of HIV, supporting 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. Especially noteworthy is Brazil's success in reversing a serious epidemic among injection drug users. Condom use increased by almost 50 percent among sexually active adults between 1998 and 2005, and focused behavior change prevention programs also maintained 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.

Thailand

In response to an increase in infections in the late 1980s, Thailand initiated an innovative national program that has served as a model for other countries. The country's 100 percent condom-usage program promoted condom use in brothels and national leaders encouraged discussion of the HIV threat and the fair treatment of those who were infected.

Annual HIV incidence declined from 143,000 in 1991 to 19,000 in 2003, helping reverse what was once one of the world's fastest-growing epidemics. 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.

Uganda

Uganda moved in the mid-1980s to address the rapid spread of HIV, implementing 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 programs for voluntary counseling and testing.

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.

In 2010 the Global HIV Prevention Working Group issued a report that indicated that although great strides have been made with antiretroviral treatment, the world is currently doing a poor job of implementing sound, evidence-based, well-planned HIV prevention programs (PWG, 2010). Overall findings indicate:

- Prevention efforts remain inadequate in light of the continuing challenges posed by the epidemic.
- The rate of new HIV infections is substantially outpacing the scale-up of HIV treatment programs.
- Spending on HIV prevention is grossly inadequate.
- Inadequate political commitment has focused on the urgent necessity of slowing the rate of new HIV infections.
- Too few people at risk of HIV infection receive the prevention services they need.
- The populations most at risk of HIV infection are especially neglected in HIV prevention efforts.
- In planning HIV prevention strategies, many countries are aiming in the dark, lacking basic information about the dynamics of their national epidemics.
- Prevention efforts appear poorly matched with documented needs.
- Current prevention efforts exhibit severe gaps, with key strategies often receiving little, if any, support.
- Laws and policies often impede effective HIV prevention by exacerbating stigma, increasing social marginalization, and deterring individuals from seeking prevention services.
- Stakeholders of all kinds lack basic information.
- Robust support for HIV prevention research remains critical to strengthen long-term prospects for slowing the rate of new HIV infections (PWG, 2010).

Occupational Exposure to Bloodborne Pathogens

The following requirements are mandated by Washington Administrative Code (WAC) 296-823, Occupational Exposure to Bloodborne Pathogens. They are enforced by the Department of Labor and Industries Division of Occupational Safety and Health (DOSH).

Please check with your agencies to make sure you are in compliance with the requirements of this rule. Failure to comply may result in citations or penalties.

This is a brief summary, and is not meant to provide direction on compliance with WAC 296-823. The compliance directive of the federal Occupational Safety and Health Administration (OSHA) on occupational exposure to bloodborne pathogens, CPL 2-2.69, may be consulted for additional direction. For more information or assistance, contact a Department of Labor and Industries (L&I) consultant in your area. Check the blue government section of the phone book for the office nearest you, or call L&I's 24-hour toll-free line at 1-800-4-BE-SAFE, or visit the L&I website at: <http://www.lni.wa.gov>.

Rule Scope

WAC 296-823, Occupational Exposure to Bloodborne Pathogens, provides requirements to protect employees from exposure to blood or **other potentially infectious materials (OPIM)** that may contain bloodborne pathogens. This section applies to employers who have employees with occupational exposure to blood or OPIM, even if no actual exposure incidents have occurred.

Protection by employers of occupational exposure to bloodborne pathogens refers to *reasonably anticipated* skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of an employee's duties.

Exposure incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or OPIM that results from the performance of an employee's duties. Examples of non-intact skin include skin with dermatitis, hangnails, cuts, abrasions, chafing, or acne.

Occupational groups that have been widely recognized as having potential exposure to HBV/HCV/HIV include, but are not limited to, healthcare employees, law enforcement, fire, ambulance, and other emergency response and public service employees.

Bloodborne Pathogens

While HBV and HIV are specifically identified in the standard, **bloodborne pathogens** include **any human pathogen present in human blood or OPIM**. Bloodborne pathogens may also include HCV, hepatitis D, malaria, syphilis, babesiosis, brucellosis, leptospirosis, arboviral infections, relapsing fever, Creutzfeldt-Jakob disease, adult T-cell leukemia/lymphoma (caused by HTLV-I), HTLV-I-associated myelopathy, diseases associated with HTLV-II, and viral hemorrhagic fever. According to the CDC, hepatitis C (HCV) infection is the most common chronic bloodborne infection in the United States. Hepatitis C is a viral infection of the liver transmitted primarily by exposure to blood.

Blood and Other Potentially Infectious Materials (OPIM)

Bodily fluids that have been recognized as linked to the transmission of HIV, HBV, and HCV, and to which Standard Precautions apply, are:

- Blood
- Blood products
- Semen
- Vaginal secretions
- Cerebrospinal fluid
- Synovial (joint) fluid
- Pleural (lung) fluid
- Peritoneal (gut) fluid
- Pericardial (heart) fluid
- Amniotic (fluid surrounding the fetus) fluid
- Saliva in dental procedures
- Specimens with concentrated HIV, HBV and HCV viruses

Body fluids such as urine, feces, and vomitus are not considered OPIM unless visibly contaminated by blood.

Wastewater (sewage) has **not** been implicated in the transmission of HIV, HBV, and HCV and is not considered to be either OPIM or regulated waste. However, plumbers working in healthcare facilities or who are exposed to sewage originating directly from healthcare facilities carry a theoretical risk of occupational exposure to bloodborne pathogens.

Employers should consider this risk when preparing their written “exposure determination.” Plumbers or wastewater workers working elsewhere are probably not at risk for exposure to bloodborne pathogens. Wastewater contains many other health hazards and workers should use appropriate personal protective equipment (PPE) and maintain personal hygiene standards when working.

Exposure Control Plan (ECP)

Each employer covered under WAC 296-823 must develop an Exposure Control Plan (ECP). The ECP shall contain at least the following elements:

- A written “exposure determination” that includes those job classifications and positions in which employees have the potential for occupational exposures. The exposure determination shall have been made without taking into consideration the use of personal protective clothing or equipment. It is important to include those employees who are required or expected to administer first aid.
- The procedure for evaluating the circumstances surrounding exposure incidents, including maintenance of a “sharps injury log.”
- The infection control system used in your workplace.
- Documentation of consideration and implementation of appropriate, commercially available safer medical devices designed to eliminate or minimize occupational exposure.
- The ECP must be updated at least annually and whenever changes occur that affect occupational exposure.

Bloodborne Pathogens Training

All new employees or employees being transferred into jobs involving tasks or activities with potential exposure to blood/OPIM shall receive training in accordance with WAC 296-823-120 prior to assignment to tasks where occupational exposure may occur.

Training will include information on the hazards associated with blood/OPIM, the protective measures to be taken to minimize the risk of occupational exposure, and information on the appropriate actions to take if an exposure occurs.

Retraining is required annually, or when changes in procedures or tasks affecting occupational exposure occur. Employees must be provided access to a qualified trainer during the training session to ask and have answered questions as questions arise.

Hepatitis B Vaccination

All employees with occupational exposure to blood or OPIM must be offered hepatitis B vaccination after receiving required training and within 10 days of initial assignment. The vaccine must be provided free of charge. Serologic testing after vaccination (to ensure that the shots were effective) is recommended for all persons with ongoing exposure to sharp medical devices. The provision of employer-supplied hepatitis B vaccination may be delayed until after probable exposure for employees whose sole exposure risk is the provision of first aid (see WAC 296-823-130).

Infection Control Systems

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 should 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 (listed above).

Personal Protective Equipment (PPE)

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 will or may come into contact with blood or OPIM. This includes but is not limited to dentistry, phlebotomy, or processing of any bodily fluid specimen, and 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.

Safer Medical Devices

Safer medical devices and work practices are preferable to personal protective equipment to minimize or eliminate employee exposure. There are now many safer medical devices available.

Employers must include employees in ongoing evaluation of safer medical devices and implement these devices whenever feasible. Evaluation and implementation of these devices must be documented in the ECP. Safer medical device lists can be accessed through websites maintained by the California Division of Occupational Safety and Health SHARP program, the National Association for the Primary Prevention of Sharps Injuries, and the International Health Care Worker Safety Center.

Hand Hygiene

Hand hygiene (soap-and-water washing or use of a waterless alcohol-based hand rub) must be performed:

- After removal of gloves or other protective equipment.
- Immediately after hand contact with blood or other infectious materials.
- Upon leaving the work area.

It is also strongly recommended that hand hygiene be performed before and after patient contact and after using restroom facilities. Soap-and-water hand washing must be performed whenever hands are visibly contaminated or there is a reasonable likelihood of contamination. Proper soap-and-water hand washing technique involves the following:

- Using soap, warm (almost hot) water, and good friction, scrub the top, back, and all sides of the fingers.
- Lather well and rinse for at least 10 seconds. When rinsing, begin at the fingertips, so that the dirty water runs down and off the hands from the wrists. It is preferable to use a pump-type of liquid soap instead of bar hand soap.
- Dry hands on paper towels. Use the dry paper towels to turn off the faucets (don't touch with clean hands).

It is advisable to keep fingernails short, and to wear a minimum of jewelry. Additional information on hand hygiene can be found in the *CDC Guideline for Hand Hygiene in Healthcare Settings, 2002*. If you are working with children to learn and practice good hand hygiene, you may find this short [video](#) prepared by healthcare workers at Seattle Children's helpful. If your workplace is considering a monitoring study, consult The Joint Commission's [guidelines](#).

Did you know. . .

Adherence to hand hygiene has been measured at rates as low as 5% in some healthcare settings. How does your workplace measure up? At your next staff meeting see how many of your coworkers can correctly identify the three steps of hand hygiene listed above.

Housekeeping

The work area is to be maintained in a clean and sanitary condition. The employer is required to determine and implement a written schedule for cleaning and disinfection based on the location within the facility, type of surface to be cleaned, type of soil present and tasks or procedures being performed. All equipment and environmental and working surfaces must be properly cleaned and disinfected after contact with blood or OPIM.

Contaminated broken glassware must be removed using mechanical means, like a brush and dustpan or vacuum cleaner.

Disinfectants

Chemical germicides and disinfectants used at recommended dilutions must be used to decontaminate environmental surfaces. Consult the Environmental Protection Agency (EPA) lists of registered sterilants, tuberculocidal disinfectants, and antimicrobials with HIV/HBV efficacy claims for verification that the disinfectant used is appropriate.

Specimen Handling

Specimens of blood or OPIM must be placed in a closeable, labeled or color-coded, leakproof container prior to being stored or transported.

Laundry

Laundry that is or may be soiled with blood or OPIM, or may contain contaminated sharps, must be treated as though contaminated. Contaminated laundry must be bagged at the location where it was used, and shall not be sorted or rinsed in patient-care areas. It must be placed and transported in bags that are labeled or color-coded (red-bagged).

Laundry workers must wear protective gloves and other appropriate personal protective clothing when handling potentially contaminated laundry. All contaminated laundry must be cleaned or laundered so that any infectious agents are destroyed.

Guidance regarding laundry handling and washing procedures in the health care setting can be found in the *CDC Guidelines for Environmental Infection Control in Health-Care Facilities, 2003*.

Regulated Waste Disposal

All regulated waste must be placed in closeable, leakproof containers or bags that are color-coded (red-bagged) or labeled as required by WAC 296-823-14060 to prevent leakage during handling, storage and transport. Disposal of waste shall be in accordance with federal, state, and local regulations.* WAC 296-823 defines “regulated waste” as any of the following:

- Liquid or semi-liquid blood or other potentially infectious materials (OPIM)
- Contaminated items that would release blood or OPIM in a liquid or semi-liquid state, if compressed
- Items that are caked with dried blood or OPIM and are capable of releasing these materials during handling
- Contaminated sharps
- Pathological and microbiological wastes containing blood or OPIM.

*Note: RCW 70.95K addresses “biomedical waste management.” Individual county or health jurisdiction waste management regulations may need to be consulted.

Sharps Disposal

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.

Sharps Container



Image courtesy of Joe Mabel, photographer via Wikimedia Commons. Published under the terms of GNU Free Documentation License (GFDL). "Copyleft" granted by the photographer.

Tags/Labels

Tags or labels must be used to protect employees from exposure to potentially hazardous biological agents in accordance to the requirements contained in WACs 296-823-14025, 296-823-14050, and 296-800-11045. All required tags must have the following:

- Tags must contain a signal word or symbol and a major message. The signal word shall be BIOHAZARD, or the biological hazard symbol. The major message must indicate the specific hazardous condition or the instruction to be communicated 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.

Biohazard Symbol



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.

Post-Exposure Management

Employers must make a confidential post-exposure medical evaluation available to employees who report an exposure incident. The post-exposure medical evaluation must be:

- Made immediately available
- Kept confidential
- Provided at no cost to the employee
- Provided according to current U.S. Public Health Service recommendations

The employer is also responsible for arranging source individual testing in accordance with WAC 296-823-160. Additional requirements for HIV/HBV research laboratories and production facilities can be found in WAC 296-823-180.

Managing Occupational Exposure to HIV/HBV/HCV and Other Bloodborne Pathogens

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.

The CDC states that 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 membranes (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 through 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 2002, the CDC reports 57 documented cases and 139 possible cases of occupational exposure to HIV since reporting started in 1985.

Risk of Hepatitis B and C Transmission

The risk of getting 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 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, follow-up care, personal prevention measures, 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 health care professional:

- A copy of WAC 296–823–160
- 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** under WAC 246-101.

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 persons 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 1-888-448-4911 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.

In addition, Washington State workers have a right to file a workers' compensation claim for exposure to bloodborne pathogens. Industrial insurance covers the cost of post-exposure prophylaxis and follow-up for the injured worker.

HIV/HBV/HCV Testing Post Exposure

All occupational exposures should be evaluated by a healthcare professional. Evaluation should include follow-up counseling, post-exposure testing, and medical evaluation regardless of whether PEP is indicated. Antibody testing for HIV, HBV, and HCV should be conducted for >6 months after occupational exposure. After baseline testing at the time of exposure, follow-up testing is recommended to be performed at 6 weeks, 12 weeks, and 6 months after exposure. Extended HIV follow-up (eg, for 12 months) is recommended for those who become infected with HCV after exposure to a source co-infected with HIV. Extended follow-up in other circumstances (eg, for those persons with an impaired ability to mount an antibody response to infection) may also be considered.

