HIV 101
A Self-Study Guide

Produced by the



Louisiana Office of Public Health
HIV/AIDS Program

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Introduction

Twenty-five years have passed since HIV/AIDS has emerged into the public's awareness. The disease has now been labeled a pandemic, meaning that it has infected people on a global scale. Working in the field of HIV/AIDS is challenging, controversial, and gratifying. For some, it is a life enhancing and transformative experience. The message is in assisting the public in areas of prevention, counseling, and testing, while maintaining hope that a cure for the disease is found. Every effort counts.

This self–study guide was developed to provide the basic facts about HIV/AIDS in preparation for in–depth concentration in a specific area of practice, such as outreach or prevention counseling. For some it may serve as an introduction to the topic and for others, a refresher. In either case, this manual can be utilized as a general resource guide that provides quick accessibility to the basic facts about HIV/AIDS.

In this HIV/AIDS 101 Manual, you will find:

- A general introduction;
- Basic HIV/AIDS terminology;
- The origin of HIV/AIDS;
- Transmission of HIV;
- Epidemiology history of HIV;
- The HIV/AIDS epidemic in Louisiana;
- HIV Prevention and risk reduction;
- HIV antibody testing;
- HIV and STIs;
- A glossary of related terms.

In some sections, you will find activities that will help you review factual information and will allow integration of the concepts you have learned.

At the conclusion of the guide is a self–test that covers all topics discussed. This short test can be used as a final review to determine the areas in which additional study may be needed.

HIV and AIDS are acronyms that are often used interchangeably and incorrectly. HIV refers to the retroviral infection that causes HIV disease. HIV disease progresses to AIDS, which is the later stage of the illness where the person experiences more physical symptoms.

What do HIV and AIDS stand for?

H uman: human species

I mmuno–deficiency: lacking resistance to disease

V irus: a submicroscopic parasite that invades living cells for replication

A cquired: produced from factors outside of the body

I mmune: resistant to disease

D eficiency: lacking, not properly functioning

S yndrome: a cluster of symptoms occurring simultaneously

HIV disease is a severe immune system disease resulting from a chronic and incurable retroviral infection, which leads to immuno–suppression.

AIDS is stage four of the HIV disease and is characterized by a diminished T -cell count, which increases susceptibility to secondary opportunistic bacterial, fungal, parasitic and viral infections that would normally be destroyed by the cells of a healthy immune system. AIDS is considered to be the final stage of the disease.

The following terms will be used throughout this guide. If you see other terms that you do not recognize, please consult the glossary at the end.

Antibody– a substance in the blood formed in response to invading infectious agents like viruses and bacteria; one of the body's defense mechanisms against disease.

Immuno–Suppression - diminished capacity of the immune system to resist infectious agents.

Replicate - the process by which infectious viral agents reproduce and propagate.

Pathogenesis – the developmental course of a disease, in which the disease origin, life cycle, and symptoms are defined.

Opportunistic Infection (OIs) – any infection that takes advantage of an immuno– suppressed system.

Retrovirus – virus containing single-stranded RNA as its genetic material and which produces a complementary strand of DNA by action of enzyme reverse transcriptase.

Serostatus – the absence or presence of HIV antibodies in a person's blood serum.

Seroconversion – the development of detectable HIV antibodies in the serum as a result of HIV infection.
STI – an acronym for sexually transmitted infections; chlamydia, gonorrhea, syphilis, hepatitis, and HIV are sexually transmitted infections.

Susceptibility – capacity to receive or contract an infectious agent.

T– Cell – a type of white blood cell that assists in immune system modulation and regulation; also known as T–4 Lymphocyte, CD4 or T– helper cell.

Viral Load – The concentration levels of viral counts in blood or tissue.

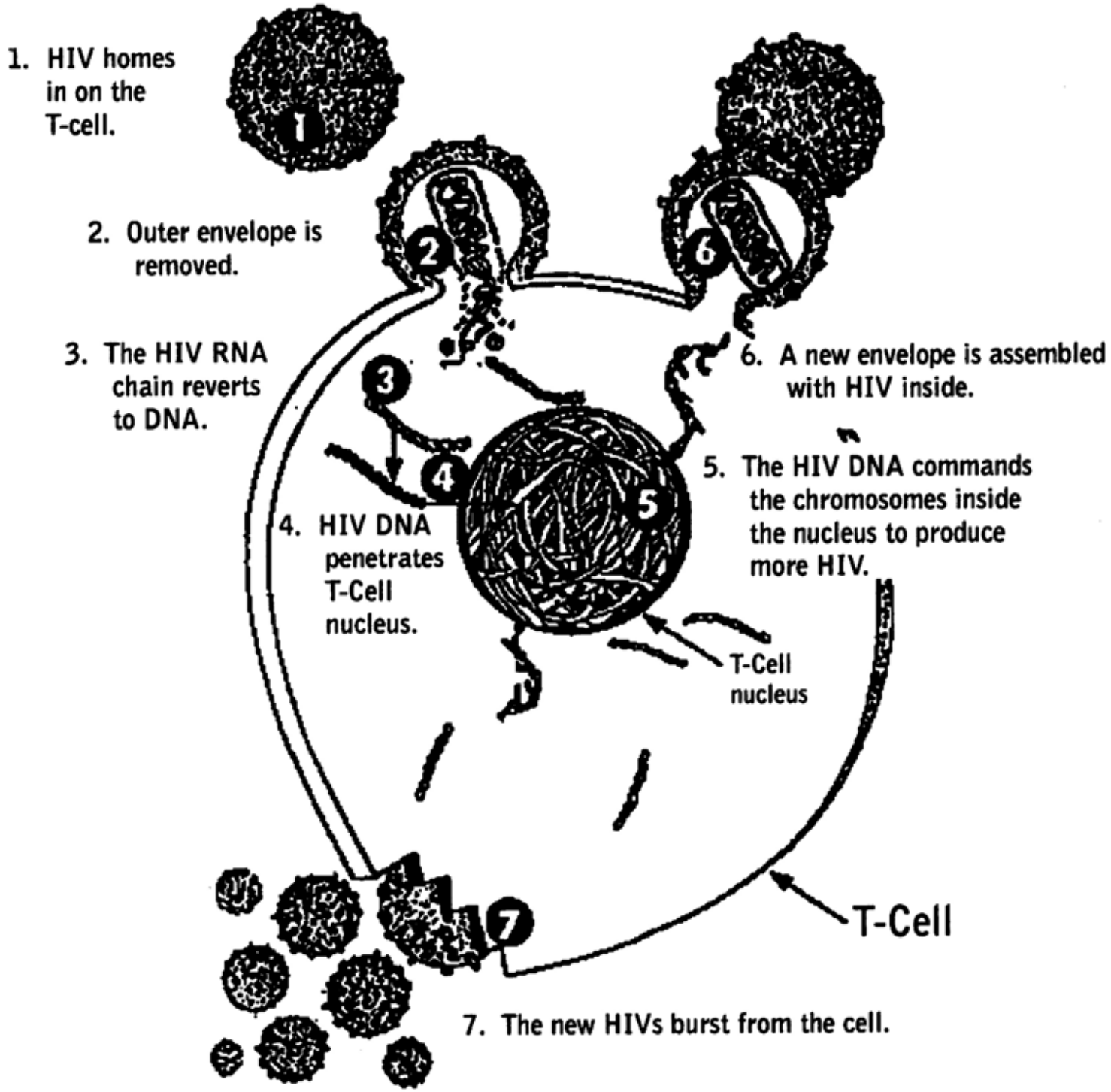
THE IMMUNE SYSTEM AND HIV

The immune system is the human body's natural defense against infectious agents. It consists of specialized cells that comprise differing stages of communication, modulation, regulation and protection. The immune system is integrated with the central nervous system and the endocrine system. These complementary systems must be healthy to ensure effective functioning of the immune system.

HIV is a retrovirus, which is a virus that replicates by enzyme reverse transcriptase. Replication is the viral process of reproduction. Like other viruses, HIV contains genetic information for replication, but it lacks the necessary self–regulated resources to do so on its own. Upon infection, the retrovirus usually migrates to the lymphatic system, which is dense in immune system cells. HIV targets a specific immune cell – the T-Helper white blood cell. HIV enters the T-cell, known as the host cell, and takes over the host cell's genetic resources for replication. During the active infection cycle, HIV makes multiple copies of the parent retrovirus, eventually destroying the host T-cell. The cell wall of the host T-cell actually bursts, resulting in cellular death. The cycle is then repeated.

As more and more T-cells are destroyed by HIV, the immune system becomes compromised, resulting in immuno-suppression. There is an increased susceptibility to secondary opportunistic infections (OIs). Eventually the individual succumbs to secondary OIs, unless pathogenesis of the retrovirus is slowed by medical treatment. While the replication of the retrovirus may be halted by the administration of pharmaceutical therapies, it eventually develops into a drug resistant strain through a process known as mutation. This is one of the main reasons why a cure or vaccine for HIV has yet to be developed.

REPLICATION OF HIV



THE ORIGIN OF HIV/AIDS

The earliest known specimen that resembles contemporary strains of HIV was isolated from a blood sample belonging to an African sailor during the late 1950s. HIV is thought to have originated out of the former Congo region of Central Africa. Speculation as to where the HIV retrovirus emerged from has led many researchers to hypothesize that HIV was once a zoonotic disease, which eventually evolved to an infectious human disease. The animal carrier is thought to be a primate. HIV is a recombinant retrovirus, and has the ability to mutate and evolve its molecular structure. Researchers believe that the HIV retrovirus eventually mutated into a strain that was able to crossover from primates to humans. The modes of transmission responsible for this crossover are unknown, and can only be speculated upon.

Other researchers thought that HIV was initially a disease that was induced by using injection drugs. Due to many injection drug users presenting a positive HIV serostatus, early epidemiologist hypothesized that HIV was a direct result due to drug interactions within the body. However, injection drug use may be a mode of HIV transmission, not the cause of HIV.