Source Testing

WAC 296-823-16010 requires the employer to arrange to test the **source individual**—someone whose blood or OPIM an employee was exposed to—for HIV, HBV, and HCV as soon as feasible after getting their consent. If the employer does not get consent the employer must document such and inform the employee.

Mandatory Source Testing

Because of an increased risk for HIV exposure, the Revised Code of Washington 70.24.340 provides for HIV antibody testing of a "source" when a law enforcement officer, firefighter, healthcare provider, or healthcare facility staff, and certain other professions experience an occupational exposure. If you experience an occupational substantial exposure to another person's blood or OPIM, you can request HIV testing of the source individual through your employer or local health officer.

Before health officers issue an order for HIV testing of the source individual, they will first determine whether a substantial exposure occurred and if the exposure occurred on the job. Depending on the type of exposure and risks involved, the health officer may make the determination that source testing is unnecessary.

In the case of occupationally exposed healthcare workers, if the employer is unable to obtain permission of the source individual, the employer may request assistance from the local health officer provided the request is made within 7 days of the occurrence.

Source testing does not eliminate the need for baseline testing of the exposed individual for HIV, HBV, HCV, and liver enzymes. Provision of PEP should also not be contingent upon the results of a source's test. Current wisdom indicates immediate provision of PEP in certain circumstances, with discontinuation of treatment based upon the source's test results.

If your doctor has questions, he or she can call PEPLine, at 1-888-448-4911 (1-888-HIV-4911). This is the National Clinicians' Post-exposure Prophylaxis Hotline, which provides 24-hour advice regarding management of healthcare worker HIV exposure. (This is **not** a hotline for answering basic questions about HIV.)

Non-Occupational Exposure to HIV

Post-exposure prophylaxis for occupational exposure is standard, and its effectiveness has been documented. For sexual exposure (assault or consenting) or for needle-sharing, PEP is not standard medical practice in many communities. Depending on your location in Washington State, providers may not even be familiar with the idea of providing PEP to people who have post-sexual exposure to HIV. The University of California at San Francisco (UCSF) has operated a PEP clinic for non-occupational exposure since 1997 and offers PEP information on their website.

Good places to start PEP include your local emergency room. In Seattle and Western Washington there are clinics that specifically treat HIV-positive people. You can get more information through Public Health Seattle-King County's website. Other areas also offer PEP services and may be a source of useful information, including the San Francisco City Clinic PEP program (415-487-5538 or at their website).

Post-exposure prophylaxis (PEP) should never be used for primary prevention of HIV. Unlike emergency contraception to prevent pregnancy, there are no good studies to show that PEP works for post-sexual exposure. It is a complicated combination of medicines that sometimes have serious side effects.

Procedures for Homes and Home-like Settings

People who live or work in homes and home-like settings should practice good hygiene techniques in preparing food, handling body fluids, and medical equipment. Cuts, accidents, or other circumstances can result in spills of blood/OPIII. These spills may be deposited upon carpeting, vinyl flooring, clothing, a person's skin, or other surfaces. It is important that everyone, even young children, have a basic understanding that they should not put their bare hands in, or on, another person's blood. This section outlines practices for some commonly encountered situations.

Gloves

Gloves are available in latex, nitrile, or vinyl. Some people have allergies to latex.

- Gloves should be worn when caretakers anticipate direct contact with any body substances (blood or OPIII) or non-intact skin.
- When you are through, carefully pull the gloves off, inside-out, one at a time, so that the contaminated surfaces are inside and you avoid contact with any potentially infectious material.
- Gloves should be changed and hands washed as soon as possible between children, patients, and others.
- Never rub the eyes, mouth or face while wearing gloves. Latex gloves should never be washed and reused.

Handwashing Technique

Correct handwashing is extremely important. The steps to follow for good handwashing technique include:

- Use soap, warm (almost hot) water, and good friction, making sure to scrub the top, back, and all sides of the fingers.
- Lather well and rinse for at least 10 seconds. When rinsing, begin at the fingertips, so that the dirty water runs down and off the hands from the wrists. It is preferable to use a pump-type of liquid soap instead of bar hand soap.
- Dry hands on paper towels. Use the dry paper towels to turn off the faucets (don't touch with clean hands).

A waterless handwashing product should be made available for immediate use if a suitable sink is not readily available in the home or work setting. This product does not replace proper handwashing with soap and water. Refer to the manufacturer's directions for use.

People who have been exposed to body fluids should wash their hands **before**, as well as after, using the toilet. The paper towel that was used to dry the hands may also be used to open the bathroom door, if necessary, before disposing of the towel.

Precautions with Personal Hygiene Items

People should not share razors, toothbrushes, personal towels or washcloths, dental hygiene tools, vibrators, enema equipment, or other personal care items.

Cleaning Blood/OPIM

Wear appropriate gloves. Use sterile gauze or other bandages, and follow normal first-aid techniques to stop the bleeding. After applying the bandage, remove the gloves slowly, so that fluid particles do not splatter or become aerosolized. Hands should be washed using good technique as soon as possible.

Cleaning Body Fluid Spills on Vinyl Floors

Any broken glass should be swept up using a broom and dustpan (never bare hands!). Empty the dustpan in a well-marked plastic bag or heavy-duty container. The body fluid spill may be pretreated with full-strength liquid disinfectant or detergent. Next, wipe up the body fluid spill with either a mop and hot soapy water or appropriate gloves and paper towels. Dispose of the paper towels in the plastic bag. Use a good disinfectant (eg, household bleach 5.25% mixed fresh with water 1:10) to disinfect the area that the spill occurred. If a mop was used for the cleaning, soak it in a bucket of hot water and disinfectant for the recommended time. Empty the mop bucket water in the toilet, rather than a sink. Sponges and mops used to clean up body fluid spills should not be rinsed out in the kitchen sink, or in a location where food is prepared.

Cleaning Body Fluid Spills on Carpeting

Pour dry kitty litter or other absorbent material on the spill to absorb the body fluid. Then pour full-strength liquid detergent on the carpet, which helps to disinfect the area. If there are pieces of broken glass present, the broom-and-dustpan method can be used next to sweep up the kitty litter and visible broken glass. Use carpet-safe liquid disinfectant instead of diluted bleach on the carpeting. Pour this carefully on the entire contaminated area; let it remain there for the time recommended by the manufacturer. Follow this by absorbing the spill with paper towels and sturdy rubber gloves. Vacuum normally afterwards.

Any debris, paper towels, or soiled kitty litter should be disposed of in a sealed plastic bag that has been placed inside another plastic garbage bag. Twist and seal the top of the second bag as well.

Cleaning Laundry in Home Settings

Clothes, washable uniforms, towels, or other laundry that have been stained with blood/OPIM should be cleaned and disinfected before further use. If possible, have the person remove the clothing, or use appropriate gloves to assist with removing the clothes. If it is a distance to the washing machine, transport the soiled clothing items in a sturdy plastic bag. Next, place the items in the washing machine, and soak or wash the items in cold, soapy water to remove any blood from the fabric. Hot water permanently sets blood stains. Use hot soapy water for the next washing cycle, and include sufficient detergent, which will act as a disinfectant, in the water. Dry the items using a clothes dryer. Wool clothing or uniforms may be rinsed with cold soapy water and then dry cleaned to remove and disinfect the stain.

Diaper Changes

Care providers should use a new pair of appropriate gloves to change diapers. Gloves should be removed carefully and discarded in the appropriate receptacle. Hands should be washed immediately after changing the diaper. Disinfect the diapering surface afterwards. Cloth diapers should be washed in very hot water with detergent and a cup of bleach, and dried in a hot clothes dryer.

Cleaning Sponges and Mops

Sponges and mops that are used in a kitchen should not be used to clean body fluid spills or bathrooms. All sponges and mops should be disinfected routinely with a fresh bleach solution or another similar disinfectant.

Toilet/Bedpan Safety

It is safe to share toilets/toilet seats without special cleaning, unless the surface becomes contaminated with blood/OPIIM. If this occurs, disinfect the surface by spraying on a solution of 1:10 bleach. Wearing gloves, wipe this away with disposable paper towels. Persons with open sores on their legs, thighs, or genitals should disinfect the toilet seat after each use. Urinals and bedpans should not be shared between family members unless they are thoroughly disinfected beforehand.

Thermometers

Electronic thermometers with disposable covers do not need to be cleaned between users, unless they are visibly soiled. Wipe the surface with a disinfectant solution if necessary. Glass thermometers should be washed with soap and warm water before and after each use. If it will be shared between family members, the thermometer should be soaked in 70% and 90% ethyl alcohol for 30 minutes, then rinsed under a stream of warm water between each use.

Pet Care Precautions

Certain animals may be health hazards for people with compromised immune systems. These animals include turtles, reptiles, birds, puppies and kittens under the age of 8 months, wild animals, pets without current immunizations, and pets with illnesses of unknown origin.

Did you know. . .

HIV cannot be spread to, from, or by cats, dogs, birds, or other pets.

Pet cages and cat litter boxes can harbor infectious, sometimes aerosolized organisms. These pet items should be cared for only by someone who is not immuno-compromised. If this is not possible, a mask with a sealable nose clip, and disposable latex gloves should be worn each time pet care is done. Follow all pet care with thorough handwashing.

Animals may carry a variety of diseases harmful to people with weakened immune systems. Some of these diseases may be passed by the animal licking their person's face or open wounds. Wash hands after stroking or other contact with pets. Keep cats' and dogs' nails trimmed. Wear latex gloves to clean up a pet's urine, feces, or vomitus. The soiled area should be cleaned with a fresh solution of 1:10 bleach.

Pet food and water bowls should be regularly washed in warm, soapy water, and then rinsed. Cat litter boxes should be emptied out regularly and washed at least monthly. Fish tanks should be kept clean. It is possible to order disposable latex "calf-birthing" gloves from a veterinarian for immunocompromised individuals. These gloves should offer protection from the organisms that are present in the fish tank.

Do not let your pet drink from the toilet, eat other animal's feces, or eat any type of dead animal or garbage. It is best to restrict cats to the indoors only. Dogs should be kept indoors or on a leash. Many communities have volunteer groups and veterinarians that will assist people with HIV take care of their pets, if needed. Do not hesitate to consult your veterinarian with your questions.

The CDC website provides a detailed brochure called *Preventing Infections from Pets* along with useful links to related information.

Kitchen Safety and Proper Food Preparation

Wash hands thoroughly before preparing food and use care when tasting food. Use a clean spoon and wash the spoon after using it once. Persons with HIV infection should avoid unpasteurized milk, raw eggs or products that contain raw eggs, raw fish, and cracked or non-intact eggs. Cook all meat, eggs, and fish thoroughly to kill any organisms that may be present in them. Wash fruits and vegetables thoroughly before eating.

Disinfect countertops, stoves, sinks, refrigerators, door handles, and floors regularly. Use window screens to prevent insects from entering the room. Discard food that has expired or is past a safe storage date, shows signs of mold, or smells bad.

Use separate cutting boards for meat and for fruits and vegetables. Disinfect cutting boards frequently. Avoid wooden cutting boards if possible. Kitchen garbage should be contained in a leakproof, washable receptacle that is lined with a plastic bag. Seal the garbage liner bags and remove the garbage frequently.

Safe and Legal Disposal of Sharps

Disposal of syringes, needles, and lancets is regulated. These items are called sharps. They can carry hepatitis, HIV and other germs that cause disease. Throwing them in the trash or flushing them down the toilet can pose health risks for others. Regulations governing disposal of sharps protect garbage and other utility workers and the general public from needlesticks and illness. There are different rules and disposal options for different circumstances. Contact your local health department to determine which option applies to your situation.

Found Syringes in Public Locations

Syringes that are found in parks, along roadsides, in laundromats, or in other public locations present potential risk for accidental needlesticks. Risks for infection from a found syringe depends on a variety of factors, including the amount of time the syringe was left out, the presence of blood, and the type of injury (scratch versus puncture). The risk of HIV infection to a healthcare worker from a needlestick containing HIV-positive blood is about 1 in 300, according to CDC data.

Anyone with an accidental needlestick requires an assessment by a medical professional. Clinicians should make certain that the injured person had been vaccinated against hepatitis B and tetanus and may also recommend testing for HIV, HCV, and HBV. If a found syringe is handled, but no needlestick occurred, testing for HIV is not necessary. Handling a syringe is not a risk for HIV transmission.

Safe Disposal of Found Syringes

Found used syringes or needles present a risk for HIV, HBV, HCV, and other pathogens. Parents and other caregivers should make sure children understand they should never touch a found needle or syringe, but instead should immediately ask a responsible adult for help. For safe disposal of found syringes:

- **If you find a syringe or needle, do not pick it up with your bare hands.** Use a gloves and tongs, shovel or broom and dustpan to pick it up. Hold the needle away from your body.
- **Do not break the needle off from the syringe.** Needles can carry HIV, hepatitis, and other germs. Do not flush needles or syringes down the toilet!
- Place used sharps and syringes in a safe container: one with at least a 1-inch opening and a lid that will seal tightly. An empty plastic laundry detergent, shampoo, pickle, oil, or similar bottle or jar will work. If a glass jar is used, place it into a larger plastic bucket or container that has a tight-fitting lid. Soda cans are not good containers to use because people often try to recycle discarded cans.
- Carefully place the needle or syringe into the bottle or jar and seal the lid tightly. Tape it shut for added safety, and label it with the warning: **Sharps, Do Not Recycle**. The sealed container should not be placed where children might open it.
- Call your local health department to determine what disposal sites are available to you.

Part III: Testing and Counseling

The CDC believes that many people in the United States have HIV but have not been tested for it. These people do not know they are infected and that they need medical care. Also, they can unknowingly pass HIV infection on to others.

Some people do not find out that they are infected with HIV until they get sick or show symptoms and go to a clinic or hospital and get a test to find out their HIV status. Since most people don't have symptoms for years, they do not find out their status until later in the disease progression. By the time they find out they are infected, they have missed opportunities to take care of their health and avoid passing the infection on to others. It is important for anyone at risk of HIV infection to get tested. Those who are uninfected can learn to take steps to avoid infection and those who are infected can take steps to take care of their own health as well as to avoid passing the infection on to others.

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 (EIA, or ELISA). 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 EIA screening test.

Note: Someone **not** infected with HIV may test reactive on a screening test because the test detected proteins related to other autoimmune diseases and gave a positive result. For this reason, it is **critical** that reactive screening tests be verified with a confirmatory test and that clients **not** be told they are infected with HIV unless the confirmatory test verifies that HIV antibodies are present.

Antibody Testing Specimen Options

HIV antibody tests are designed to detect HIV antibodies in blood, urine, or oral fluid (oral mucosa transudate) samples.

Blood

The most frequently used HIV antibody test detects HIV antibodies in blood. Depending on test type, blood from a venipuncture or fingerstick will be used. This is the test that is used most often in public health clinics and doctors' offices. Most rapid screening tests use fingerstick blood.

As with all screening tests, reactive blood screening tests must be confirmed with a Western Blot test. For most HIV testing, this confirmatory testing is done on the same sample in the laboratory. For reactive **rapid** tests, an additional sample needs to be drawn and sent to the laboratory.

Oral Fluid

This test detects HIV antibodies in the mucous membrane (oral mucosal transudate) of the mouth. The oral test kit uses a special collection device that looks like a toothbrush. No needles are used. There are some rapid tests that use oral fluids. Many public health clinics also offer oral fluid testing. Some provide rapid oral fluid testing. As with all screening tests, positive oral fluid screening tests must be confirmed with a Western Blot test.

It is important to note that although antibodies to HIV can be found in saliva and oral fluids, these fluids do not contain sufficient amounts of the virus to be infectious and therefore are not considered a risk for transmitting the virus.

Urine

A urine-based test for HIV antibodies is available for use only in physician's offices or medical clinics. It tests for HIV antibodies in the urine. It is important to note that, even though antibodies to HIV can be found in urine, urine is not considered a risk for transmitting the virus. As with all screening tests, a positive urine HIV screening test must be confirmed with a Western Blot test, which can be done on the same specimen.

Rapid HIV Test

The rapid HIV test is a screening test that can provide results in less than an hour. Rapid testing can be conducted on blood and/or oral mucosal transudate, depending on the type of test. As with all screening tests, any reactive rapid test result must be confirmed with a conventional Western Blot test.

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 Kits

Currently, the only licensed and FDA-approved test kit for home HIV antibody testing is the "Home Access HIV-1 Test System" manufactured by Home Access Health Corporation. If you are unsure if an HIV test is FDA approved, you can check the FDA list, which is available online (see Resources section at the end of the course).

The test requires a few drops of blood, which is mailed to the company in a safe mailer. If the screening test is reactive, a confirmatory Western Blot test is done by the same laboratory so that final results are available to clients. The client calls the company to learn the results over the phone.

Internet Test Kits

Although other "home" test kits may be ordered over the Internet, they may not be approved by the FDA and are not guaranteed to be accurate. The CDC does not recommend using any test that has not been approved by the FDA.

Other HIV Tests

There are several other methods for testing HIV including the p24 antigen test, the plasma HIV RNA or proviral DNA test, and the HIV viral load test.

p24 Antigen Test

This blood test measures a core protein of HIV. This protein occurs during primary infection (the first weeks of infection) but may disappear as soon as antibodies to the virus are present. Because of this, and because of the expense of the test, p24 antigen tests are currently only available under limited circumstances.

Plasma HIV RNA or Proviral DNA Tests

These blood tests may be run on people with suspected new HIV infection. They are expensive and not used as screening tests for the general public. However, anyone who has had a potential exposure to HIV through unprotected sex or sharing needles, and who presents with symptoms of primary infection (usually seen within the first 2 weeks of infection with HIV) should ask their medical practitioner if this test is advisable.

HIV Viral Load Test

This test measures the amount of HIV in an infected person's bloodstream. It is rarely used to diagnose HIV infection. It is most often used in individuals who are HIV-positive to measure the effectiveness of antiretroviral medications used to treat HIV infection.

How and Where to Get Tested for HIV

Anyone who has 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 the Infection Control section of this course.

Where to Test for HIV

People may get an HIV test at public health departments, through their medical provider, family planning, or sexually transmitted disease clinics—and, in some cases, at community clinics. Call the Washington State HIV/AIDS hotline at 1-800-272-2437 for a referral to a public health, family planning, or community clinic in your county.

Confidential Testing

With **confidential** HIV testing, clients do not give their real name, and the information about their testing is maintained in medical records. Their results are confidential. Results and testing information are not released to others except when medically necessary or under special circumstances (eg, when they sign a release for the results to be given to another person or agency). HIV is a reportable condition. Confidential HIV results are reported to local public health officials.

Anonymous Testing

An **anonymous** HIV antibody test means that the clients don't give their name and the person who orders or performs the test does not maintain a record of the name of the person they are testing. If you want to know where to get tested anonymously, call the Washington State HIV/AIDS hotline at 1-800-272-2437 for information about anonymous testing in your area.

Informed Consent Required

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 (including source testing relating to occupation exposures and legally mandated situations specified in Washington State law).

Testing Information and Risk Assessment Required

Aside from the exceptions listed above, all people tested for HIV should be assessed for their risk of infection and—unless previously tested and having declined information—be provided with appropriate information about the test, including, but not limited to:

- The benefits of learning their HIV status and the potential dangers of the disease;
- How HIV is transmitted and way in which it can be prevented;
- Meaning of HIV test results and the importance of obtaining the results; and
- As appropriate, the availability of anonymous testing and the differences between anonymous and confidential testing.

HIV Antibody Test Results

Antibody test results can be negative, positive, or indeterminate. A negative test result is not certain until you have passed the window period.

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.

Some infected people are able to produce antibodies as early as 2 weeks after infection. Almost everyone will develop enough antibodies to be detected by 12 weeks after infection. Unfortunately, there is no way to know how long each infected person will take to develop antibodies. However, virtually everyone who is infected will produce enough antibodies for detection by 12 weeks (3 months). 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.

Negative Results

If the test result is negative, it means one of two things:

- Either the person is **not** infected with the virus, or
- The person **became infected recently** and has not produced enough antibodies to be detected by the test.

If a person is concerned about a recent incident, they should test 3 months from the date of their last possible exposure. A negative test result does **not** mean a person is immune to HIV. If risky behavior continues, infection may occur.

Positive Results

A positive confirmatory test indicates the presence of HIV antibodies:

- This person is infected with HIV;
- Can spread the virus to others through unsafe sexual practices, sharing contaminated injection equipment, or breastfeeding; and
- Is infected for life.

Indeterminate Results

Occasionally, a Western Blot test result will come back with an indeterminate or inconclusive test result. If a person has recently engaged in behaviors that put them at risk for getting HIV, it could mean that they are newly infected with HIV and are developing antibodies. This is called **seroconverting**.

If seroconversion is suspected, RNA testing can determine if the HIV virus is present. If RNA testing is not available, a second specimen should be gathered and tested with an antibody test. If seroconversion is present, this second test may show additional bands or give a positive result.

Indeterminate results are not always indicative of seroconversion. They can also be caused by cross reaction with other proteins from several sources, including pregnancy, other autoimmune diseases, and recent influenza vaccinations.

For low-risk people when seroconversion is not suspected, retesting should be conducted at 1 month and at 3 months from the last possible exposure to verify that they are not infected. Non-infection is indicated if the subsequent tests continue to be indeterminate (without additional HIV antibody protein bands) or negative.

Indeterminate results for low-risk clients are rare. It is possible that some uninfected people may always test indeterminate due to the cross reaction from protein bands from something other than HIV. Other uninfected people who first test indeterminate may clear their bodies of those other proteins that are causing the cross reaction and, in subsequent tests, test negative. Still others go back and forth between indeterminate and negative.

Counseling messages should explain that only HIV-positive tests indicate infection with HIV and that some people test indeterminate because of non-HIV proteins in their bodies that register on the test. No further testing for other diseases is indicated.

Advantages of Early Testing for HIV Infection

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.

Counseling with HIV Testing

Washington State law (WAC 246-100-207 and -209) requires that HIV test counseling be offered to all clients who are at risk for HIV or who request counseling. At the same time, the law states that persons who refuse counseling should not be denied an HIV test (clients can refuse counseling). Also, individuals conducting HIV tests do not have to provide the counseling themselves—they can refer the client to another person or agency for counseling.

The person who provides HIV test counseling to clients should direct the counseling toward increasing clients' understanding of their own risk of acquiring or transmitting HIV, motivating them to reduce their risk, and assisting them to build skills to reduce their risk.

Pre-Test Counseling

Pre-test counseling should be based on recommendations of the CDC's 2006 *Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings*. Some material in this document supersedes the material in the 2001 *Revised Guidelines for HIV Counseling, Testing and Referral*, but both are currently available on the CDC website.

Pre-test counseling should always:

- Assist the individual to set realistic behavior-change goals and establish strategies for reducing their risk of acquiring or transmitting HIV
- Provide appropriate risk reduction skills-building opportunities to support their behavior change goals
- Provide or refer for other appropriate prevention, support, or medical services

Post-Test Counseling

Those who test HIV negative should be offered an individual counseling session at the time they receive their test results. For those clients who test HIV-positive, counseling can't just be offered, it must be provided or referred and (in addition to what is provided to HIV-negative clients) must also include:

- If confidentially tested, the information that HIV is a reportable condition
- Either the provision of partner notification support or referral to public health for these services
- Appropriate referrals for alcohol and drug and mental health counseling, medical evaluation, TB screening, and HIV prevention and other support services

Testing Confidentiality

Information about a person's HIV test and results is confidential and must not be shared with others. People who perform HIV counseling and testing in public health departments or health districts must sign strict confidentiality agreements. These agreements regulate the personal information that may be revealed in counseling and testing sessions as well as test results. HIV test results are kept in locked files, with only a few appropriate staff members having access to them. More information on confidentiality requirements can be found in the Legal section of this course.

HIV Testing: Pregnancy

Healthcare providers caring for pregnant clients are required by Washington State law to ensure HIV counseling and testing for each pregnant woman who is seeking prenatal care (RCW 70.24.095 and WAC 246-100-208). All pregnant women are to be offered an HIV test and should be tested unless they refuse the HIV test. Those who refuse HIV testing must sign a form saying that they "opt out" of the HIV test. HIV-infected women can reduce the chance of transmitting the virus to their children if they take AZT during pregnancy and delivery.

HIV Testing: Sexual Assault

Sexual assault is prevalent in the United States. More than 300,000 women and almost 93,000 men are raped annually, according to the National Violence Against Women Survey (NVAWS). Based on existing crime report data, an estimated 40% of female rape victims are under age 18 and most sexual assault victims know their assailant. Men may also be victims of sexual assault; however, they are much less likely to report being assaulted, so data and reporting are not accurate. Apart from the emotional and physical trauma that accompany sexual assault, many victims are concerned about HIV.

Sexual Assault HIV Risks

According to CDC, the odds of HIV infection from a sexual assault in the United States are 2 in 1,000. While this is a low risk, the fear of HIV poses an additional emotional burden on people who have been victims of sexual assault.

HIV Testing

When assault victims are worried about HIV, testing can help their healing process. Almost all such HIV tests will be negative and thus provide emotional relief to the victim. The very few who do test HIV-positive will need that information both for obtaining healthcare and as evidence in possible criminal court cases.

Assault and the Window Period

The window period for HIV antibody testing must be taken into account when testing after an assault. Recall that it takes from 2 to 12 weeks after exposure for antibodies to show up in an HIV test. Any test conducted shortly after the assault reveals only the original status of the victim. An early test can, however, provide proof that the victim was HIV-negative at the time of the assault, which may be useful as evidence in a criminal case.

To verify that the victim was not infected by the assault, it is necessary to test again after the window period. If, following an earlier HIV-negative result, the second test is HIV-positive, it indicates that the victim was infected by the assault (assuming no other opportunity for infection occurred in the interim).

Other Testing

When counseling assault victims about the risk of HIV, remember that the risk of HIV is low but there are other potentially higher risks to be addressed. The risk of other STDs and pregnancy are much higher than HIV. Victims of sexual assault should be tested for STDs and females given emergency contraception. The emergency contraception hotline number (1-888-668-2528) should be provided by “telephone” rape counselors or other counselors.

Most experts recommend that a sexual assault victim go directly to the nearest hospital emergency room, without first changing their clothing, bathing, or showering. Trained staff in the emergency room (ER) will counsel the victim, and may also offer testing or referral for HIV, STDs, and pregnancy. It is common practice for the ER physician to take DNA samples of blood or semen from the vagina, rectum, and perineal and adjacent areas, which can be used as evidence against the attacker. Some ERs may refer sexual assault survivors to the local health jurisdiction for HIV testing.

Many people feel that the ER setting is a profoundly unpleasant one in which to question sexual assault victims regarding their sexual risks history. However, testing shortly after a sexual assault provides baseline information on their status for the various infections. As noted earlier, this information can be used for follow-up care and for legal action against the assailant. All testing to be used for baseline information and legal action should be done confidentially.

Assailant Testing

In Washington State, only the victims of convicted sexual offenders may learn the attacker's HIV status. The victim needs to consider whether to start post-exposure prophylaxis (PEP) independently of the source's test result, because the time between the attack and the conviction will likely be longer than the 24 to 48 hours recommended to start PEP.

Partner Notification

Partner notification is a voluntary service provided to HIV-positive people and their sexual partners or injecting-drug-sharing partners. This service is provided using a variety of strategies to maintain the confidentiality of both the HIV-infected client and the partners.

HIV-infected people are counseled about the importance of their partners' being notified of exposure to HIV and offered an HIV test. Clients can choose to notify their partners themselves or have public health staff notify them. When public health staff notify partners, they notify them of their exposure, provide counseling and information, and offer HIV testing without revealing the partner who tested HIV-positive.

Partner notification is a critical tool for those notified because it alerts them to the need for being tested. If they are uninfected, they can take steps to ensure they don't become infected; if infected, they can take steps to care for their own health and to ensure that they do not pass the virus on to others.

Reporting Requirements

HIV and AIDS are both reportable conditions in Washington State. Reporting is discussed in Part I above.

Part IV: Clinical Manifestations and Treatment

The Natural History of HIV Infection

A person with untreated HIV infection will experience several stages in infection. These include: viral transmission, primary HIV infection, seroconversion, asymptomatic HIV infection, symptomatic HIV infection, and AIDS. These stages are sometimes called the "natural history" of disease progression and are described below. 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 below.