Other hypotheses have explored the concepts that HIV was a human engineered disease, created for genocidal purposes. Some governments and agencies have spread false propaganda regarding these claims. It has been unproven that HIV was created by humans. However, this is still a popular belief, which is often charged by social inequities and politics. Another belief circulating is that HIV is not the cause of AIDS, and 'HIV Dissenters' argue that AIDS has other causes. In numerous, credible studies HIV has indeed been found to be the cause of AIDS. Go to www.niaid.nih.gov/factsheets/evidhiv.htm for evidence and more information.

TRANSMISSION OF HIV

In the initial stages of the HIV/AIDS epidemic, people often referred to "high risk groups". This term has the double standard of stigmatizing certain people and minimizing the risk to others. HIV transmission is not limited to certain groups of people; all ages, genders, ethnicities, and races are susceptible.

The HIV retrovirus does not survive in the external environment. It cannot be transmitted (spread from one person to another) by casual contact. Transmission of HIV occurs through contact with body fluids that contain a sufficient concentration of the retrovirus; this contact must provide an opportunity for the retrovirus to reach blood, either through direct exposure or through contact with mucous membranes. HIV infection can be transmitted through the following body fluids: Blood, semen, breast milk, and vaginal/cervical secretions.

Concentrations of HIV may be found in other body fluids, such as saliva. However, the body fluids listed above are the only fluids that carry enough of the retrovirus to be infectious. It is apparent that situations in which a person would be exposed to these fluids are limited; there are, however, three common routes of transmission:

1. **Sexual transmission** – HIV is found in infectious concentrations in both semen and vaginal/cervical secretions. Therefore, transmission can occur from one sexual partner to the other by unprotected sexual activity, regardless of gender. Having multiple sexual partners increases the chances of being exposed to HIV. Also, the receptive partner is at an increased risk for exposure to HIV and STIs.

2. **Contact with infected blood** – Outside of the healthcare environment, contact with infected blood may occur when a person shares injection equipment (needles, works, etc.). Other blood sharing activities such as tattooing, sharing razors and any type of ritualistic bloodletting ceremonies (e.g. becoming "blood brothers") increases risk of exposure. All donated blood in blood banks is rigorously tested for HIV antibodies.

3. **Perinatal transmission** – An infected mother may transmit HIV to her child during pregnancy, birth, or breastfeeding. Initiating antiretroviral medication (particularly AZT) treatment shortly after the first trimester of pregnancy significantly reduces perinatal transmission.

COMMON MISPERCEPTIONS ABOUT HIV TRANSMISSION

Although there have been occurrences of HIV transmission between family members in a household setting, this type of exposure is rare. These transmissions are believed to have resulted from contact of mucous membranes with infected blood. However, to prevent such rare exposures, universal precautions – general protective measures – should be taken in all settings. For example, latex gloves should be worn during contact with blood or body fluids that could possibly contain quantities of blood such as urine, feces, or vomit. Cuts, lesions, sores, or other breaks in both the caregiver's and the patient's exposed skin should be covered and protected by bandages. Hygiene practices (sharing toothbrushes, razors) that increase the likelihood of blood contact should be avoided.

There is no known risk of HIV transmission to coworkers, clients or consumers from contact in industries such as food services. Food service workers known to be infected with HIV need not be restricted from work unless they have other infections or illnesses (e.g., hepatitis A, B, or C, tuberculosis, or diarrhea) for which any food service worker, regardless of HIV serostatus, should be restricted.

Kissing – Casual contact through closed mouth or "social" kissing is not a risk for transmission of HIV. Because of the potential for contact with blood during "French" or open mouthed kissing, the CDC recommends against engaging in this activity with a HIV

positive person – particularly in cases where blood may be present in the mouth or throat (e.g., sinusitis, dental work, gingivitis, tonsillitis, etc.) Still, the risk of acquiring HIV during open mouth kissing is still very minimal.

Biting – Investigations have been conducted in order to determine if biting is a viable route of transmission for HIV. However, evidence is unsubstantiated, and biting is not considered a common route of transmission. In fact, there are numerous reports of bites that did not result in HIV infection.

Saliva, tears, and sweat – HIV has been isolated in saliva and tears in very low quantities from some people living with HIV. It is important to understand that finding a trace amount of HIV in a body fluid does not necessarily mean that HIV can be transmitted by that fluid. HIV has not been isolated or identified in the sweat of HIV infected persons. Contact with saliva, tears, or sweat has never been shown to result in HIV infection or transmission.

Insect bites – There has been no medical evidence of HIV transmission through insect carriers – even in areas where there are many cases of AIDS and larger populations of biting insects. Lack of such outbreaks, despite intense efforts to detect them, supports the conclusion that HIV is not transmitted by insects. Unlike yellow fever or malaria – diseases that are transmitted by mosquitoes – HIV does not survive for long periods of time or replicate inside the insect. Further more, a mosquito does not inject its own or a previously bitten person's blood when it bites someone.

HISTORY OF HIV/AIDS IN THE U.S.

HIV/AIDS had its early beginnings when physicians in Los Angeles and New York City began identifying a rare, sometimes fatal pneumonia known as *Pneumocystis carinii* (PCP) and a rare blood vessel cancer, Kaposi's sarcoma (KS), primarily in homosexual men. Many of these individuals suffered from extreme, rapid weight loss, which was identified as "wasting syndrome".

This epidemic was characterized by infections, which were termed "opportunistic" because they utilized the opportunity of an underlying disorder to assault individuals with compromised immunity. Due to immuno–suppression, infections turned into far more serious illnesses than would have otherwise occurred in healthy individuals. Below is a brief history chronicling major events related to HIV/AIDS.

1981 Approximately 40 cases of an unusual syndrome were reported in the U.S. The first working name for the epidemic was Gay Related Immune Deficiency (GRID). Due to unsubstantiated scientific evidence, the infectious agent and routes of transmission remained unidentified. As epidemiological data was collected, cases were reported in infected injection drug users (both genders), and hemophiliacs.

1982 The new disease is renamed Acquired Immune Deficiency Syndrome (AIDS).

1984 French and American researchers independently isolate the virus, which caused the disease syndrome. The French labeled the discovery Lymphadenopathy Associated Virus (LAV). Americans named it Human T-Cell Lymphotropic Virus Type III (HTLV). The discovery allowed scientists to identify viral agents in blood, semen, vaginal secretions, and breast milk.

1985 The Centers for Disease Control (CDC) instituted a formal case definition and initiated a case surveillance system for all persons diagnosed with AIDS in the U.S. The FDA authorized the use of Enzyme Linked Immunosorbent Assay (ELISA or EIA) to identify HIV antibodies. It was announced that actor Rock Hudson had AIDS.

1986 A global agreement was enacted that named the virus that causes AIDS as Human Immunodeficiency Virus (HIV).

1987 Retrovir (AZT) was licensed by the Food & Drug Administration (FDA) as the first drug to directly combat HIV.

1988 Another viral strain identified as HIV-2, was isolated in regions of West Africa and the Caribbean. HIV-2 also causes AIDS.

1991 Congress approved the Ryan White Comprehensive AIDS Resource Emergency (CARE) Act to provide treatment and health services in areas decimated by AIDS. The FDA approved a second antiviral drug, ddI. In November, L.A. Lakers basketball star Magic Johnson disclosed that he was HIV +.

1992 The FDA approved a third antiviral drug, ddC.

1993 The CDC revised the case definition of AIDS to include HIV infection and CD4+ counts of <200 or the presence of numerous opportunistic infections.

1994 A clinical trial on the use of AZT showed that perinatal HIV transmission from mother to child could be greatly reduced.

1995 The FDA offered preliminary approval of Saquinavar, the first of a new class of drugs called protease inhibitors. Trials were instituted to test "cocktail" (combinations of different classes of drugs) approaches to treatment.

1997-2001 Highly active antiretroviral therapies (HAART) are developed and implemented. The use of HAART halts the replication of HIV and turns the disease into a chronic disease that may be managed.

2002 HAART is replaced by antiretroviral therapy (ART).

2003 The Bill and Melinda Gates Foundation awards a $60 million grant to the International Partnership for Microbicides, supporting development and research of microbicides. The pharmaceutical industry introduces fusion inhibitors.

2004 The FDA approved the use of oral fluid samples with a rapid HIV diagnostic test kit that provides screening results with over 99% accuracy in as little as 20 minutes.

2005 Gay Men's Health Crisis (GMHC) joins national 'HIV Stops With Me' social marketing campaign, which aims to reduce the stigma associated with HIV and to acknowledge the powerful personal role that people who are positive have taken in ending the epidemic.

2006 On March 10th, the FDA held a meeting to discuss the design of proposed studies to support the approval of over-the-counter (OTC) home use HIV test kits. The Ryan White CARE Act was reauthorized in December 2006.

THE HIV/AIDS EPIDEMIC IN LOUSIANA

For updated surveillance information, please see

www.hiv.dhh.louisiana.gov

ACTIVITY #1

Rate the following activities as:

- ✔ High risk;
- ✔ Moderate risk;
- ✔ Low risks;
- ✔ No risk.

If you rate the activity as high risk or moderate risk, suggest a way to make it safer:

1. Having unprotected sex with multiple partners.

2. Having unprotected sex with an injection drug user.

3. Performing oral sex on a woman.

4. Eating food prepared by a person with HIV.

5. Body piercing.

6. French kissing.

PREVENTION & RISK REDUCTION

An individual's level of risk exposure to HIV can be significantly reduced or prevented by choosing whether or not to engage in certain activities. Risk reduction may be achieved by sexual abstinence, monogamy or by practicing safer sex. Similarly, reducing risk of exposure from infected needles is possible by not using intravenous drugs, not sharing needles or sterilizing needles that are shared.

Abstinence – The definition of abstinence is avoiding sexual practices with another individual. In doing so, individuals prevent contraction of HIV through sexual intercourse. However, many individuals find practicing abstinence to be difficult. Suggesting psychosocial strategies for coping with normal sexual thoughts and emotions may assist individuals in maintaining a state of abstinence. Individuals may find counseling with a behavioral medicine specialist, health educator, health psychologist or a counselor trained in HIV/AIDS issues to be beneficial.

Monogamy – Having only one sex partner reduces the risk of exposure to HIV provided:

- Both partners do not have HIV and STIs
- Neither partner is engaging in sex with someone outside of the relationship
- Neither partner engages in intravenous drug use (IDU)

Safer sex – Safer sex involves using male and female condoms correctly and engaging in activities other than intercourse with the proper protection when necessary.