Natural History of HIV Infection

*Viral transmission			
		*Primary HIV infection	
		*Seroconversion	
		Asymptomatic HIV infection	
		Symptomatic HIV infection	
		AIDS	

*The first three (in yellow) constitute the window period.

Viral Transmission

Viral transmission is the initial infection with HIV. People infected with HIV may become infectious to others within 5 days. They are infectious before the onset of any symptoms, and they will remain infectious for the rest of their lives.

Primary HIV Infection

During the first few weeks of HIV infection, individuals have a very high level of virus (viral load) in their bloodstream. The high viral load means the individual can easily pass the virus to others. Unfortunately, during primary infection many people are unaware that they are infected.

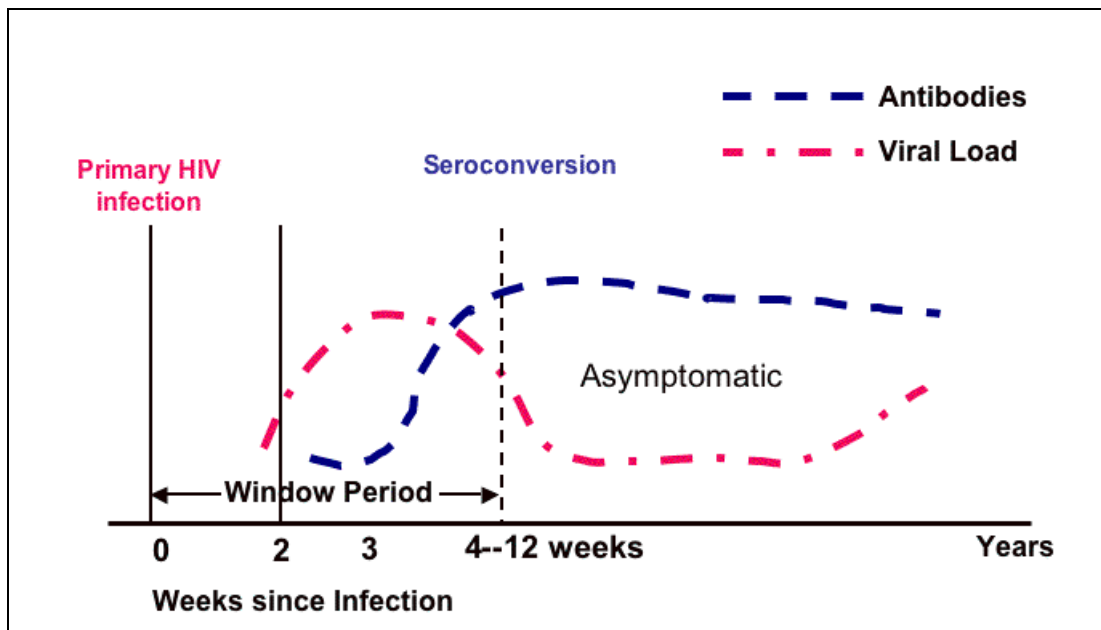
In this stage, about half of infected people have symptoms of fever, swollen glands (in the neck, armpits, groin), rash, fatigue, and a sore throat. These symptoms, which resemble mononucleosis, go away in a few weeks, but the individual continues to be infectious to others.

It is extremely important that healthcare providers consider the diagnosis of primary HIV infection if clients engage in behaviors that put them at risk for HIV and are presenting with the above symptoms. If individuals experience these symptoms after having unprotected sex or sharing needles, they should seek medical care and tell their provider why they are concerned about HIV infection.

Window Period and Seroconversion

The **window period** begins with initial infection and continues until the virus can be detected by an HIV antibody test. **Seroconversion** is the term for the point at which HIV antibodies are detectable and the window period ends. See graph below.

Natural Course of Untreated HIV Infection



The first two weeks following infection are highly contagious but not detectable by HIV tests. Antibodies may begin to appear after 2 weeks but take up to 12 weeks or longer to reach seroconversion (eg, be detectable by current testing). As is seen on the line curves, the viral load continues to increase until there are sufficient antibodies to suppress, but not kill, the virus. Once the antibodies become active, an untreated patient may be asymptomatic for 10 years before the antibodies are no longer able to suppress the virus and the person becomes symptomatic. Source: Adapted from Conway & Bartlett, 2003.

Asymptomatic HIV Infection

Following seroconversion, a person infected with HIV is **asymptomatic** (has no noticeable signs or symptoms). The person may look and feel healthy, but can still pass the virus to others. It is not unusual for an HIV-infected person to live 10 years or longer without any outward physical signs of progression to AIDS. Meanwhile, the person's blood and other systems are affected by HIV, which would be reflected in laboratory tests. Unless a person in this stage has been tested for HIV, they will probably not be aware they are infected.

Symptomatic HIV Infection

During the symptomatic stage of HIV infection, a person begins to have noticeable physical symptoms that are related to HIV infection. Although no symptoms are specific **only** to HIV infection, some common symptoms are:

- Persistent low-grade fever
- Pronounced weight loss that is not due to dieting
- Persistent headaches
- Diarrhea that lasts more than 1 month
- Difficulty recovering from colds and the flu
- Being sicker than they normally would with ordinary illnesses
- Recurrent vaginal yeast infections in women
- Thrush (a yeast infection) coating the mouth or tongue

Anyone who has symptoms like these and has engaged in behaviors that transmit HIV should seek medical advice. The only way to know for sure if you are infected with HIV is to take an HIV antibody test.

Did you know. . .

An AIDS diagnosis can only be made by a licensed healthcare provider and, once the diagnosis is made, the person is always considered to have AIDS.

An AIDS diagnosis is based on the result of HIV-specific blood tests and/or on the person's physical condition. Established AIDS-defining illnesses, white blood cell counts, and other conditions are specifically linked to making an AIDS diagnosis. Once a person is diagnosed with AIDS, even if they later feel better, they do not "go backwards" in the classification system for HIV infection. They are always considered to have AIDS.

People who have an AIDS diagnosis may often appear to a casual observer to be quite healthy, but continue to be infectious and can pass the virus to others. Over time, people with AIDS frequently have a reduced white blood count and develop poorer health. They may also have a significant amount of virus present in their blood, measureable as viral load.

Cofactors

A **cofactor** is a separate condition that can change or speed up the course of disease. There are several cofactors that can increase the rate of progression to AIDS. They include a person's age, certain genetic factors, and possibly drug use, smoking, nutrition, and HCV.

Time from Infection to Death

Currently, if the infection is untreated, the average time from HIV infection to death is 10 to 12 years. Early detection and medical treatment may mean that the person will live longer.

AIDS Surveillance Case Definition, Revised 1993

In 1987 the CDC defined AIDS using a positive HIV antibody test plus a list of conditions that indicated a deficient immune system. In 1993 the CDC revised the definition of AIDS to include more conditions and a variety of CD4 cell counts. The revised definition meant that more people were considered to have AIDS, and that year saw an abrupt increase in the number of people with AIDS that reflected the change in classification system.

An AIDS diagnosis is only made by a licensed healthcare provider, based on a confirmed HIV test result, the presence of certain defining physical conditions, and the person's CD4 cell count. HIV has a wide spectrum of clinical presentations in children. The CDC developed a revised pediatric HIV classification system in 1994, to classify HIV-infected pediatric patients into categories based on their immune system, CD4 cells, and clinical category. Pediatric classification of AIDS is different than the classification for adults.

The 1993 AIDS Surveillance Case Definition for Adolescents and Adults, which is the **most current definition**, comprises a 3 x 3 staging system. In this definition, any person who is HIV-infected and has either an AIDS indicator condition (see below), or a CD4+ (T-cell count) less than 200 cells/mm³ or less than 14%, is considered to have AIDS.

AIDS Indicator Conditions (adults)

A positive HIV test, plus one or more of the following:

- Candidiasis, of esophagus, trachea, bronchi, or lungs
- Cervical cancer, invasive
- Coccidioidomycosis, extrapulmonary
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis with diarrhea >1 month
- Cytomegalovirus of any organ other than liver, spleen, or lymph nodes
- Herpes simplex with mucocutaneous ulcer lasting >1 month or bronchitis, pneumonitis, esophagitis
- Histoplasmosis, extrapulmonary
- HIV-associated dementia: disabling cognitive or motor dysfunction interfering with activities of daily living
- HIV-associated wasting: involuntary weight loss >10% of baseline plus chronic diarrhea (2 loose stools/day for 30 days) or chronic weakness and documented enigmatic fever for 30 days
- Kaposi's sarcoma
- Lymphoma of brain
- Lymphoma, non-Hodgkin's of B-cell or unknown immunologic phenotype and histology showing small, noncleaved lymphoma or immunoblastic sarcoma
- Mycobacterium avium complex or M. kansasii, disseminated
- Tuberculosis
- Nocardiosis
- Pneumocystis carinii pneumonia
- Pneumonia, recurrent bacterial (2 episodes in 12 months)
- Progressive multifocal leukoencephalopathy
- Salmonella septicemia (non-typhoid), recurrent
- Strongyloidiasis, extraintestinal
- Toxoplasmosis of internal organs

Clinical Manifestations vs. Opportunistic Infections

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. A **clinical manifestation** is the physical result of some type of illness or infection.

The **opportunistic infections** associated with HIV include any of the infections that are part of an AIDS-defining classification. For example, the opportunistic infection cytomegalovirus often causes the clinical manifestation of blindness in people with AIDS.

HIV in the Body

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.

Scientists are always learning new information about how HIV affects the body. HIV infection seems to affect many body systems. It is well known that HIV infection causes a gradual, pronounced decline in the immune system's functioning. People with HIV are at risk for a wide variety of illnesses, both common and exotic.

HIV affects the:

- Kind and number of blood cells
- Amount of fat and muscle distribution in the body
- Structure and functioning of the brain
- Normal functioning of the immune system
- Body's basic metabolism

HIV infection can cause many painful or uncomfortable conditions, including:

- Confusion or dementia
- Diarrhea
- Fatigue
- Fever
- Nausea or vomiting
- Painful joints, muscles, or nerve pain
- Difficulty with breathing
- Urinary or fecal incontinence
- Vision or hearing loss
- Thrush (yeast infections in the mouth)
- Chronic pneumonias, sinusitis, or bronchitis
- Loss of muscle tissue and body weight

HIV in Children

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 antiretroviral 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.

HIV in Women

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.

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.

Access to Medical Care

As the medications that are available to treat HIV infection have become more numerous and complex, HIV care has become a medical specialty. If possible, people who have HIV infection should seek out a physician who is skilled in the treatment of HIV and AIDS.

People in Washington State may gain access to an HIV specialist through the assistance of the case manager(s) in their county. Call your local health department or health district for information on case management programs.

Impact of New Drug Therapies on HIV Clinical Progression

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)**.

Not everyone with HIV infection benefits from the new drug therapies. Some people cannot tolerate the unpleasant or serious side effects from the medications. Others cannot adhere to the complex treatment schedule. If patients do not take their medication every day according to their physician's instructions, the drugs do not work effectively and viral resistance may develop.

Cost of new drug therapies can be prohibitive. Insurance programs and government programs for individuals with low income pay for much of the cost of the HIV medicines in Washington State. These medicines may cost upwards of \$2,000 per person each month. People who live in other countries where the medication is unaffordable have very limited access to the newer therapies.

Although the new drug therapies work for many people to keep the amount of virus in their bodies to very low levels, they are not a cure for HIV. Once therapy is discontinued, viral load will increase. Even during treatment, viral replication occurs and **the person remains infectious to others.**

Resistance

Many people find that over time the virus becomes resistant to their medication and they must change medications. This is especially true when the medications are not taken correctly, but it limits the number of possible drug therapies the person might be able to use.

Side Effects

Patients often have unpleasant side effects when they use prescription medications to treat their HIV infection. These side effects include:

- Nausea
- Diarrhea
- Peripheral neuropathy (numbness or pain in feet and hands)
- Lipodystrophy: changes in body fat distribution, which presents with large fat deposits on the back of the neck, on the stomach area and in breast size in women and with pronounced thinning of the arms and legs
- Interference with the metabolism of oral contraceptives
- Osteoporosis
- Diabetes or other changes in glucose metabolism
- Very high cholesterol or triglycerides
- Damage to the nervous system, liver, and/or other body organs

Alternative Therapies

People have relied on **alternative** (sometimes called complementary) **therapies** to treat HIV infection for as long as HIV has been known. Many people use these treatments along with therapies from their medical provider. Other people choose to use only alternative therapies. These therapies include a wide range of treatments, including vitamins, massage, herbs, naturopathic remedies, and many more. While there is no evidence of harm from these treatments, there is also very little evidence of benefit. Many of these remedies have not been studied to see if they help.

Interactions with Other Medications/Supplements

It is important for people who are taking alternative therapies to tell their medical provider. There may be harmful side effects from the interactions of the "natural" medicine and antiretrovirals. For example, St. John's Wort is an herbal remedy that interacts significantly with HIV medications.

Other drugs, including over-the-counter (OTC) medications, prescription medications, and street drugs, may have serious interactions with antiretroviral medications. It is extremely important that people on HIV medications tell their doctor, pharmacist, and social worker about all other drugs they take.

Vaccine

Scientists have worked for years to develop a vaccine to prevent, or alleviate the severity of, HIV infection. No one knows when a vaccine will be ready for distribution. Many promising developments have been made and it is possible that a vaccine will be available within this decade. Currently, prevention is still the only way to avoid HIV infection.

However, promising research results in the last year have encouraged scientists to feel more confident that a vaccine is truly possible, although probably several years off at best. Results of a study in Thailand in 2009 showed a modest but encouraging 31% protection rate, enough to show scientists they are moving in the right direction (UNAIDS, 2010). On July 8, 2010, two papers published in *Science* announced discovery of “an antibody that can block more than 90% of strains of HIV-1, the most common form of the disease.... It is the latest step in the quest to find a 'broadly neutralizing' antibody, capable of blocking a large quantity of the many HIV-1 strains known around the world” (Ledford, 2010).