Oral sex – Although HIV is not highly concentrated in saliva, poor oral hygiene or any open sore in the mouth may present a route of transmission for HIV. Condoms and dental dams may be used during oral sex to reduce risk. Dental dams (latex squares used by dentist) or plastic food wrap (Saran Wrap) may be used as a barrier for oral sex on a female. Keep in mind, however, that these devices are not tested for safety and effectiveness as condoms are.

Mutual masturbation – Touching a partner's genitals is also considered a low risk activity.

Drug and alcohol use – Drug use, even when it is not injection drugs, may also increase the risk of HIV transmission. Drugs, including alcohol, cause a loss of inhibition, impair judgment, and alter rational decision-making. When a person is intoxicated, they may be more likely to engage in unprotected sex, and they may be less able to use a condom correctly. Drugs and alcohol also diminish the effectiveness of the immune system, increasing susceptibility to infectious agents.

Needle use – Needles should not be shared, and clean/sterile needles should be used every time. This is the only way to totally prevent HIV transmission while using injection drugs. However, there are some simple practices to follow to reduce the potential for HIV transmission. Needles and syringes that are used by more than one person may be cleaned after each use with a solution of household bleach and water. All parts of the works must be cleaned and the filtering material (cotton) must be thrown away.

The following pages offer more detailed information and diagrams for risk reduction during sex and needle and syringe use.

Effectiveness of condoms – The proper and consistent use of latex condoms when engaging in sexual intercourse – vaginal, anal, or oral – can greatly reduce a person's risk of acquiring or transmitting sexually transmitted infections, including HIV.

Condoms are classified as medical devices and are regulated by the FDA. Condom manufacturers in the United States are required to test each latex condom for defects or holes before it is packaged. When condoms are used correctly, breakage rates have been found to be less than two percent.

In order for condoms to provide maximum protection, they must be used consistently and correctly (every time) a sex act is performed. Incorrect use contributes to the possibility that the condom will break or leak. Correct use of condoms includes appropriate storage (avoid keeping condoms in a wallet or glove compartment for lengthy time periods) careful handling (do not tear the condom when opening the package) and timely use (check the expiration date).

What to look for in a condom:

- The condom is made of latex – not natural skin
- The condom should not be old – the expiration date is stamped on the wrapper
- The condom package should be intact

Lubricants – Condoms should be used with water-based lubricants only (such as KY Jelly, Surgilube, Astroglide); do not use oil-based lubricants (baby oil, Crisco, lotion, Vaseline, Cool whip) with latex condoms – the oil breaks down the condom.

Recommendations for Proper Male Condom Use

The following are recommendations for proper male condom use during vaginal or anal intercourse.

1. Be sure you have a latex condom that has not passed its expiration date, (you can check the expiration date written on the package). Do not use condoms that have been stored for long periods of time in wallets, glove compartments, or other warm places.

2. While the condom is still in the package, push the condom away from the top of the package so that you do not tear it when opening. Be sure to carefully tear the package material using only your fingers, not our teeth. Check for holes or damage before use, but do not unroll the condom to do so.

3. If the condom is not pre-lubricated, you can use a water based lubricant on the inside of the condom. Place a drop on the inside. Again, baby oil or other oil-based lubricants are not to be used.

4. Roll the condom down over the erect penis.

5. After ejaculating, withdraw the penis while it is still erect. While pulling the penis out, hold the base of the condom so that it does not slip off and spill any semen. Be sure to tie off the open end of the condom after using it to avoid spilling the semen.

6. Throw the used condom away immediately. Do not use the same condom more than once.

NOTE: For condom use during oral sex, it is recommended that a non-lubricated condom be used.

Recommendations for Proper Female Condom Use for Vaginal Intercourse

The following are recommendations for proper female condom use during vaginal intercourse.

NOTE: It is important to use lubricant with your female condom. Lubrication helps keep the condom in place.

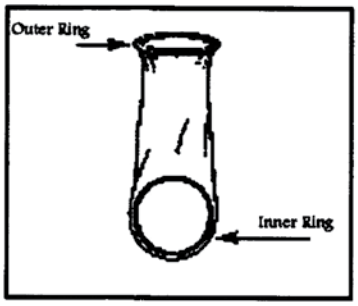
1. Add lubricant to the inside of the pouch or to the penis. Start with two drops; add more if desired. Use more lubricant if:
   - The penis does not move freely in or out.
   - There is no noise during intercourse.
   - You can feel the female condom when it is in place.
   - The female condom comes out of the vagina during use.

2. Remove and insert a new female condom if:
   - The female condom rips or tears during insertion or use.
   - The outer ring is pushed inside.
   - The penis enters outside of the pouch.
   - The female condom bunches up inside the vagina.
   - You have sex again.

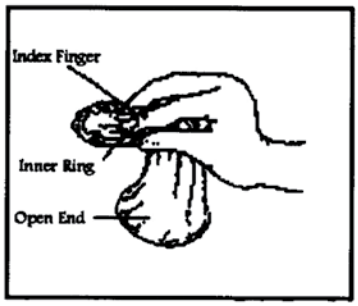
3. Remember:
   - Use the female condom every time you have intercourse.
   - Use a new female condom with each sex act.
   - Follow the directions carefully.
   - Do not remove the condom's inner ring.
   - Do not use a female condom and a male condom at the same time.
   - Do not tear the condom.
   - Use more lubricant if needed.
   - Remove the condom carefully from the package.
   - Be careful of sharp objects, like rings or sharp fingernails. Take are not to tear the condom.

FEMALE CONDOM USE–VAGINAL INTERCOURSE

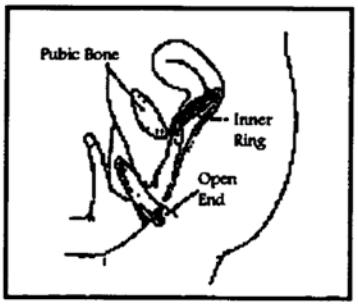
1. The **OPEN END** (Outer Ring) covers the area around the opening of the vagina. The **INNER RING** is used for insertion and helps hold the pouch in place.



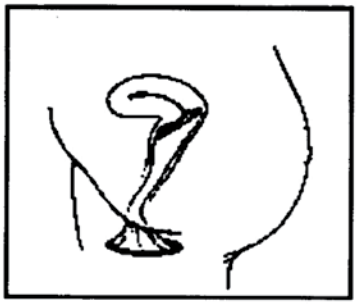
2. **HOW TO HOLD THE POUCH** - Hold the inner ring between the thumb and middle finger. Put the index finger on the pouch between the thumb and middle finger.



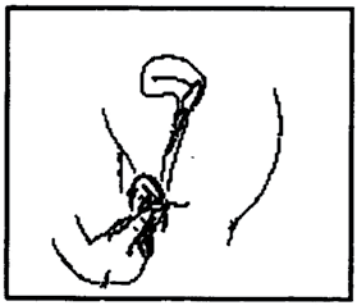
3. **HOW TO INSERT** - Squeeze the inner ring. Insert the pouch as far as possible into the vagina. Make sure the ring is past the pubic bone.



4. **MAKE SURE PLACEMENT IS CORRECT** - Pouch should not be twisted. The outer ring should be outside the vagina.



5. **REMOVAL** - Remove before standing up. Squeeze and twist the outer ring, then pull out gently. Dispose of in the trash, not the toilet.



Recommendations for Proper Female Condom Use for Anal Intercourse

Warning: The female condom has not been tested for effectiveness as a barrier against HIV infection in anal intercourse. The female condom is not approved by the FDA for anal intercourse.

The following are recommendations for proper female condom use during anal intercourse.

1.To insert the condom carefully:

- Remove the condom carefully from the package.
- Be careful of sharp objects, like rings or fingernails. Take care not to tear the condom.
- You may wish to add more lubricant to the outside of the condom.
- Squeeze the inner ring with your fingers.
- Be sure that lubrication is spread evenly inside the condom.
- Add more lubricant as needed.
- Insert the device into the anal opening.
- Push the inner ring and pouch the rest of the way up into the anal cavity with your index finger.
- For maximum protection, the inner ring should be pushed past the sphincter muscle. This step might be difficult the first or second time it is attempted.

2. Before intercourse:

- Make sure the outside of the ring lies outside of the anus.
- Leave the inner ring in to hold the condom in place.
- About one inch of the condom will stay outside of the anal opening.

3. During intercourse:

- You might notice that the condom moves around during sex.
- Side to side movement of the condom is normal. It will not reduce your protection.
- Up and down movement of the condom is also normal, as it may slip up and down the penis. This will not reduce protection, because the penis is covered and any fluid stays inside the pouch.
- Make sure the ring stays on the outside of the anus.
- It is best not to "come" (ejaculate, orgasm) inside of the condom.
- Do not use a conventional (male) condom with a female condom during anal intercourse.

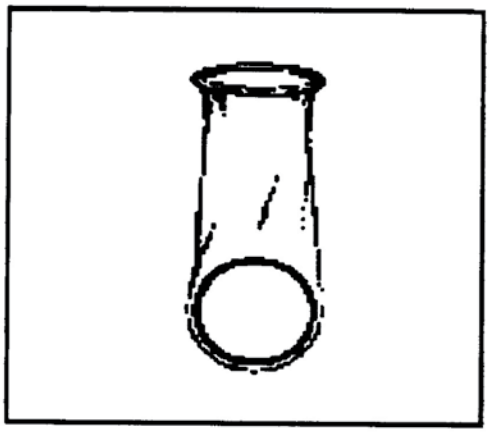
4. Stop having intercourse if:
- The penis starts to enter underneath or beside the pouch.
- The outer ring is pushed inside when the penis first enters.
- The outer ring goes inside; remove the condom, adding extra lubricant before putting it back inside.