In addition, MIT/Harvard researchers announced in the May 5, 2010, online edition of the journal *Nature* findings from a study investigating **super controllers**—the 1 in 200 people infected with HIV who never get AIDS. It appears that super controllers “have a rare set of genes that allow their immune systems to unleash killer T cells with unusual powers. Normal killer T cells work as a team” and it takes this team effort to attack all the different parts of a virus and kill it. This process is too slow to be effective against a fast-mutating virus like HIV, which is one reason the virus quickly gets the upper hand in a normal immune system. However, elite controllers have killer T cells that can function alone and are “‘broadly reactive’ and can kill off mutant HIV variants as they arise.” Because normal people have a few of these killer T cells it is thought that a vaccine that could activate them and direct them against HIV, causing them to clone themselves, could be effective (DeNoon, 2010).

More information on vaccines, a glossary, media updates, and a list of vaccine trials for both preventive (for HIV-negative individuals) and therapeutic (for HIV-positive individuals) vaccines may be obtained at the NIH AIDSinfo website, and from the HIV Vaccine Trials Network, which is headquartered at the Fred Hutchinson Cancer Research Center in Seattle.

Case Management

People living with HIV often seek the assistance of an HIV case manager who can help explain the different types of services available. Washington State has several systems in place to provide prescription and medical assistance to people living with HIV and AIDS. Contact your local health department or district to find case management in your community. You can also call the Washington State Dept. of Health Client Services toll-free at 1-877-376-9316.

Children with HIV may also benefit from the Children with Special Health Care Needs program. Care coordinators for this program are located at every county health department or district. Local community-based organizations like the Northwest Family Center in Seattle, and specialty hospitals like Children's Medical Center in Seattle and Mary Bridge Children's Hospital in Tacoma may provide additional support to children and families.

Tuberculosis, Other STDs, and Hepatitis B and C

Because of the interrelationships between HIV, tuberculosis (TB), sexually transmitted diseases, HBV, and HCV, a brief discussion of each is included here.

Tuberculosis and HIV

Mycobacterium tuberculosis (TB) is transmitted by airborne droplets from people with active pulmonary or laryngeal TB during coughing, sneezing, or talking. Although TB bacteria can live anywhere in the body, infectious pulmonary or laryngeal TB poses the greatest threat to public health.

Cause of TB

Latent infection, which is asymptomatic and not infectious, can last for a lifetime. A presumptive diagnosis of active TB is made when there are positive test results or acid-fast bacilli (AFB) in sputum or other bodily fluids. The diagnosis is confirmed by identification of *M. tuberculosis* on culture, which should be followed by drug sensitivity testing of the bacteria.

Epidemiology of TB

Globally, there are probably 2 billion people (a third of the world's population) infected with TB, and 8 million active cases each year. Tuberculosis is one of the leading causes of death in the world. A total of 228 new cases of tuberculosis were diagnosed among Washington residents in 2008. Twenty-three of 39 counties had at least one new case of TB, with twenty-two reporting more than five new cases of TB. King, Snohomish, and Pierce counties accounted for 72% of the 228 cases. The incidence rate in Washington State in 2008 was 3.5 cases per 100,000 people, an all-time low, and lower than the national rate of 4.2 (DOH, 2009).

Transmission and Progression

When infectious secretions sneezed or coughed by an adult with pulmonary TB are breathed in by another person, the bacteria may come to rest in the lungs. After several weeks, the bacteria multiply, and some asymptomatic, pneumonia-like symptoms may occur. The TB bacteria are carried through the bloodstream and lymph system, pumped through the heart, and then disseminated through the body.

The largest amount of bacteria goes to the lungs. In most cases, this process, called *primary infection*, resolves by itself and something called "delayed-type hypersensitivity" is established. This is measured with the tuberculin skin test. The incubation period for this primary infection is 2 to 10 weeks. In most cases, a latent state of TB develops. Ninety percent of people with latent TB (or LTBI) never experience subsequent disease. Other than a positive tuberculin skin test, people with latent TB infection have no clinical, radiographic (x-ray), or laboratory evidence of TB and cannot transmit TB to others.

Among the other 10% of infected individuals, the TB infection undergoes "reactivation" at some time and they develop active TB. About 5% of newly infected persons reactivate within the first 2 years of primary infection and another 5% will do so at some point later in life.

Symptoms of TB

The period from initial exposure to conversion of the tuberculin skin test is 4 to 12 weeks. During this period, the patient shows no symptoms. The progression to active disease and symptoms (such as cough, weight loss, and fever) usually occurs within the first 2 years after infection, but may occur at any time.

Prevention of TB

It is important to recognize the behavioral barriers to TB management, which include deficiencies in treatment regimens, poor client adherence to TB medications, and lack of public awareness. Primary healthcare providers need adequate training in screening, diagnosis, treatment, counseling, and contact tracing for TB through continuing education programs and expert consultation. Promoting patient adherence to the sometimes-complicated medication schedule also requires consideration of patients' cultural and ethnic perceptions of their health condition. Providing strategies and services that address the multiple health problems associated with TB (such as alcohol and drug abuse, homelessness, and mental illness) also builds trust and promotes adherence to treatment plans.

A daily regimen of Isoniazid for 9 months is recommended because prospective, randomized trials in HIV-negative persons indicate that 12 months of treatment is more effective than 6 months of treatment. Although a 9-month regimen of Isoniazid is the preferred regimen for the treatment of LTBI, a 6-month regimen does provide substantial protection. In some situations, treatment for 6 months rather than 9 months may be cost-effective and still provide a favorable outcome. Thus, based on local conditions, health departments or providers may conclude that a 6-month rather than a 9-month course of Isoniazid is preferred.

Clinical trials have shown that daily preventive therapy for 12 months reduces the risk for TB disease by more than 90% in patients with LTBI who complete a full course of therapy. There is evidence that 6 months of preventive therapy with Isoniazid may also prevent disease in approximately 69% of patients who complete the regimen. Every effort should be made to ensure that patients adhere to this therapy for at least 6 months. Children should receive at least 9 months of preventive therapy.

Treatment of TB and Multidrug-Resistant TB

In order to prevent drug resistance and cure TB, the CDC recommends that TB be treated with a multidrug regimen that may last 6 to 12 months. Current recommendations can be found in the Washington State Department of Health's *Guidelines for the Prevention, Treatment, and Control of TB*. A copy may be obtained by calling the Washington State Department of Health TB Program at 1-360-236-3443. Treatment of multidrug-resistant TB (MDR-TB) is much more difficult and must be individualized. The patient with MDR-TB requires treatment for 2 years or more.

TB/HIV Co-Infection

People co-infected with HIV/TB are at considerably greater risk of developing TB disease than those with TB alone. Studies suggest that the risk of developing TB disease is 7% to 10% each year for persons who are infected with both *M. tuberculosis* and HIV, whereas it is 10% over a lifetime for a person infected only with *M. tuberculosis*.

In an HIV-infected person, TB disease can develop in either of two ways. A person who already has latent TB infection can become infected with HIV, and then TB disease can develop as the immune system is weakened. Or, a person who has HIV infection can become infected with *M. tuberculosis* and TB disease can then rapidly develop because the immune system is not functioning.

Pulmonary TB and extrapulmonary TB are among the conditions included in the 1993 AIDS Surveillance Case Definition. Any HIV-infected person with a diagnosis of TB disease should be reported as having TB and AIDS. For more information on TB, contact the:

Communicable disease staff in each county health department/district. Washington State DOH TB program, 1-360-236-3443. WA State DOH TB website: <http://www.doh.wa.gov/cfh/TB>. CDC Tuberculosis (TB) website: <http://www.cdc.gov/tb/>.

Other STDs and HIV

The term **STD** (sexually transmitted disease) refers to more than 25 infectious organisms transmitted through sexual activity and dozens of clinical syndromes that they cause. Sexually transmitted diseases affect men and women and can be transmitted from mothers to babies during pregnancy and childbirth. They are also called *sexually transmitted infections (STIs)*.

Bacterial, Viral, and Other Causes of STD

Bacteria cause STDs including chlamydia, gonorrhea, and syphilis. Viruses cause herpes, genital warts, hepatitis B, and HIV. Scabies are caused by mites, and pubic lice cause "crabs." Trichomoniasis is caused by tiny organisms called protozoa; "yeast" infections are caused by fungi. Some STDs, such as pelvic inflammatory disease, can have more than one cause—a woman may have both gonorrhea and chlamydia causing PID. A man may have more than one cause for epididymitis, usually gonorrhea and chlamydia. Non-gonococcal urethritis (NGU) is usually caused by bacteria.

STD, Nationally and Internationally

In 1999 the World Health Organization estimated that there were 340 million new cases of the four common curable STDs (gonorrhea, chlamydia, syphilis, trichomoniasis) worldwide among people between ages 15 and 49. Since the beginning of the AIDS epidemic, researchers have noted the strong association between HIV and other STDs.

Nationally, 5 of the top 10 most frequently reported communicable diseases are STDs. In the United States in 2004, 929,462 new cases of chlamydia were reported to the CDC. Reported cases of gonorrhea rose to 330,132 in that year.

Primary and secondary cases of syphilis increased 11.2% to 7,980 cases from 2003 to 2004. The Kaiser Family Foundation's website (<http://www.kff.org>) lists estimates for **incidence** (new cases) and **prevalence** (total number of cases) of both bacterial and viral STDs in the United States, noting that by age 24 at least 1 in 3 sexually active people are estimated to have contracted an STD.

Primary STD infections may cause pregnancy-related complications, congenital infections, infertility, ectopic pregnancy, chronic pelvic pain, and cancers. STDs can also accelerate other infections like HIV.

HIV and STDs

The presence of infection with other STDs increases the risk of HIV transmission because:

- STDs like syphilis and symptomatic herpes can cause breaks in the skin, which provide direct entry for HIV.
- Inflammation from STDs such as chlamydia makes it easier for HIV to enter and infect the body.
- HIV is often detected in the pus or other discharge from genital ulcers from HIV-infected men and women.
- Sores can bleed easily and come into contact with vaginal, cervical, oral, urethral, and rectal tissues during sex.
- Inflammation appears to increase HIV viral shedding and the viral load in genital secretions.

STD Transmission

STDs are transmitted in the same way that HIV is transmitted: by anal, vaginal and oral sex. In addition, skin-to-skin contact is important for the transmission of herpes, genital warts, and HPV infection, syphilis, scabies, and pubic lice.

Symptoms of STD

In the past there was a great emphasis on symptoms as indicators of STD infection. Research has changed this. We now know that 80% of those with chlamydia, 70% of those with herpes, and a great percentage of those with other STDs have no symptoms but can still spread the infections.

Along with prompt testing and treatment for those who do have symptoms, the emphasis in the United States is on screening for infection based on behavioral risk. Patients cannot assume that their healthcare providers do STD testing. In other words, women who are getting a Pap test or yearly exam should not just assume that they are also being tested for chlamydia or any other STD.

Prevention of STD

The following steps will help prevent STD infection:

- Abstain or be in a mutually monogamous relationship with an uninfected partner.
- Know that many STDs have no symptoms.
- Know that birth control pills and shots do not prevent infections—you must use condoms along with other birth control methods.
- Go with your sex partner(s) for tests.
- Avoid douching.
- Learn the right way to use condoms and then use them correctly and consistently every time you have sex.
- Be sure all sex partners are examined and treated if an STD occurs.
- Change the ways you have sex so that there is no risk of infection.
- Learn how to talk about correct use of condoms with all sex partners.
- Practice the prevention you have learned for HIV and hepatitis.

STD Tests

At most sites, new urine LCR (urinate in a cup) tests for some STDs are available. The Western Blot (blood) test for herpes and hybrid capture tests for genital warts may also be available. In most places, however, cultures, wet preps, and blood draws for syphilis remain the standard testing method. It is vital that women get Pap tests, and that both men and women disclose a history of STD during medical workups.

STD Treatment

Treatment for STDs is based on lab work and clinical diagnosis. Treatments vary with each disease or syndrome. Because there is developing resistance to medications for some STDs, check the latest CDC treatment guidelines.

Hepatitis B and HIV

Hepatitis is inflammation of the liver that may be caused by many things, including viruses. Current viruses include hepatitis A (fecal/oral transmission), B, C, D, and others. Hepatitis B (HBV) is a virus that is transmitted by the blood and body fluids of an infected person.

Prevention of HBV

A vaccine to prevent HBV is available. Hepatitis B vaccine is administered intramuscularly as a three-dose series over 6 months. More than 90% of people who take the three injections become immune to HBV. Why isn't everyone vaccinated for HBV? The HBV vaccine is relatively inexpensive for infants and children but more expensive for adults (costing about \$150 per person). This cost is the likely reason that most adults are not vaccinated against HBV.

HBV Epidemiology

An estimated 60,000 people annually become infected with HBV in the United States. Of these, about 2% to 6% of adults will become chronically infectious carriers of the virus. There are 1,250,000 carriers of HBV in the United States. Each year, more than 11,000 people will be hospitalized and 4,000 to 5,000 people will die in the United States from chronic liver disease or liver cancer caused by HBV.

HBV is **not** transmitted by:

- Breastfeeding
- Sneezing or coughing
- Hugging
- Sharing eating utensils or drinking glasses
- Food or water
- Casual contact

Risk Factors for HBV Infection

Unvaccinated people are at higher risk for getting HBV if they:

- Share injection needles/syringes and equipment
- Have sexual intercourse with an infected person or with more than one partner
- Are a man and have sex with a man
- Work where they come in contact with blood or body fluids, such as in a healthcare setting, prison, or home for the developmentally disabled
- Use the personal care items (razors, toothbrushes) of an infected person
- Are on kidney dialysis
- Were born in a part of the world with a high rate of hepatitis B (China, Southeast Asia, Africa, the Pacific Islands, the Middle East, South America, and Alaska)
- Receive a tattoo or body piercing with equipment contaminated with the blood of someone infected with HBV

Progression of HBV

The average incubation period for HBV is about 12 weeks. People are infectious when they are "hepatitis B surface-antigen positive" (HBsAg), either because they are newly infected or because they are chronic carriers.

HBV causes damage to the liver and other body systems, which can range in severity from mild, to severe, to fatal. Most people recover from their HBV infection and do not become carriers. Carriers (about 2–6% of adults who become infected) have the virus in their body for months, years, or for life. They can infect others with HBV through their blood or other body fluid contact.