5. Do not use female condoms for;
- Fisting.
- Water sports; it is not designed for activities involving urine.

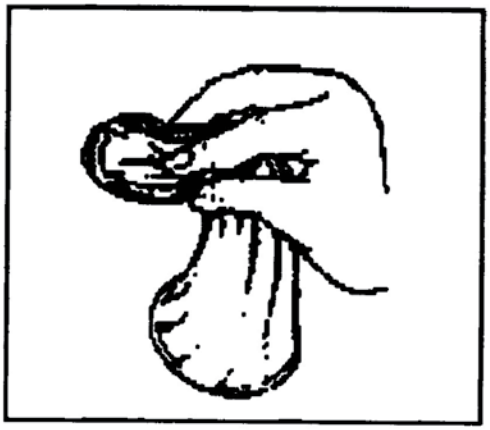
6. After anal intercourse:
- Close and twist the outer ring to contain any fluid.
- Pull it out gently.
- Throw it away. Do not flush and do not reuse the condom.

FEMALE CONDOM USE–ANAL INTERCOURSE

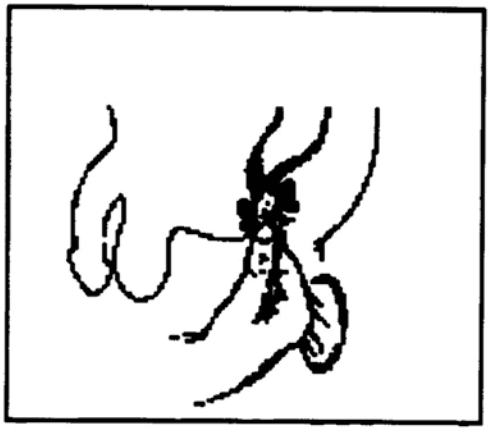
1. The **OPEN END** (Outer Ring) covers the area around the opening of the anus. The **INNER RING** is used for insertion and helps hold the pouch in place.



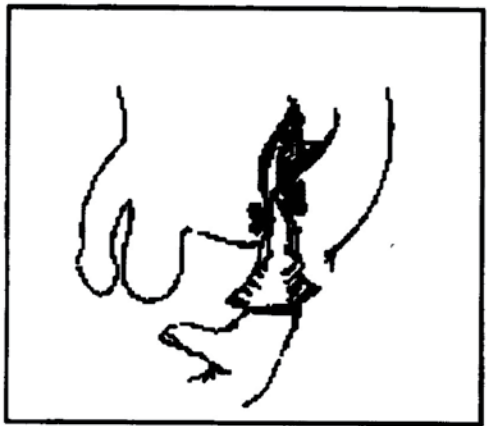
2. **HOW TO HOLD THE POUCH -** Hold the inner ring between the thumb and middle finger. Put the index finger on the pouch, between the thumb and middle finger.



3. **TO INSERT THE CONDOM -** Squeeze the inner ring. Insert the pouch as far as possible into the anus. Make sure the inner ring is past the sphincter muscle.

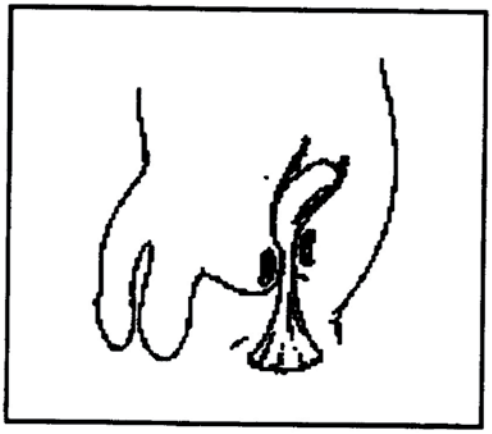


4. **MAKE SURE PLACEMENT IS CORRECT** - The pouch should not be twisted. The outer ring should be outside the anus.

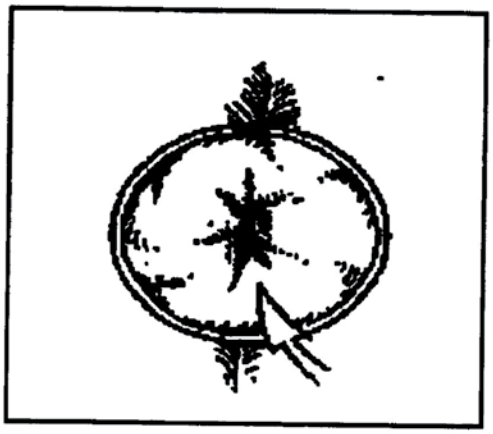


FEMALE CONDOM USE–ANAL INTERCOURSE

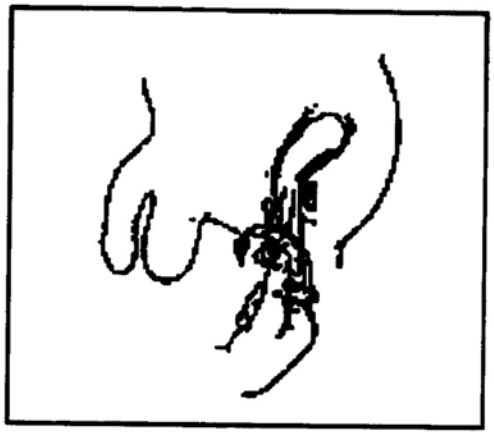
5. The **OPEN END** (Outer Ring) lies outside the anus as shown.



6. The anus should be covered; if the outer ring is being pushed into the anal cavity, more lubrication should be added.



7. **REMOVAL** - Remove before standing up by squeezing and twisting the outer ring and pulling the condom out gently. Dispose of the condom in the trash--do not dispose of female condoms in the toilet.



Safer Injection Equipment Use

The most effective method for someone who uses hypodermic needles and syringes to avoid HIV exposure or transmission is to avoid sharing injection equipment and to use a new needle every time. However, if needles and syringes will be shared, the following are simple recommendations for sterilizing injection equipment:

Step One

- Fill the syringe to the top with fresh, clean water.
- Once the syringe is filled with water, shake and tap the syringe.
- Eject the water from the syringe away from where the "works," water and bleach is located, flushing out all of its contents.
- Repeat this step three times.

Step Two

- Fill the syringe to the top with 100% full strength, liquid household bleach.
- Once the syringe is filled with bleach, shake and tap the syringe.
- Eject the bleach from the syringe away from where the "works," water and bleach is situated, flushing out all of its contents.
- Repeat this step three times.
- During each rinse, the syringe should be full of 100% full strength, liquid household bleach for at least 30 seconds.

Step Three

- Fill the syringe to the top with new, clean water.
- Once the syringe is filled with water, shake and tap the syringe.
- Eject the water from the syringe away from where the "works," water and bleach is located, flushing out all of its contents.
- Repeat this step three times.

Remember: It is always best to use a new needle every time.

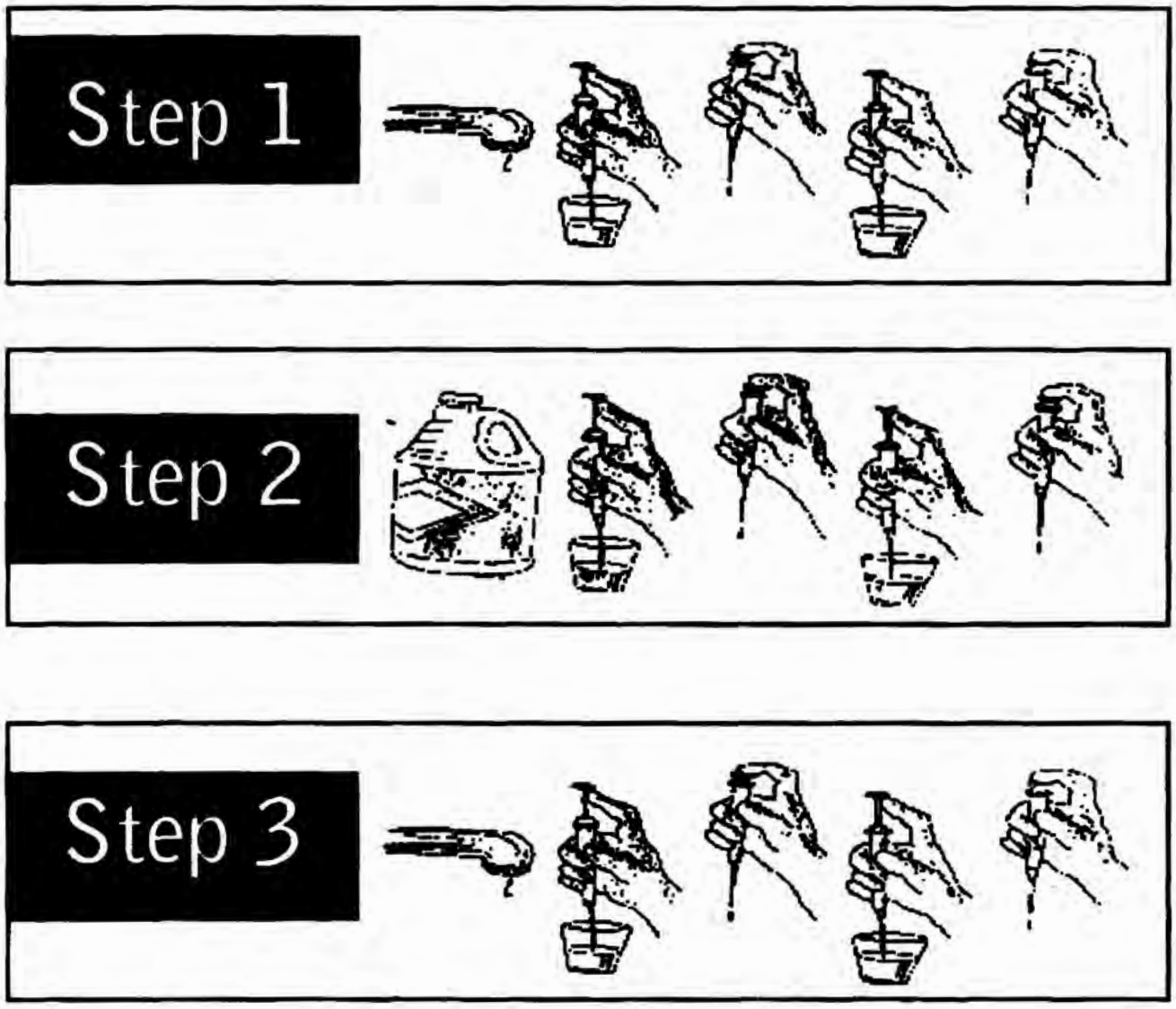
WARNING: It is very dangerous to inject bleach into the bloodstream.

Note: Cleaning the needle and syringe in this way does not insure that there will be no transmission of HIV, but it reduces the chances by a significant amount.

Safer Injection Equipment Use

When injecting substances that have been cooked and processed into liquid form, the cooker and any other materials used also need to be disinfected with bleach and rinsed with water.

The filtering material (e.g., cotton ball) should be disposed of after one use, because it may be contaminated with blood and there is no way to disinfect it. Using a new filter each time helps to reduce the risk of HIV transmission when injecting drugs.



TESTING & PARTNER NOTIFICATION

HIV Antibody Testing

In the initial stages of HIV infection, the actual retrovirus is difficult to detect. Rather than identifying the retrovirus, HIV testing involves detecting antibodies. Antibodies are produced by the immune system in reaction to the presence of the retrovirus. In an HIV antibody test, the presence of antibodies in response to the presence of HIV is detected. The most common HIV antibody tests are ELISA (EIA) and Western Blot. These tests can now be performed using samples of oral (mouth) fluid.

If an HIV antibody test is negative, no antibodies were detected. A negative test can indicate that a person is not infected with HIV (s/he is HIV negative), or that s/he has been exposed but the immune system has not had time to produce antibodies. Antibodies to HIV usually will develop in 3 months but in rare instances, could take up to 6 months to develop after the initial exposure.

A positive HIV antibody test indicates exposure to HIV (meaning the body has manufactured antibodies in response to HIV exposure). A test result is not reported as positive until it has been confirmed three times, including the use of a different type of test. When a person has a positive HIV test, it does not mean that the person has AIDS or that the person will have AIDS in a certain amount of time –it only means that the person is infected with HIV.

An HIV antibody test may also be indeterminate or inconclusive. In this case, the presence or absence of HIV antibodies cannot be confirmed. An indeterminate test should be repeated three to six months later with a new blood sample. It is very important to follow up and seek retesting.

The Timing of Testing

The timing of an HIV antibody test with respect to risk behavior is very important. Because the test relies on the formation of antibodies that develop within three months after exposure, it may not indicate if there has been exposure to HIV in the past three months. Therefore, an infection occurring within the three months prior to the test may produce a negative result. Following each potential exposure, there is a time period of three months in which the person may be infected but test negative. In rare instances, it may take up to six months to detect infection.

HIV Antibody Test

Blood/Serum Level Tests

ELISA
The ELISA (Enzyme Linked Immuno Sorbent Assay) or EIA is the most frequently used HIV test. It is a highly sensitive test, meaning that all (or nearly all) infected people will test positive.

Western Blot
The Western Blot test is most commonly used to confirm a positive ELISA test. It is more specific than the ELISA test, so all or nearly all people who are not infected will test negative. The two tests combined result in nearly 100% accuracy.

Other Tests
Other diagnostic tests include:

- Radioimmunoprecipitation assay (RIPA): Confirmatory blood test used when antibodies are to low detect and when Western Blot test results are inconclusive.
- Dot-blot immunobinding assay: A rapid screening blood test used when other test results are inconclusive.
- Immunoflourescence assay: A less commonly used confirmation test used when other test results are inconclusive.
- Nucleic acid testing: A less commonly used confirmation test used when Western Blot test results are inconclusive.
- Polymerase chain reaction (PCR): A specialized test that searches for HIV genetic information. Expensive and labor-intensive, can detect viral load in recently infected individuals.

Urine and Oral Fluid Test
Urine testing is not as specific or sensitive as a blood test. A physician must order the test, and the results are returned to the physician or his/her assistant.

Oral fluid tests, such as Orasure, collect oral fluid from the oral cavity. The tests are analyzed using an EIA or Western Blot test. Many HIV testing sites offer these tests.

Rapid HIV Tests
Rapid HIV tests are now licensed for use in the United States. Results from a rapid test can be determined in as little as 10 minutes, as opposed to the 1-2 weeks from the EIA. Samples taken from blood or oral fluid are used to determine serostatus.

Pre-Test Counseling

HIV antibody testing takes place in the context of counseling to assess and reduce risk to clients. Pre–test counseling occurs before a client is tested. During this session, risks are assessed and a plan to reduce those risks is developed. Additionally, the client is informed about the testing procedures and asked to sign a form stating that s/he agreed to take the HIV antibody test (informed consent).

Specimen Collection

Most HIV antibody tests are performed on samples of blood. A small sample of blood is collected by a phlebotomist – a person trained and certified to draw blood. HIV antibody tests can also be conducted using oral fluids. A cotton swab which resembles a Q-tip is used to collect saliva.

HIV Antibody Testing

Regardless of what type of specimen is used (blood or saliva), ELISA is the first test performed. If the first ELISA test is positive, an additional ELISA test is performed on the same specimen. If both of these tests produce positive results, the Western Blot test is performed. A person is declared to have a positive antibody test (seroconversion) only when each of these tests is positive.

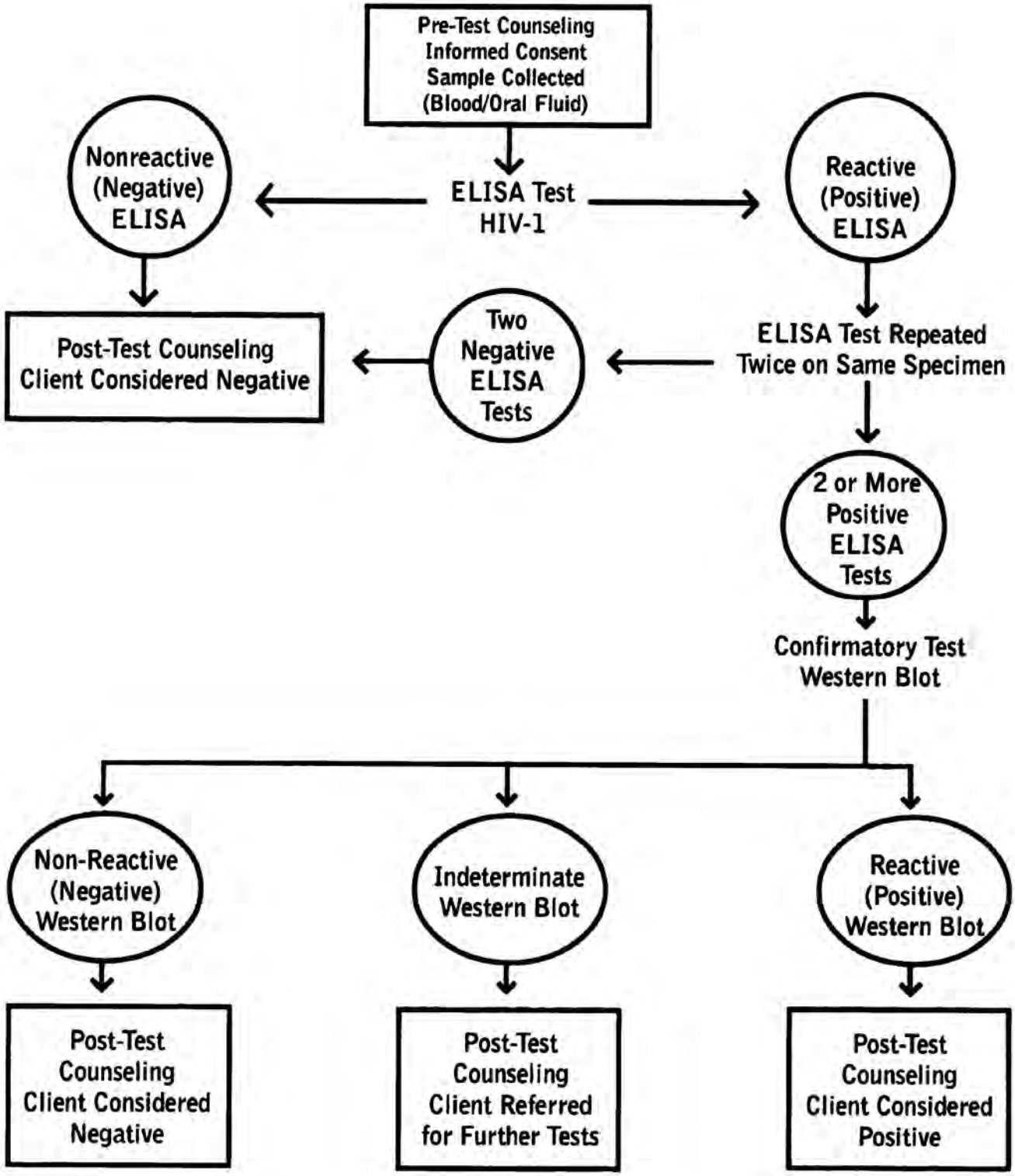
Post Test Counseling

Results of HIV antibody tests are disclosed by a trained counselor. During this session, clients are informed of their HIV serostatus and given appropriate referrals for medical care. Additionally, clients who tests positive may be asked to disclose the identities of sexual or needle sharing partners. Finally, the client and counselor discuss a risk reduction plan.

Home Access

People wanting to know their HIV status now have the additional option of home testing with the Home Access Kit. Each kit comes with a unique, anonymous code number that is registered after the informed consent materials have been read. The test uses a small blood sample which is collected by a pinprick to the finger. The sample is then sent in the mail to a laboratory for analysis. Approximately seven days later, the user receives results of his or her serostatus by calling a toll free number and referring to the code. Positive tests results are disclosed by a trained counselor over the phone. Persons testing negative also have access to a counselor by phone.

HIV ANTIBODY TESTING



TESTING & PARTNER NOTIFICATION

Confidential and Anonymous Testing

The words "confidential" and "anonymous" are often confused. When something is kept confidential, access to the material is limited to a specific group of authorized people. For example, you keep information about your credit cards confidential–only you and the company know your account number. On the other hand, when something is anonymous, there is no way to link the information to a particular individual. Everyone being tested for HIV should have a choice of testing confidentially or anonymously.