Symptoms of HBV

People with HBV may feel fine and look healthy. Some people who are infected with HBV display only mild symptoms, which could include:

- Loss of appetite
- Extreme fatigue
- Abdominal pain
- Jaundice (yellowing of the eyes and skin)
- Joint pain
- Malaise
- Dark urine
- Nausea or vomiting
- Skin rashes

Others who are infected with HBV experience more severe symptoms, and may be incapacitated for weeks or months. Long-term complications may also occur, and include chronic hepatitis, recurring liver disease, liver failure, and cirrhosis (chronic liver damage).

Prevention of HBV

A vaccine for HBV has been available since 1982. This vaccine is suitable for people of all ages, even infants. People who may be at risk for infection should get vaccinated. To further reduce the risk of or prevent HBV infection, a person can:

- Abstain from sexual intercourse and/or injecting drug use
- Maintain a monogamous relationship with a partner who is uninfected or vaccinated against HBV
- Use safer sex practices (as defined in the Transmission section)
- Never share needles/syringes or other injection equipment
- Never share toothbrushes, razors, nose clippers, or other personal care items that may come in contact with blood
- Use Standard Precautions with all blood and body fluids

Infants born to mothers who are HBV carriers have a greater than 90% reduction in their chance of becoming infected with HBV, if they receive a shot of hepatitis B immune globulin and hepatitis B vaccine shortly after birth, plus two additional vaccine doses by age 6 months. It is vital that the women and their medical providers are aware that the woman is a HBV carrier. People with HBV should not donate blood, semen, or body organs.

Treatment of HBV

There are no medications available for recently acquired (acute) HBV infection. There are antiviral drugs available for the treatment of chronic HBV infection, however treatment success varies by individual. The vaccine is not used to treat HBV once a person is infected.

Hepatitis C and HIV

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV), which is found in the blood of persons who have this disease. Hepatitis C is the leading cause of chronic liver disease in the United States. Hepatitis C was discovered in the late 1980s, although it was likely spread for at least 40 to 50 years prior to that.

HCV Epidemiology

Globally, 180 million people are infected with HCV. An estimated 4.1 million Americans have been infected with HCV and about 3.2 million are chronically infected (meaning they have a current or previous infection with the virus). The CDC estimates that as many as 1 million Americans were infected with HCV from blood transfusions, and that 3.75 million Americans do **not** know they are HCV-positive. Of these, 2.75 million people are chronically infected and are infectious for HCV.

In the United States, 8,000 to 10,000 deaths per year are attributed to HCV-associated liver disease. The number of deaths from HCV is expected to triple in the next 10 to 20 years. An estimated 110,000 people in Washington State are infected with HCV.

Transmission of HCV

HCV is transmitted primarily by blood and blood products. Blood transfusions before 1992 and the use of shared or unsterilized needles and syringes have been the main causes of the spread of HCV in the United States. The primary way that HCV is transmitted now is through injecting drug use. Since 1992, all blood for donation in the United States is tested for HCV.

Sexual transmission of HCV is considered low, but it accounts for 10% to 20% of infections. If a pregnant woman is infected with HCV, she may pass the virus to her baby but this occurs in only about 5% of those pregnancies. Household transmission is possible if people share personal care items such as razors, nail clippers, or toothbrushes.

HCV is **not** transmitted by:

- Breastfeeding (unless blood is present)
- Sneezing
- Hugging
- Kissing
- Coughing
- Sharing eating utensils or drinking glasses
- Food or water
- Casual contact

Progression of HCV

The severity of HCV differs from HIV. The CDC states that, for every hundred people who are infected with HCV:

- About 15% will fully recover and have no liver damage
- 85% may develop long-term chronic infection
- 70% may develop chronic liver disease
- 20% may develop cirrhosis over a period of 20–30 years
- 1%–5% may die from chronic liver disease

Symptoms of HCV

Persons with HCV may have few or no symptoms for decades. When present, the symptoms of HCV are:

- Nausea and vomiting
- Weakness
- Fever
- Muscle and joint pain
- Jaundice (yellowing of the eyes and skin)
- Dark-colored urine
- Tenderness in the upper abdomen

Prevention of HCV

There is no vaccine to prevent HCV infection. The following steps can protect against HCV infection:

- Follow Standard Precautions to avoid contact with blood or accidental needlesticks.
- Refrain from acquiring tattoos or skin piercings outside of a legitimate business that practices Universal Precautions.
- Refrain from any type of injecting drug use or drug equipment sharing.
- Never share toothbrushes, razors, nail clippers, or other personal care items.
- Cover cuts or sores on the skin.
- Persons who are HCV-infected may lower the small risk of passing HCV to their sex partner by using latex condoms and practicing safer sex.
- Women who are HCV-infected and wish to have children should discuss their choices beforehand with a medical specialist.

People with HCV should not donate blood, semen, or body organs.

Treatment of HCV

Currently there are approved antiretroviral treatments for HCV. The cost of the treatments can be high, and the side effects can be significant (fatigue, flu-like symptoms, nausea, depression, and anemia). People infected with HCV should abstain from alcohol use to avoid further damage to the liver.

Testing for HCV

Many people who are infected with HCV are unaware of their status. People who should consider testing are:

- Current or former injecting drug users
- Persons who received blood transfusions or an organ transplant prior to 1992
- Hemophiliacs who received clotting factor concentrates produced before 1987
- Persons who received chronic hemodialysis
- Infants born to infected mothers
- Healthcare workers who have been occupationally exposed to blood or who have had accidental needlesticks
- Persons who are sex partners of people with HCV

Testing for HCV is available through physicians and some health departments. In 1999 the Food and Drug Administration approved the first home test for HCV. The test kit, called "Hepatitis C Check," is available from the Home Access Health Company. The test is accurate if it has been at least 6 months since the possible exposure to HCV.

HIV/HCV Co-Infection

Many people who become infected with HIV from injecting drug use are already infected with HCV. Some estimate that 40% of HIV-infected people in the United States are also infected with HCV. People who are co-infected with both viruses and have immune system impairment may progress faster to serious, chronic, or fatal liver damage. Most new HCV infections in the United States are among injecting drug users. The majority of hemophiliacs who received blood products contaminated with HIV also are infected with HCV.

Treating HIV in someone with HCV may be complicated because many of the medicines that are used to treat HIV may damage the liver; however, treatment for co-infection is possible in some cases with close physician supervision.

Comparison Chart of HIV, HBV, and HCV

Transmission by	HIV	HBV	HCV
Blood	Yes	Yes	Yes
Semen	Yes	Yes	Rarely (more likely if blood present)
Vaginal fluid	Yes	Yes	Rarely (more likely if blood present)
Breast milk	Yes	No (may be transmitted if blood is present)	No (may be transmitted if blood is present)
Saliva	No	No	No
Target in the body	Immune System	Liver	Liver
Risk of infection after needlestick exposure to infected blood	0.5%	1–31%	2–3%
Vaccine available?	No	Yes	No

For more information on Hepatitis B or C, go to the CDC hepatitis website, at <http://www.cdc.gov/hepatitis/> or call the Hepatitis Hotline, at 1-888-4HEPCDC (1-888-443-7232). The American Liver Foundation's website is <http://www.liverfoundation.org/> and the website for the Immunization Action Coalition is <http://www.immunize.org>.

Part V: Legal and Ethical Issues

HIV and AIDS Are Reportable Conditions

As noted earlier, AIDS and HIV are reportable conditions in Washington State, by statute WAC 246-101. AIDS (medically diagnosed) and symptomatic HIV infection have been reportable conditions in Washington since 1984 and 1993 respectively. In 1999, asymptomatic HIV infection also became reportable.

Reporting of HIV and AIDS cases assists local and state officials in tracking the epidemic. It also allows for effective planning and intervention to be provided in the effort to reduce the transmission of HIV to other people.

Did you know. . .

In the case of HIV or AIDS, **reportable** means that providers who diagnose a person must submit a confidential case report to the local health jurisdiction within 3 days.

Anonymous Tests and Reporting

Positive HIV results obtained through anonymous testing are **not** reportable. However, once a patient with positive results seeks medical care for conditions related to HIV or AIDS, the provider is required to report the case to the local health department.

Spousal Notification

Federal Public Law 104–146 (1996) requires that states take action to require that a "good faith effort" be made to notify all spouses of HIV-infected persons. A **spouse** is defined as anyone who is or has been the marriage partner of an HIV-infected individual within 10 years prior to the HIV diagnosis.

Notification means that individuals testing positive will be counseled about the importance of notifying spouses and partners and will be given the choice to notify, to allow the healthcare provider to notify, or to refer to the local health jurisdiction for assistance in notifying the spouse.

Confidentiality

All medical records are confidential and must be maintained in a manner that protects that confidentiality. Special requirements regarding HIV and AIDS are found in WAC 246-101 and RCW 70.24.105.

Confidentiality of medical information means that a person's medical information (including HIV testing and HIV results) may not be disclosed to anyone unless the individual signs a release-of-information form. However, there are exceptions to this. Medical information can be disclosed under certain circumstances, including:

- When it is given from one healthcare provider to another healthcare provider for related ongoing medical care of the patient
- In a life or death emergency
- To a third-party payer (insurance provider)
- In reporting notifiable conditions to the local health jurisdiction or the DOH

Violation of the above-mentioned laws is a misdemeanor and may result in civil liability actions for reckless or intentional disclosure up to \$10,000 or actual damages, whichever is greater. It is the responsibility of the county's health officer to investigate potential breaches of confidentiality of HIV identifying information and report them to the DOH.

Additional Confidentiality Protections

Some areas of the medical record have additional confidentiality requirements because disclosure of the information to the wrong person or agency could mean additional harm to the patient. It has been determined that there exists a level of prejudice, fear, and discrimination directed at people with these medical conditions. Therefore, there is a balance between civil protection and information access.

Disability and Discrimination

People with AIDS and HIV are also protected by federal law under Title II of the Americans with Disability Act of 1990 (ADA) and Section 504 of the Federal Rehabilitation Act of 1973, as amended. In Washington State, the Washington Law Against Discrimination (WLAD) regulates "disabled" status and explicitly prohibits discrimination on the basis of HIV and hepatitis C infection. The WLAD is enforced by the Washington State Human Rights Commission (see RCW 49.60.174).

Discrimination

Persons with HIV infection and/or AIDS who feel discriminated against on the basis of their disease may file a complaint with the Office for Civil Rights (OCR) of the U.S. Department of Health and Human Services, or the Washington State Human Rights Commission (WSHRC).

WSHRC jurisdiction information can be found on its website at <http://www.hum.wa.gov>. The WSHRC does not investigate anonymous complaints, and may have to release a complaint under the state's Public Disclosure Act. In certain circumstances, OCR will not disclose a complainant's identity.

Disability

HIV infection and AIDS are medical conditions that are considered disabilities under the Washington State Law Against Discrimination (RCW 49.60) and the federal Americans with Disability Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973.

These laws mean that it is illegal to discriminate against people who have AIDS or are HIV infected, on the basis of their medical condition. It is also illegal to discriminate against someone who is "believed" to have AIDS or HIV infection, even though that person is not, in fact, infected. The areas covered in the law are:

- Employment
- Rental, purchase or sale of apartment, house, or real estate
- Places of public accommodation (restaurants, theaters)
- Healthcare, legal services, home repairs, and other personal services available to the general public
- Applying for a loan or credit card, or other credit transaction
- Certain insurance transactions

Did you know. . .

Federal and state jurisdictions differ in approaches to disability.

The laws also protect HIV-infected and AIDS-diagnosed people from employment discrimination. Employers may not discriminate against persons with HIV infections or AIDS in:

- Employment
- Recruitment
- Hiring
- Transfers
- Layoffs
- Terminations
- Rate of pay
- Job assignments
- Leaves of absence, sick leave, any other leave or fringe benefits available by virtue of employment

Did you know. . .

State and federal laws do not cover all employers. For example, state law does not cover employers with fewer than eight employees, religiously controlled non-profits, and Indian tribes.

Discrimination-Free Environment

Employers are required to provide and maintain a working environment free of discrimination. They must assure that no harassment, intimidation, or adverse action or personnel distinction is made in terms and conditions of employment based on HIV status.

If a worksite situation develops that poses the threat of discrimination, it is best practice for the employer to provide education and supervision to employees in order to end harassment, the use of slurs, or intimidation. An employer should promptly investigate allegations of discrimination, take appropriate action, and **not** retaliate against the person who complained.

If someone is in a situation in which they feel they are being discriminated against, they should first document the discrimination, speak with their supervisor, and follow the entity's internal process to file a discrimination charge. However, it is not necessary to follow an internal grievance process. If these remedies do not work, a person should contact the Office for Civil Rights or the Washington State Human Rights Commission. An aggrieved person can also file directly in state court. A complaint must be filed within 180 days of the alleged discriminatory incident.

Reasonable Accommodation

Employers are responsible for providing reasonable worksite accommodations that will enable a qualified disabled employee or job applicant to perform the essential tasks of the particular job.

Reasonable accommodation means modifications to a worksite or job, in the context of the entire employer's operation, such as:

- Providing special equipment
- Altering the work environment
- Allowing flex-time
- Providing frequent rest breaks
- Allowing the person to work at home (telecommute)
- Restructuring the job

An employee with a disability must self-identify and request a reasonable accommodation. The employer must engage in an interactive process with the requestor. The reasonable accommodation grant may not be exactly the same one as requested by the employee, but one that is equally effective. The employer does not have to change the essential nature of its work, or engage in undue hardship or heavy administrative burdens. The essential functions of the job must be accomplished, with or without reasonable accommodations.

Potentially Prejudicial Information

When a person goes for a job interview or is hired, it is best practice for an employer to refrain from asking questions directed at the perception or presence of HIV infection or AIDS unless the employer has obtained a "bona fide occupational qualification" (BFOQ) from the Washington State Human Rights Commission (RCW 49.60.172 and WAC 246-100-204).

It is best practice for an employer to refrain from asking "lifestyle" questions, such as inquiring about an applicant's religion, living arrangements, sexual orientation, or gender identity.

Note: Chapter 49.60 RCW, the Washington Law Against Discrimination, prohibits discrimination based on age, creed, religion, race, color, national origin, sex, sexual orientation and gender identity, HIV and hepatitis C status, whistleblower retaliation, marital status (housing and employment), families with children (housing), or the presence of any sensory, mental, or physical disability or the use of a trained dog guide or service.

Exceptions to the above are applicants for the U.S. military, the Peace Corps, the Job Corps, and persons applying for U.S. citizenship under federal law, which supersedes state law.