These terms are also applied to different types of HIV antibody testing. Confidentiality in testing refers to the way that all records regarding the test are kept. In a confidential HIV test, the identity and results of the person being tested are not available to anyone except the authorized clinical personnel. In an anonymous HIV test, there is no record that links the identity of the person with the test. When the sample is collected, it is identified with a code number only. When receiving the results, the person being tested refers only to the code number assigned to the sample.

Partner Counseling and Referral Services (PCRS)

The sex and needle sharing partners of HIV infected persons are at high risk for contracting HIV infection. Since infected persons may show no outward symptoms of infection, the partners may not know that they themselves are at risk and may not act accordingly to reduce this risk or seek appropriate medical care. PCRS are designed to preserve the confidentiality of the HIV infected person while reducing the risk to the partner(s).

The Louisianan Office of Public Health HIV/AIDS Program has had an active PCRS program for many years pertaining to STIs and HIV. HIV infected persons are required by law to inform their current partners of their positive status. Under the current policy, sex and needle sharing contacts of HIV infected individuals will be contacted either by the infected person, by the medical provider, or by a Disease Intervention Specialist (DIS) from OPH. When a DIS carries out notification, the partner is told only of their exposure and not the name of the infected person. The partners are then encouraged to undergo testing for possible HIV exposure. Regardless of how the notification is conducted, the DIS will record the method of notification. The services of DIS are available to HIV infected persons anytime they may need them, even years after the original counseling and testing visit.

ACTIVITY #2

The following questions are either true or false.

1. Wearing a condom reduces the risk for contracting HIV.

2. Injection drugs increase the risk of contracting HIV.

3. Using bleach kits reduces the risk for acquiring HIV through dirty syringes.

4. The ELISA and Western Blot tests are the two main test used to determine an individual's serostatus.

5. There are only two tests that can determine an individual's serostatus.

6. It is the law to notify the partner(s) of newly diagnosed HIV infected individuals.

FROM HIV TO AIDS

HIV Infection, Disease, and AIDS

From the time a person is exposed and infected with HIV, the disease progresses in four stages. The fourth stage is AIDS. The time it takes for an infected person to go from the first stage to the fourth varies widely and depends on the overall health of the individual, response to drug therapy, and other biopsychosocial factors that researchers continue to explore.

Stages of HIV Disease

1. **Acute (Primary) HIV Infection –** Usually this presents as minor, flu like illness that develops a few weeks or months after initial exposure to HIV. This illness is rarely recognizable when it occurs and is generally diagnosed later when other symptoms or a positive HIV antibody test indicate HIV pathogenesis. In this stage, HIV antibodies have not yet developed, so the person's serostatus would be negative.

2. **Asymptomatic HIV Infection –** This stage immediately follows the abatement of health issues associated with acute onset of infection and continues until the appearance of any symptoms of HIV (the third stage) or until the T-cell count drops below 200 (AIDS). The only symptoms that may be displayed at this time are chronically swollen lymph glands or chronic vaginal yeast infections in women.

   The asymptomatic stage is indefinite, sometimes as short as six months to as long as 15 years or more. Outwardly, the infected person displays no symptoms, but within the immune system, there is a continuous interaction between T-cells and HIV. The immune system is creating new T-cells to replace the ones that HIV destroyed, but over time, the body cannot continue to replace the T-cells. The T-cell count declines and the viral load increases. Medications can be used at this stage to slow the replication of the retrovirus and to assess damage to the immune system.

3. **Symptomatic HIV Infection-**This stage is marked by the presence of chronic symptoms, including one or more of the following:
   - Slight to moderate weight loss
   - Night sweats
   - Low grade fevers
   - Diarrhea
   - Oral thrush (white sores in the mouth)
   - Chronic yeast infections in women
   - Abnormal PAP smears in women
   - Shingles (herpes zoster virus)
   - Skin conditions

   The average time frame for the symptomatic stage is four to five years.

4. **Advanced (Severe) HIV Infection; AIDS -** The major complications during this stage are typically life-threatening.

   AIDS is marked by a low CD4+ count (<200) or the presence of one or more of the following:

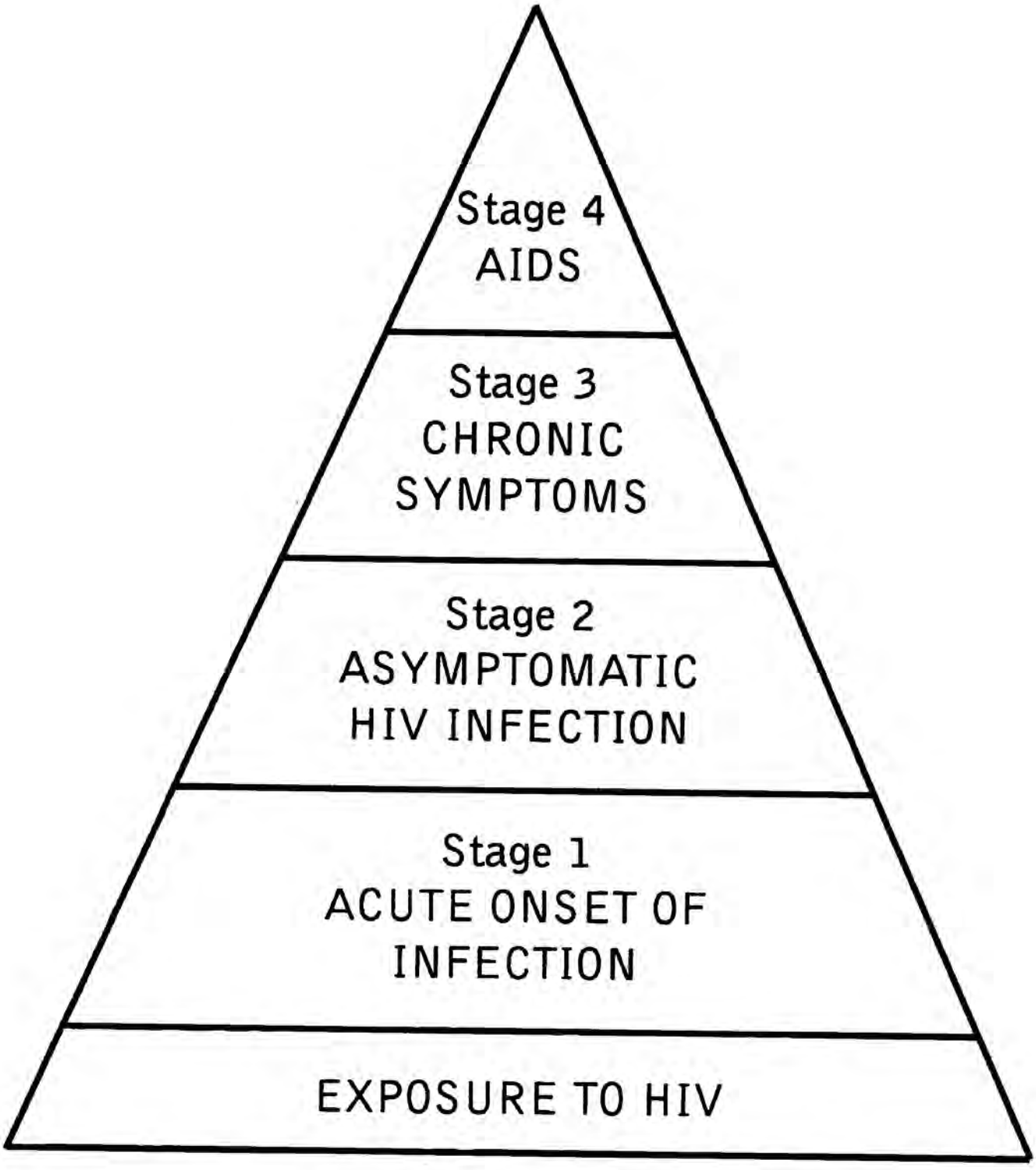
   - Opportunistic infections – Severe illnesses caused by microorganisms (bacteria, fungal, parasitic and viral). In a HIV negative person, these infections are frequently prevented by the immune system. The most common of these infections is pneumonia.

   - Cancers – Neoplasms usually complicate HIV infection. The most common of these neoplasms are Kaposi's sarcoma and lymphomas (lymph node cancers).

   - Neurological diseases – Disorders involving any level of the nervous system from the peripheral nerves to the brain. The most common are HIV encephalopathy and AIDS associated dementia, which impairs cognitive functioning (thinking), memory, and behavior.

   - Wasting – Significant and continuous weight loss, despite medical and nutritional interventions. In lesser developing countries, wasting is the primary clinical manifestation of AIDS.

SPECTRUM OF HIV DISEASE



TREATMENT OF HIV/AIDS

Research and development of pharmaceutical therapies for HIV/AIDS have not produced a cure, but these continuing efforts have resulted in a variety of therapies that improve and prolong the quality of life for HIV+ persons. This field is evolving, so it is important to stay abreast of current developments.

Although impressive advances have been made, it is necessary to remember that a cure or pharmaceutical prevention for HIV/AIDS is nonexistent.

Pharmaceutical therapies for HIV/AIDS are remarkably varied in their use and are prescribed on an individual basis. These therapies involve various treatment strategies and combination therapies (drug cocktails) that aim to reduce viral load, raise T cells, and treat opportunistic infection while diminishing side effects and minimizing barriers to their use. In addition to drug therapy, appropriate treatment should include self care strategies involving proper nutrition, stress management, and harm reduction.

HIV/AIDS medications fall into four general classifications:

- Antiretroviral. (ART)
- Highly active antiretroviral therapy (HAART).
- Protease Inhibitors
- Prophylaxis

Antiretroviral Therapy (ART) - the more recent series of drug combinations and strategies for treatment of HIV/AIDS. These forms of therapy are aggressive like HAART, but were developed in order to combat drug resistant strains of HIV.

Highly active antiretroviral therapy (HAART) – an aggressive "drug cocktail", or a synthesis of antiretroviral drugs that arrests the replication of HIV and assist in the protection of cellular immunity. Secondary opportunistic infections are drastically reduced upon starting HAART therapy, and progression of Stage III HIV into Stage IV HIV is halted in many clinical cases due to considerable reductions in viral load.

Protease Inhibitors – drugs that reduce HIV viral load. The most famous of these drugs is AZT, but there are many types. AZT is the drug used with pregnant women who are HIV positive to reduce the likelihood of perinatal transmission.