Behaviors Endangering the Public Health

Washington State law (RCW 70.24) and rules (WAC 246-100 and 246-101) give state and local health officers the authority and responsibility to carry out certain measures to protect the public health from the spread of STDs, including HIV.

Authorities and Responsibilities of Health Officers

The local health officer is the physician hired to direct the operations of the local county's health department or health district. Included in the broad responsibilities of the health officer is the authority to:

- Interview persons infected with an STD.
- Notify sexual or needle-sharing partners of exposure to disease.
- Order persons suspected of being infected to receive examination, testing, counseling, or treatment.
- Issue orders to cease and desist from specific conduct that endangers the public health of others.

Court enforcement of these orders can be sought. State law delineates the standards that must be met before action by the health officer may be taken. For HIV, Washington state law permits an additional step—the detention of an HIV-infected person who continues to endanger the health of others. After all less-restrictive measures have been exhausted, the law allows for a person to be detained for periods up to 90 days after appropriate hearings and rulings by a court. This detention must include counseling.

Reporting Non-Compliance

By state law and rule, healthcare providers are required to provide instruction on infection control measures to the patient who is diagnosed with a communicable disease. They are also required to report certain information to the local health officer where there are either impediments to or refusal to comply with prescribed infection control measures.

When a healthcare provider has knowledge that a specific patient is failing to comply with prescribed infection control measures (eg, acquisition of a new STD, sex without disclosure of HIV status to sexual partners, failure to disclose HIV status to needle-sharing partners, donating or selling HIV-infected blood) they should contact the local public health officer to discuss the circumstances of the case and to determine if the name of the person should be reported for investigation and follow-up.

Case Investigation

The health officer or other authorized representative will investigate the case if credible evidence exists that an HIV-infected person is engaging in conduct endangering the public health. Other laws and regulations concern endangering behaviors as well as occupational exposures. These may be specific to professions and to the jurisdictions of public health officers. For more specific information, talk with public health officials in your area, call the Washington State Hotline at 1-800-272-2437, or ask a knowledgeable person to provide the information to your group.

Part VI: Psychosocial Issues

Washington State has a system 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 persons 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 living with HIV. To find a case manager, contact the HIV/AIDS program in your county's health department or district, or call the Washington State DOH at 1-877-376-9316.

Difficult Realities

Persons with HIV and their families and friends face a multitude of difficult realities.

- Even with the advent of antiretroviral (ARV) drugs, persons 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 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, tornadoes), and to battle fatigue described by soldiers.

Losses

HIV produces many losses, including loss of:

- Physical strength and abilities
- Mental abilities/confusion
- Income and savings
- Health insurance
- Job/work
- Housing, personal possessions, including pets
- Emotional support from family, friends, co-workers, religious and social institutions
- Self-sufficiency and privacy
- Social contacts and roles
- Self esteem

People experiencing multiple losses may feel:

- Guilt
- Grief
- Helplessness
- Rage
- Numbness

Physical weakness and pain can diminish a person's ability to cope with psychological and social stresses.

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. Call the Washington State DOH at 1-877-376-9316 if you or someone you know needs help paying for HIV care and medications.

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 1-800-784-2433 or 1-800-273-8255.

Caregivers

Often feelings experienced by the caregiver will mirror those of the patient; these can include 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.

Stages of Grief

Grief has been described in a variety of forms. It may be best understood as a process that doesn't involve a straight line. People do not move predictably step-by-step through the various stages of their grieving, but progress at their own speed. There seem to be discreet phases of grief, including:

- Shock and numbing
- Yearning and searching
- Disorganization and despair
- Some degree of reorganization

The length of time it takes to move between these stages is determined by individuals and their values and cultural norms. In **uncomplicated grief**, an individual is able to move through these stages and come out of the grieving process.

Complicated grief is described as an exaggeration or distortion of the normal process of grieving. People experiencing multiple losses are more at risk for complications. If an individual has been impacted by multiple deaths, it may be difficult for them to reorganize (move on) with the process.

Caregiver Issues

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.

Things to Do

- **Do** meet with a support person, group, or counselor on a regular basis to discuss your experiences and feelings.
- **Do** set limits in caregiving time and responsibility, and stick to those limits.
- **Do** allow yourself to have questions. Let "not knowing" be OK.
- **Do** get the information and support you deserve and need.
- **Do** discuss with your employer ways to reduce stress and burnout.
- **Do** remember that Standard Precautions are for the patient's health and welfare, as well as your own.

Things to Avoid

- **Don't** isolate yourself.
- **Don't** try to be all things to all people.
- **Don't** expect to have all the answers.
- **Don't** deny your own fears about AIDS or dying.
- **Don't** continue to work in an area where you can't cope.
- **Don't** dismiss Standard Precautions because you know the patient.

There are other issues for people who share a home with, or provide home care for, persons with HIV or AIDS. Please look again at the section on Transmission and Infection Control for guidelines around safe home care.

Special Populations

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, women, and people of color. The following information details how these different populations may be uniquely affected by the AIDS epidemic.

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.

Additionally, there are the issues with HIV-negative men who have sex with men. Most of the attention, resources, and services are focused on HIV-positive gay men. As with any behavior change, people can become "tired" of safer sex messages, and may make choices that place them at risk. Some may feel that HIV infection is inevitable (although it is not) and purposely engage in unprotected sex.

Men who have sex with both men and women (who do not exclusively self-identify as gay) face additional challenges. It is more difficult to reach men who do not identify as being gay with HIV prevention efforts and activities. Bisexual men face many similar challenges as gay men but may not have the social and community resources they need.

Injecting Drug Users

American society also has issues with illegal drug use and with marginalized individuals such as those in poverty and the homeless. 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 like syringe exchange programs, have been proven to reduce the transmission of bloodborne pathogens like HIV, HBV, and HCV. These programs are controversial because some people believe that providing clean needles and a place to exchange used needles constitutes "approval" of injection drug use.

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 injecting drug users. The desire to stop using illegal drugs may be very far apart from the ability to stop. The reality about inpatient treatment facilities is that while there is a large demand for spaces very few are available. Many substance abusers are placed on waiting lists when they want treatment, and by the time there is a place for them, they may be lost to follow-up.

People with Hemophilia

Hemophiliacs lack the ability to produce certain blood clotting factors. Before the advent of anti-hemophilic factor concentrates ("factor VIII" or "factor IX," which are clotting material pooled out of donated blood plasma), hemophiliacs could bleed to death. These concentrates allowed hemophiliacs to receive injections of the clotting factors that they lacked, which in turn allowed them to lead relatively normal lives.

Unfortunately, because the raw materials for these concentrates came from donated blood, 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 these products. There is anger within this community because there is evidence to show 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 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 home towns.

Women with HIV

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. Women who are infected with HIV, or who have family members who have HIV, face some unique challenges.

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 may postpone taking medication, or going to medical appointments, in order to care for their children or other family members. 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 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.

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.

People of Color

African Americans and Hispanics have disproportionately higher rates of AIDS in the United States, despite the fact that there are no biological 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.

Resources

Global Resources

Joint United Nations Programme on HIV/AIDS (UNAIDS)

<http://www.unaids.org/en/>

KNOW Curriculum Sources

Washington State Department of Health

HIV Prevention and Education Services

<http://www.doh.wa.gov/cfh/hiv.htm>

1-800-272-2437

Washington State Department of Labor and Industries

<http://www.lni.wa.gov>

1-800-423-7233

Centers for Disease Control and Prevention

www.cdc.gov

1-404-639-3311

National Resources

National HIV/AIDS and STD Information
 cdcinfo@cdc.gov
 (English and Spanish, 24 hours)
 1-800-CDC-INFO (1-800-232-4636)
 TTY: 1-888-232-6348

National AIDS Information Clearinghouse
 1-800-458-5231

FDA approved test kit list:

<http://www.fda.gov/BiologicsBloodVaccines/BloodBloodProducts/ApprovedProducts/LicensedProductsBLAs/BloodDonorScreening/InfectiousDisease/UCM080466>

Washington State Resources

Washington State HIV Hotline
 1-800-272-2437

Washington State Regional AIDS Service Networks (AIDSNETs)

Since 1988, the AIDSNETs have served as local lead agencies for the planning and coordination of HIV services in Washington. Currently, the most populous county in each region serves as the lead county and coordinates with local health jurisdictions within the region to distribute HIV resources.

Engrossed House Bill (EHB) 2360, which goes into effect on January 1, 2011, eliminates the six regional AIDS service networks and directs the Department of Health (DOH) to fund HIV services directly—including testing and case management. For more information contact the DOH or visit the HIV Prevention section of the Washington State Department of Health website.

Until January 2011, resources and community-based organizations may be identified by contacting one of the AIDSNETs regional offices:

<p>Region 1 Spokane Regional Health District West 1101 College Ave Spokane, WA 99201-2095 1-509-324-1551</p>	<p>Region 2 Yakima Health District 1210 Ahtanum Ridge Dr Union Gap, WA 98903-1813 1-509-249-6503</p>	<p>Region 3 Snohomish Health District 3020 Rucker Ave, Ste 206 Everett, WA 98201 1-425-339-5211</p>
<p>Region 4 Public Health, Seattle and King County 400 Yesler Way, Ste 300 Seattle, WA 98104 1-206-296-4854</p>	<p>Region 5 Tacoma-Pierce County Health Department 3629 South D St, MS: 062 Tacoma, WA 98418-6813 1-253-798-4791</p>	<p>Region 6 Clark County Public Health 1601 Fourth Plain Blvd PO Box 9825 Vancouver, WA 98666 1-360-397-8086</p>

References

- Centers for Disease Control & Prevention (CDC). (2010). HIV in the United States: An Overview, CDC HIV/AIDS Facts, June 2010. Retrieved July 12, 2010 from http://cdc.gov/hiv/topics/surveillance/resources/factsheets/pdf/us_overview.pdf.
- Centers for Disease Control & Prevention (CDC). (2008, September 5). 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 — United States, 2008. *MMWR* 57, RR-10. Retrieved July 14, 2010 from <http://www.cdc.gov/mmwr/PDF/rr/rr5710.pdf>.
- Conway S, Bartlett JG. (2003). Graph found in PowerPoint presentation titled “Window Period: Untreated Clinical Course,” p. 40. Adapted. Retrieved August 4, 2010. To download presentation, go to http://www.google.com/search?hl=en&source=hp&q=%22HIV+Pathogenesis+and+Natural+Course+of+the+Disease%22&btnG=Google+Search&aq=f&aqi=&aql=&oq=&gs_rfai= and click on the top item.
- DeNoon DJ. (2010.) HIV Vaccine Secret Found in ‘Elite Controllers’: Genetic Mutation Allows Some People to Never Get AIDS. *WebMD Health News*. Retrieved June 17, 2010 from <http://www.webmd.com/hiv-aids/news/20100507/hiv-vaccine-secret-found-in-elite-controllers>.
- Global HIV Prevention Working Group. (2010). *Global HIV Prevention Progress Report Card, Executive Summary*. Retrieved August 2, 2010 from <http://www.globalhivprevention.org/pdfs/FINAL%20Executive%20Summary.pdf>.
- Global HIV Prevention Working Group. (2008). Behavior Change and HIV Prevention: (Re)Considerations for the 21st Century. Available from http://www.globalhivprevention.org/pdfs/PWG_behavior%20report_FINAL.pdf. Also available in CE format from ATrain Education at <http://www.ATrainceu.com>.
- The Joint Commission. (2009). Measuring Hand Hygiene Adherence: Overcoming the Challenges. Retrieved July 14, 2010 from http://www.jointcommission.org/PatientSafety/InfectionControl/hh_monograph.htm.
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2010.) International HIV Vaccine Day Message from UNAIDS Executive Director Mr. Michel Sidibé, May 18, 2010. Retrieved July 15, 2010 from http://www.unaids.org/en/KnowledgeCentre/Resources/PressCentre/PressReleases/2010/20100518_PS_IntVaccineDay.asp.
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2008). Report on the global AIDS epidemic 2008. Executive Summary. Retrieved June 17, 2010 from http://www.unaids.org/en/KnowledgeCentre/HIVData/GlobalReport/2008/2008_Global_report.asp.
- Ledford, H. (2010). Souped-up antibody fends off HIV: Targeted search yields proteins that neutralize nearly all HIV strains. *Nature News*. Retrieved July 15, 2010 from <http://www.nature.com/news/2010/100708/full/news.2010.341.html#B1>.
- Washington State Department of Health. (2007). *KNOW HIV Prevention Education, 2007 Revised Edition: An HIV and AIDS Curriculum Manual for Healthcare Facility Employees*. Retrieved June 7, 2010 from http://www.doh.wa.gov/CFH/HIV_AIDS/Prev_Edu/training_curriculum/KNOW_2007.pdf.
- Washington State Department of Health (DOH). (2009). *World TB Day: March 24, 2009: A Glance at Washington’s Tuberculosis Epidemic*. Retrieved July 15, 2010 from <http://www.doh.wa.gov/cfh/TB/publications/WorldTBDay2009.pdf>.

Post Test

Use the Answer Sheet following the test to record your answers.

1. HIV:
 - a. Immediately destroys the body's ability to fight infection and disease.
 - b. Causes the body's immune system to attack body organs.
 - c. Is the same as AIDS.
 - d. Progressively destroys the body's ability to fight infection and disease.
2. A diagnosis of AIDS means the:
 - a. Person does not have HIV.
 - b. Person is in the beginning stages of the disease.
 - c. Person must also have HIV.
 - d. Body has an increased ability to fight infection and disease.
3. HIV:
 - a. Is a virus that infects T-helper lymphocytes that regulate the body's immune response.
 - b. Can be transmitted by casual contact.
 - c. Attacks the body's red blood cells resulting in a decline in the immune system.
 - d. Increases antibody production by T-helper lymphocytes.
4. Primary HIV infection is:
 - a. The period beginning when AIDS is diagnosed.
 - b. The time when antibodies are first detected.
 - c. The first week or two after infection when the body has not yet produced antibodies.
 - d. Referred to as the window period.
5. The window period:
 - a. Signals a move into the first stage of AIDS.
 - b. Manifests symptoms of the disease for the first time.
 - c. Ends with seroconversion, the point when the HIV antibody test becomes positive.
 - d. Is not an infectious stage because there are no detectable antibodies.
6. During the asymptomatic stage of HIV infection:
 - a. An untreated person can look and feel healthy, sometimes for many years.
 - b. The virus can be passed through unprotected sex, but not to a baby during pregnancy.
 - c. The virus is in the dormant stage and is not replicating.
 - d. People look unhealthy and experience frequent illnesses.
7. The HIV virus originated in chimpanzees native to west equatorial Africa and spread to humans through hunters exposed to infected blood.
 - a. True
 - b. False
8. Globally, the annual number of AIDS deaths declined for the first time in 2007.
 - a. True
 - b. False
9. Which one of the following is true in Washington about reporting of AIDS and HIV?
 - a. Only diagnoses of AIDS are reportable.
 - b. All AIDS and HIV diagnoses are reportable.
 - c. Both AIDS and symptomatic HIV cases have been reportable since 1980.
 - d. Only diagnoses of symptomatic HIV are reportable.