Prophylaxis medications – used to prevent secondary opportunistic infections from occurring during stages of immuno-suppression. Usually consist of antibiotics.

Post Exposure Prophylaxis (PEP) – a short term antiretroviral treatment to reduce the likelihood of HIV infection after potential exposure, such as occupational exposure, sexual intercourse, or sexual assault.

Pre Exposure Prophylaxis (PrEP) – an approach to HIV prevention in which antiretroviral drugs are used by an individual prior to potential HIV exposure to reduce the likelihood of infection. The effectiveness of PrEP is currently being evaluated.

For up to date information on HIV treatment go to www.projinf.org

Barriers and Problems with Drug Therapy

The various drug regimens that have been and continue to be prescribed for the treatment of HIV disease are not without problems. Some of these problems include:

- Cost – Antiretroviral medications are extremely expensive which prevents accessibility for some patients. People who cannot afford the medications and who do not have insurance that covers the cost often have no access to them at all. In Louisiana, medication assistance programs exist to help defray cost. Drug manufactures offer assistance program as well.

- Availability – For people relying on State assistance for medications, not all medications are available. Also, in lesser developing countries few people have access to medications.

- Side effects – Possible side effects of antivirals include nausea, diarrhea, abdominal discomfort, fatigue, insomnia, headaches, muscle aches/spasms, rash, anxiety/ restlessness and neurological disorders. Generally, if side effects do not subside, different medications are administered.

- Compliance/Adherence – When antiretrovirals are not taken as the physician has prescribed, their potency may be diminished. Moreover, failure to follow the prescription exactly makes it more likely that the virus will mutate into a drug resistant strain. Compliance problems usually stem from the number and timing of medications that the person needs to take (e.g., how many pills each day, whether they can be taken with food or other medications, etc.)

- Drug Induced Resistance – Tolerance and compromised efficacy of the drug may result due to persistent usage. The HIV virus develops resistance to drugs. When this occurs the virus actually shifts its RNA and DNA, mutating into a new strain of the former virus. Therefore the drug's effectiveness is diminished.

Self-care Strategies

Drugs can prolong and enhance the quality of life of persons living with HIV, but they are not the only remedy. The immune system can be positively or negatively influenced by everything from stress, nutrition, drugs or alcohol. By engaging in a number of integrative activities that promote health, HIV positive individuals may enhance their immune systems and decrease the risk of contracting secondary opportunistic infections.

Nutrition

Adequate nutrition is important for maintaining health and strengthening the immune system. Individuals with HIV/AIDS may need specialized diets depending on the stage of illness or other comorbid conditions. Nutrition can be used as a restorative therapy, and should be considered an important part of the over all treatment approach for HIV/AIDS infected individuals.

Food Safety

Sanitary food and potable water are necessary in order to prevent food borne illnesses. Food borne illnesses can be deadly to HIV positive individuals.

Vitamin supplementation

Supplementing a proper diet with extra vitamins/minerals may be necessary in some cases. Remember that dietary supplements are not a replacement for adequate nutrition derived from food sources. Always check with a physician before engaging in a supplementation program.

Exercise

Exercising can be very beneficial for HIV positive individuals. Weight training may assist in maintaining weight, increasing bone density, lowering triglyceride levels, and elevating the immune system. Other exercises that may have beneficial effects are walking, running, swimming, and yoga.

Stress Reduction and Management

Learning to manage the effects of everyday stressors and the stress associated with chronic disease will be challenging. Stress has a direct effect on the immune system, and may accelerate HIV pathogenesis. However, many efficacious programs exist that can assist individuals in reducing the harmful effects of acute and chronic psychosocial stressors.

HIV AND STIs

HIV and Sexually Transmitted Infections

Because HIV can be transmitted via sexual contact, it is, in fact, a sexually transmitted infection. However, STIs constitute a special case with regard to HIV prevention and thus should be given particular attention.

Knowledge about STIs among Americans is surprisingly low. Studies have shown that trends in STI epidemics have been closely followed by increases in HIV infection. That is areas high in STIs like syphilis and gonorrhea also show high prevalence of HIV. However, when STIs are treated, HIV transmission can be significantly reduced.

STIs can act as cofactors in HIV transmission, increasing both infectiousness and susceptibility. When HIV infected individuals are infected with other STIs, they are more likely to shed HIV. They also transmit HIV in higher rates than people with HIV alone. Additionally, women with other STIs have an increased number of HIV target cells in cervical secretions, and genital sores and ulcers may serve as a portal of entry for HIV.

Therefore, having an STI and, concurrently an HIV infection, makes transmitting HIV easier to others – and having an STI makes it more likely that HIV can be acquired.

Common Types of STIs

1. Bacterial STIs – These types of STIs are relatively easy to treat or "cure" with pharmaceutical therapy, but can become very serious if not treated.

   Bacterial STIs include:
   - Chancroid
   - Chlamydia
   - Gonorrhea
   - Syphilis
   - Bacterial Vaginosis

2. Viral STIs – Most viral STIs are incurable and cause permanent infection. However, many viral cases may present mild symptoms or become asymptomatic after completion of treatment.

   Viral STIs:
   - Cytomegalovirus (CMV)
   - Hepatitis (HBV, HAV)
   - Herpes (HSV-1, HSV-2)
   - HIV (AIDS)

- Human Papilloma Virus (HPV) or Genital Warts
- HTLV-1 and HTLV-2
- Molluscum Contagiosum

3. Fungal STIs: - These types of STIs can be treated with anti-fungal pharmaceutical agents. However, many have a high incidence of reoccurrence, and can have severe complications if left untreated.
   - Candidiasis (yeast infection)

4. Parasitic STIs: - common protozoan infections that may remain asymptomatic.
   - Amebiasis
   - Giardiasis
   - Trichomoniasis

5. Mixed infections – Mixed infections occur when more than one bacterial STI is present.

   Mixed Infections include:
   - Nongonococcal Urethritis (NGU) in males – Caused by chlamydia and other bacteria; the most common STI in men.
   - Cervicitis in females – Same causes as NGU; can lead to PID.
   - Pelvic Inflammatory Disease (PID) – The most common of all serious STI problems in females; the most common cause of sterility in women and of tubal/ectopic pregnancy; caused by chlamydia, gonorrhea and other bacteria.

Mixed infections continued:
- Epididymitis (infection of epididymus on surface of the testis) – Same cause as PID but occurs with far less frequency in men.
- Rectal and Intestinal Infections – Many causes including chlamydia and gonorrhea.

6. Skin Parasites – Skin parasites may indicate that a person is at risk for other STDS.

   Skin parasites include:
   - Pubic lice ("crabs")
   - Scabies

HIV AND STIs

Symptoms of Common STIs

STI	Symptoms	If not treated...
Gonorrhea (clap, drip, GC)	May present within 2 – 21 days post infection. Usually asymptomatic.	May lead to sterility in both sexes
	In women, thick, yellowish discharge from the vagina. Burning during urination may be present. Menstrual cycle is ore painful than normal. Pain in the lower abdomen.	May cause arthritis and damage to joints
	In men, yellow or white discharge from the urethra opening at the tip of the penis. Burning and pain during urination may be present.	May cause Pelvic Inflammatory Disease

STI	Symptoms	If not treated...
Syphilis	May present in 1 to 12 weeks after initial infection. Usually asymptomatic. A sore or rash on or near the genitals. Flu like symptoms	Syphilis can damage the valves of the heart, cause paralysis, and extreme psychological conditions. Fatal if not treated. Mother can pass the virus to infant during childbirth.

STI	Symptoms	If not treated...
Herpes	Presents 2 – 30 days after initial infection. May be asymptomatic. Small painful blisters on the genitals or mouth. Painful, frequent urination. Blisters may itch or tingle. Flu-like symptoms	Flare up related to stressful conditions May be passed to infant during delivery, resulting in potential brain damage or death if not treated.

Symptoms of Common STIs

STI	Symptoms	If not treated...
Chlamydia	Presents 7-21 days after initial infection. Usually asymptomatic.	Sterility
	In women, usually presents with bleeding between menstrual cycles, painful urination, and a discharge from the vagina. Pain in the lower abdomen and fever may be present.	May cause eye damage in infants. May cause pneumonia in infants.
	In men, usually a watery, white discharge from the urethra opening at the tip of the penis. Burning may be present during urination.	Can cause Pelvic Inflammatory Disease.

STI	Symptoms	If not treated...
Genital Warts	Presents 1 – 6 months after initial infection. Usually asymptomatic. Small, hard bumps around the genitals or anus.	Can multiply and cause blockage in the anus. May lead to precancerous conditions of the cervix.

STI	Symptoms	If not treated...
Hepatitis B	Usually presents with flu-like symptoms. Extreme fatigue Jaundice may present	Can lead to liver failure and may be fatal if not treated.

GLOSSARY

Abstinence – not having sexual intercourse (oral, anal, or vaginal), being celibate.

Acquired Immune Deficiency Syndrome (AIDS) – a result of infection with human immunodeficiency virus (HIV) that decreases the immune system's ability to fight infection.

AIDS – see Acquired Immune Deficiency Syndrome.

AIDS Related Complex (ARC) – outdated term to describe symptoms of HIV infection.

Anal sex (also anal intercourse) – inserting the penis (insertive) into the anus of the sexual partner (receptive).

Antibody – a substance in the blood that is formed in response to invading disease agents; part of the body's defense against disease.

Antigen tests – a blood test that detects HIV (rather than antibodies to HIV); still in the research stage of development.

Asymptomatic – exhibiting or producing no symptoms

AZT – see zidovudine.

Bacteria – microscopic organisms that can cause disease.

Bacterial infections – diseases caused by bacteria; most are responsive to treatment by antibiotics.

Blood testing – extracting and examining a small amount of blood to determine its characteristics, to detect the presence of disease agents or to detect evidence of infection.

Blood to blood contact – mixing together the blood of two or more people.

Candidiasis – a fungal infection which can occur in several places in the body, including the mouth or throat (thrush); a common opportunistic infection in people with AIDS.

Cell – the smallest independent unit of life capable of performing all life functions.