10. Conditions for the transmission of HIV include:
 - a. Dispersal of droplets from an infected person with a cough.
 - b. Only casual contact with an infected person.
 - c. A genetic predisposition to HIV and a compromised immune system.
 - d. Access to the bloodstream of another person, sufficient dose of virus, and an HIV source.
11. Transmission of HIV can occur through: B
 - a. Transfusion of blood products currently used in the United States.
 - b. Unprotected anal, vaginal, or oral intercourse.
 - c. Antiviral drugs.
 - d. Donation of blood in the United States.
12. Viral load is:
 - a. A measure of the viability of the infectious agent.
 - b. How many antibodies are detectable in the bloodstream.
 - c. How much HIV is present in the bloodstream.
 - d. A measure of the virulence of the infectious agent.
13. Unprotected anal intercourse is considered to be the greatest sexual risk for transmitting HIV.
 - a. True.
 - b. False
14. An HIV-infected woman may transmit the virus to her baby during:
 - a. Pregnancy only.
 - b. Birth by C-section only.
 - c. Pregnancy, during the birth process, or following pregnancy by breastfeeding.
 - d. Birth or after the birth by breastfeeding, but not during pregnancy.
15. Co-infection of HIV with other STDs does not significantly increase the risk of HIV transmission.
 - a. True
 - b. False
16. Your risk of exposure to HIV is increased by:
 - a. Being around an infected person who is sneezing or coughing.
 - b. Sharing computers, telephones, or swimming pools with infected people.
 - c. Having multiple sexual partners.
 - d. Eating food in a restaurant prepared or served by an HIV-infected employee.
17. Behaviors that can reduce the risk of HIV infection include:
 - a. Use of natural-membrane condoms.
 - b. Use of latex or polyurethane condoms.
 - c. Use of any convenient lubricant like petroleum jelly or cooking oil.
 - d. Washing used needles with soap and water.
18. Employer responsibility for occupational exposure refers to:
 - a. Exposure to food served by an HIV-infected employee of a juice bar.
 - b. A specific eye, mouth, or other mucous membrane contact with blood or OPIM that results from the performance of an employee's duties.
 - c. Caring for a patient who has HIV.
 - d. Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of an employee's duties.

19. According to the CDC, the most common chronic bloodborne infection in the United States is:
 - a. HIV.
 - b. HCV.
 - c. HBV.
 - d. Syphilis.
20. All of the following body fluids have been linked to the transmission of HIV, HBV, and HCV except: D
 - a. Blood and blood products.
 - b. Saliva in dental procedures, which may contain blood.
 - c. Semen and vaginal secretions.
 - d. Sweat.
21. Urine, feces and vomitus are not considered OPIM unless visibly contaminated by blood.
 - a. True
 - b. False
22. An Exposure Control Plan (ECP) **does not** include:
 - a. An annual update of the plan.
 - b. Mandatory annual HIV testing for all employees with potential for occupational exposures.
 - c. The procedure for evaluating the circumstances surrounding exposure incidents.
 - d. A written exposure determination.
23. Washington state law mandates that bloodborne pathogens training for all employees with potential exposure to blood/OPIM:
 - a. Occur within a year of assignment to tasks where exposure may occur.
 - b. Occur prior to job assignment and every 5 years thereafter.
 - c. Occur prior to job assignment and at least annually thereafter.
 - d. Does not apply to nurses working in Washington State.
24. Standard Precautions:
 - a. Are implemented only when a patient has been diagnosed with AIDS or hepatitis C.
 - b. Must include the use of latex gloves.
 - c. Include PPEs such as masks and gloves but not protective eyewear and face shields.
 - d. Consider all body fluids, except sweat, to be potentially infectious.
25. 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 PPEs and upon leaving the work area.
26. Regulated waste:
 - a. May be flushed down toilets in specified areas.
 - b. Must be placed in closeable, leakproof containers or bags and color-coded or labeled as required by the law.
 - c. Includes chemical germicides and disinfectants.
 - d. Does not include items on which blood has dried.
27. Biohazard labels:
 - a. Must include a signal word/symbol or a message, but not both.
 - b. Must be readable from a minimum of two feet.
 - c. Are used to protect employees from hazardous biological exposure.
 - d. Need not be understood by housekeeping staff.
28. An example of an occupational exposure to a bloodborne pathogen is:

- a. Carrying a red-bagged urine specimen to the lab.
 - b. Taking the temperature of an HIV-infected patient.
 - c. A needlestick from any patient.
 - d. Assisting an HIV-infected patient to walk in the hallway.
29. 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.
30. 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 in place of washing.
31. Sharps injuries:
- a. Should be "milked" or squeezed to extract potential infectants.
 - b. Have a very high exposure risk.
 - c. Should be washed with soap and water.
 - d. Are not considered an occupational exposure.
32. Following HIV exposure, employees must:
- a. Call their personal physician to set up an appointment.
 - b. Report the incident to the person responsible for managing exposure immediately after cleansing exposed area.
 - c. Be assigned to another department until the incident is fully investigated.
 - d. "Milk" the wound if it is a needlestick.
33. Post-exposure prophylaxis (PEP):
- a. Should begin immediately, preferably within hours of exposure.
 - b. Is the same for HIV, HBV, and HCV.
 - c. Involves taking medications for two weeks.
 - d. Has no known side effects.
34. When caring for an HIV-infected person at home:
- a. It is not necessary to take precautions with blood or OPIM.
 - b. Clothes or towels that are contaminated with blood or OPIM should be cleaned and disinfected before further use.
 - c. Urinals and bedpans should be disposed of after each use.
 - d. Hands should be washed before contact with pets to prevent transmission of HIV to the animals.
35. Initial HIV testing:
- a. Can be done quickly and accurately using kits available from the drugstore.
 - b. Can use an infected person's blood or sweat to obtain accurate results.
 - c. With a "reactive" result needs no further follow-up.
 - d. With a "reactive" result must be confirmed with a Western Blot test.

36. A negative HIV test result means this person:
- Is immune to HIV and can never become infected.
 - Is infected with HIV and will remain infected for life.
 - Has never been exposed to HIV.
 - May have been exposed to HIV but not yet produced enough antibodies to be detected by the test.
37. Positive HIV test results mean this person:
- Is infected with HIV and can spread the virus to others.
 - Cannot spread the virus until symptoms of AIDS develop.
 - Can be cured with current antiviral drugs.
 - Does not have AIDS.
38. Seroconversion is:
- A formerly negative HIV test that converts to a positive test.
 - The point at which HIV antibodies are detectable in the blood.
 - The only cause of indeterminate results.
 - The stage of HIV infection when AIDS symptoms develop.
39. HIV counseling in Washington State:
- Is offered only to those people who test positive for HIV.
 - Is offered only to pregnant women who may be at risk for HIV.
 - Must be offered to any client at risk for HIV or who requests counseling.
 - Must be given by the person conducting the HIV testing.
40. The natural history of untreated HIV infection is:
- Asymptomatic HIV infection, seroconversion, primary HIV infection, AIDS, and symptomatic HIV infection.
 - Viral transmission, seroconversion, primary HIV infection, symptomatic HIV infection, asymptomatic HIV infection, and AIDS.
 - Viral transmission, seroconversion, asymptomatic HIV infection, symptomatic HIV infection, and AIDS.
 - Viral transmission, primary HIV infection, seroconversion, asymptomatic HIV infection, symptomatic HIV infection, and AIDS.
41. Symptomatic HIV infection commonly includes:
- Persistent low-grade fever, pronounced weight-loss not due to dieting, and prostate cancer.
 - Persistent headaches, difficulty recovering from colds and flu, and pronounced weight loss not due to dieting.
 - Difficulty recovering from colds and the flu, HIV-associated dementia, and recurrent vaginal yeast infections in women.
 - Thrush, persistent headaches, pronounced weight-loss not due to dieting, and appendicitis.
42. HIV infection in children:
- Has the same disease progression as adults.
 - Has been reduced by using AZT in HIV-infected pregnant women.
 - Does not usually cause symptoms until puberty.
 - Causes developmental delay when treated with drugs too early.
43. HAART therapy:
- Is a newly discovered antiretroviral drug.
 - Is a cure for HIV/AIDS.
 - Decreases viral load to a point where patients are no longer contagious.
 - Is the primary reason for the reduction of deaths from AIDS in the United States.

44. STDs:
- Are only caused by viruses.
 - Can increase HIV viral shedding.
 - Are treated with a 9-month course of Isoniazid.
 - Are not transmitted from mother to baby during childbirth.
45. HBV:
- Can be transmitted by casual contact or sharing drinking glasses.
 - Can be prevented in more than 90% of people who receive the HBV vaccine.
 - Can be detected through Pap tests in women.
 - Cannot be transmitted by using the toothbrush or razor of an infected person.
46. People infected with Hepatitis C (HCV):
- May have few or no symptoms for decades.
 - Can still donate blood.
 - Rarely develop chronic liver disease.
 - Rarely develop chronic long-term infection.
47. Positive HIV test results obtained through anonymous testing are not reportable to the local health department until the infected person seeks healthcare for conditions related to HIV or AIDS.
- True
 - False
48. HIV testing and results may be disclosed:
- From one healthcare provider to another for related medical care of the patient.
 - By a good-faith effort to notify all spouses with or without the consent of the infected person.
 - Only to the manager of an HIV-infected person in the workplace.
 - When positive HIV results are obtained through anonymous testing.
49. According to Washington State law, HIV-infected people:
- Do not have to be granted "reasonable accommodations" in the workplace unless ordered by a health officer.
 - Can be detained by a health officer if they engage in activities that endanger the health of others.
 - Are not covered by the Americans with Disabilities Act.
 - Must be isolated from their co-workers.
50. Chronic grief refers to:
- The fear of the unknown that many HIV sufferers encounter.
 - The process of moving through the stages of grief.
 - The psychological symptom of AIDS-related brain infection.
 - The effect of cumulative multiple loss, or grief saturation.
51. The group with the highest rate of new HIV infection in the United States and worldwide is:
- Hispanic children
 - Gay men
 - American Indians
 - Women

(Answer sheet on next page)

Answer Sheet

Washington: HIV/AIDS, 7 units

Name (Please print your name): _____

Date: _____

Passing score is 80%

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

41. _____

42. _____

43. _____

44. _____

45. _____

46. _____

47. _____

48. _____

49. _____

50. _____

51. _____

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

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

a. Discuss the etiology and epidemiology of HIV in Washington State and the United States.

5 4 3 2 1

b. Describe transmission and infection control precautions for prevention of HIV transmission.

5 4 3 2 1

c. Outline the common testing and counseling requirements for HIV-infected individuals.

5 4 3 2 1

d. Characterize the main clinical manifestations and treatment options of HIV/AIDS.

5 4 3 2 1

e. Identify the legal and ethical issues associated with HIV in Washington State.

5 4 3 2 1

f. Discuss the main psychosocial issues facing HIV-infected persons and their caregivers.

5 4 3 2 1

*2. The course was written in a way that facilitated my learning.

5 4 3 2 1

*3. This course was free from commercial bias.

5 4 3 2 1

*4. The course met my continuing education needs.

5 4 3 2 1

*5. The material presented was supported by evidence.

5 4 3 2 1

*6. The author avoided the use of anecdotal information as the main source of material.

5 4 3 2 1

*7. The course was free of product promotion.

Yes No**

** If you answered no, please answer #8.

8. Was product promotion the sole purpose of the presentation?

Yes No

* 9. It took me 60 minutes per contact hour to complete the course, test, and evaluation.

Yes No**

** If your answer was no, how long did it take? _____

10. My professional educational level is (check one):

Nursing

Nurse Aide LVN/LPN RN (diploma) RN (AD) BSN MSN
 Nurse Practitioner/Advanced Practice Nurse PhD/DNSc

Therapy

OT Aide COTA OT MOT OTD
 PT Aide PTA PT MPT MSPT DPT PhD

Other (please specify): _____

(continued on next page)

11. I heard about ATrain Education from:

- | | |
|--|---|
| <input type="checkbox"/> Search engine | <input type="checkbox"/> Advertisement |
| <input type="checkbox"/> Government or Board website | <input type="checkbox"/> I am a returning customer |
| <input type="checkbox"/> Friend | <input type="checkbox"/> Publication (Magazine, etc.) |
| <input type="checkbox"/> Other _____ | |

12. I found the ATrainCEU.com website easy to use:

- Yes No

13. Comments or suggestions (optional):

(continued on next page)

Registration Information

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

* Name: _____

* Address: _____

* City: _____ State: _____ Zip: _____

* Phone: _____

* Professional Designation: _____

* License Number and State: _____

Please email my certificate: Yes No

Email (required if you want your certificate sent by email): _____

(Note: If you request an email certificate, we will not send a copy of your 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**.

7.0 contact hours - \$35

Credit card information:

Name _____

Address (if different from above): _____ City: _____

_____ State: _____ Zip: _____

Card type: Visa MC American Express Discover

Card number _____ CVS # _____

Expiration date _____

Test Completion and Mailing Instructions

1. Complete all forms:

- Answer Sheet
- Evaluation Learning Activity
- Registration Form (this page)

2. If you are **paying by check**, prepare a check for \$35 made out to ATrain Education, Inc.

3. Mail the completed forms and your payment to:

ATrain Education, Inc
5171 Ridgewood Rd
Willits, CA 95490

When we receive your forms and payment, we will mail (or email, if you request it) your certificate of completion. If you have any questions or concerns, please call or contact us at Sharon@ATrainCEU.com. Thanks for taking the ATrain!