Centers of Disease Control and Prevention – a federal health agency that is part of the U.S. Department of Health and Human Services; provides national health and safety guidelines and statistical data on AIDS and other diseases.

Chronic – long duration, slow progression and continuance of a disease.

CMV – see cytomegalovirus infection.

Condoms – a sheath made of latex, polyurethane, or lamb intestine that fits over the erect penis; when used correctly, latex condoms can give protection against HIV transmission (rubber, prophylactic).

Confidential testing – testing in which test results are linked to persons and recorded in medical files. State laws limit who can have access to the results and under what conditions they can gain access.

Confidentiality – keeping information private or secret; limiting access to specific authorized persons.

Contaminated needles – needle that have not been properly cleaned, thus making transmission of HIV and other diseases possible if the needles are shared.

Cytomegalovirus infection (CMV) – a viral infection that may occur without symptoms or with mild flu-like symptoms; a common opportunistic infection among people with AIDS; often results in blindness.

ddI (didoxyinosine) – an antiviral drug that fights HIV.

DNA (deoxy-ribonucleic-acid) – the molecule that contains the genetic information of the organism and directs the functions of its cells.

Dry kiss – a kiss that does not involve mouth to mouth or open mouth contact (social kiss, kiss on the cheek).

EIA – see ELISA.

ELISA – Enzyme-Linked Immunosorbent Assay; used to test blood for the presence of antibodies to HIV.

Epidemic – a rapidly spreading illness or disease in a population.

Exposure to HIV – condition of coming into contact with HIV.

FDA (Food and Drug Administration) – the governmental agency that oversees the testing and approval of new drugs and medical devices before they are available to the public.

French kiss – see wet kiss.

Fungus (pl. fungi) – a microscopic disease agent such as yeast or mold.

Gene – the basic unit of heredity; coded pieces of information in a cell that direct an organism's replication and functioning (see DNA).

Genital contact – contact between the sex organs of two people.

Hepatitis B – viral infection that affects the liver and is transmitted only through blood to blood and sexual contact.

Herpes – general term for herpes simplex viruses which cause fluid filled blisters around the mouth or genitals; a common infection in people with AIDS.

HIV – see human immunodeficiency virus

HIV antibody-positive test result – a result in which HIV antibodies are detected in the blood.

Household contact – ordinarily social contact among members of a household.

HTLV III – Human T-cell Lymphotropic Virus, type III; earlier name for HIV.

Human immunodeficiency virus (HIV) – a virus that infects and destroys cells in the immune system and causes AIDS.

IDU – injection drug user.

Immune – protected from disease.

Immune system – a variety of cells and substances within the body that makes it resist infection by viruses, bacteria, parasites and fungi.

Immuno-suppression – diminished capacity of the immune system to resist infectious agents.

Incidence – number or rate of new cases of a disease over a period of time.

Indeterminate – findings that are not clearly negative or positive.

Infection – invasion of the body by a disease agent.

Infectious disease – disease capable of being transmitted by an agent.

Intercourse – sexual contact involving penetration.

Intravenous drug use – injection (shooting) drugs by a needle directly into a vein.

IV drug use – see intravenous drug use.

Kaposi's sarcoma – a cancer that can involve the skin, mucous membranes and lymph nodes; appears as purple or red spots.

LAV – see Lymphadenopathy – associated virus.

Lesion – an abnormal change in the tissue or in the structure of an organ or body part due to injury or disease (sore).

Lubricant – a substance used to reduce friction during sex.

Lymphadenopathy-associated virus – an earlier name for HIV.

Lymph glands – glands located in the groin, neck, armpits and elsewhere which contain large numbers of lymphocytes; involved in fighting infection.

Lymphocytes – types of white blood cells called T-cells and B-cells that are essential to the functioning of the immune system.

Masturbation – massaging the genitals to the point of orgasm.

Mucous membrane – a lining or membrane of all body passages that lead to the interior, such as the lining of the vagina; glands in the mucous membranes produces mucous.

Negative test result – test finding that shows no detectable signs of antibodies to HIV.

Opportunistic infection – any infection that takes advantage of an immuno-suppressed system.

Oral sex (oral intercourse) – contact of the mouth or tongue with a partner's penis, vagina or anus during sexual activity.

Parasite – an organism that relies on another organism for survival.

Partner notification - the process of informing the sexual and needle sharing partners of an HIV infected persons that they may have been exposed to HIV.

Pathogenesis – the active course of a disease, in which the disease origin, life cycle, and symptoms are defined.

Penis – the male sex organ.

Perinatal transmission (of HIV) – the passing of HIV to an infant by the mother before or during birth.

Pneumocystis carinii pneumonia – a form of pneumonia caused by a parasite that doe not usually cause the infection in people with fully functioning immune systems; the leading cause of death in people with AIDS.

Pneumonia – an infection of the lungs.

Polymerase chain reaction test – a test that can detect HIV by looking for the genetic information of the virus.

Positive test result – test finding that shows the presence of antibodies to HIV in the blood; a person with a positive antibody test is assumed to be infected with HIV and is able to infect others.

Prevalence – total number of cases of a disease in a population over time.

Prophylactic – a preventive drug or device; see also condom.

Replicate – the process by which infectious viral agents reproduce and propagate.

Risk behavior – engaging in an activity that outs a person at increased risk of contracting HIV.

Saliva – the fluid produced by the mouth.

Semen – whitish fluid ejaculated from the penis during orgasm that contains white blood cells and fluid (cum).

Seroconversion – the change from an absence of antibodies to HIV in the blood to the presence of HIV antibodies in the blood; change from a negative to a positive HIV antibody test.

Sex – physical contact involving the genitalia.

STI – see sexually transmitted infections.

Stigma – Prejudicial beliefs and discriminatory actions directed at individuals who are HIV positive, perceived to be HIV positive, or perceived to be at risk for HIV infection.

Syndrome – a group of related problems or symptoms.

Syphilis – a sexually transmitted disease that can cause lesions on the genitals and other parts of the body; if untreated can cause heart and brain damage.

T-helper cell – a type of white blood cell essential to the body's immune system' helps to regulate the immune system and control B-cell and antibody function.

Test sensitivity – the ability of a test to detect a true positive.

Test specificity – the ability of a test to detect a true negative.

Vaccine – a substance that produces or increases immunity to and protection against a particular disease.

Vagina – the passageway in females extending from the vulva to the cervix.

Vaginal fluids – fluids that provide moisture and lubrication to the vagina.

Vaginal sex (also vaginal intercourse) – penetration of the vagina during sex.

Virus – a disease agent that must live within cells, often destroying them; much smaller than bacteria.

Wasting syndrome – extreme weight loss (more than 10% of body weight) that often affects people with AIDS.

Western blot - a blood test used to detect antibodies to HIV; used to confirm positive ELISA results.

Works – needles, syringes, and other equipment used to prepare and inject street drugs.

ZDV – see Zidovudine.

Zoonotic – diseases that primarily affect animals.

AIDS 101 SELF TEST

Answer each of the questions below. Complete the entire test before you check the answers, which can be found at the end of the manual. When you have completed the test and checked your answers, use the results of your test to tell you which areas of the manual need to be reviewed.

1. HIV stands for _____/_____/_____

2. AIDS stands for_____/_____/_____

3. Which mode of transmission has resulted in the largest number of AIDS cases in Louisiana?
   a) Injection drug use.
   b) Men having sex with men.
   c) Heterosexual contact.
   d) Men having sex with men and injection drug use.

4. Which of the following is not a term used to refer to the T-cell?
   a) T-4 lymphocyte.
   b) CD4.
   c) T-helper cell.
   d) All of the above are commonly used terms.

5. In Louisiana, HIV infection is increasing at the fastest rate among:
   a) Heterosexual women.
   b) Injection drug users.
   c) Men who have sex with men.
   d) Women who have sex with women.

6. True or False – Someone who is infected with HIV should restrict him/herself from working in the food industry.

7. Which of the following has the highest risk for transmitting HIV?
   a) Getting bitten by someone who is HIV infected.
   b) Open-mouth kissing with a stranger.
   c) Having anal intercourse with someone you've known for two weeks.
   d) Sharing a salad with someone who is HIV infected.

8. Which of the following is incorrect about condoms?
   a) Natural skin condoms do not provide adequate protection from HIV.
   b) Condoms should be used before the expiration date.
   c) Condoms should be in place before any genital contact.
   d) Cooking oil is a good lubricant to use with a latex condom.

9. Which of the following fluids does not contain HIV in infectious quantities?
   a) Blood
   b) Sweat
   c) Saliva
   d) Semen
   e) B and C

10. Condoms can be used over again:
   a) If new lubricant is applied.
   b) If they are used with the same person.
   c) Never

11. True or False – When cleaning works, it is okay to save the water and bleach to use again later.

12. In HIV antibody testing, the_____ test is used to confirm a positive _____ test.

13. What are antibodies?
   a) Cells in which HIV can replicate.
   b) A type of T-cell.
   c) Proteins that fight off infection.
   d) A type of bacteria naturally found in the body.

14. True Or False – It could take up to ten years for antibodies to HIV to appear in the blood of someone with HIV.

15. True of False – An HIV antibody test conducted immediately after an exposure may produce a negative test result in a person who has been infected.

16. A positive HIV test means a person:
   a) Has AIDS.
   b) Will get AIDS within the next five years.
   c) Does not have HIV or AIDS.
   d) Is infected with HIV.

17. What happens inside a T-cell that is infected with HIV?
   a) Genetic material of HIV attaches to the genetic material of the T-cell.
   b) HIV uses the cell to create more HIV.
   c) The T-cell forms a blood clot.
   d) A and B only.

18. A person with fewer than 200 T-cells who is experiencing night sweats, chronic diarrhea, and oral thrush is most likely at what stage of HIV disease?
    a) Stage 1.
    b) Stage 2.
    c) Stage 3.
    d) Stage 4.

19. True or False – Taking a combination of antiviral and prophylaxis medications can cure HIV infection.

20. STIs can:
    a) Increase the possibility of transmitting HIV.
    b) Cause HIV infection.
    c) Increase the possibility of infection by HIV.
    d) A and C only.
    e) A, B, and C.

ANSWERS TO SELF-TEST

1. Human Immuno-deficiency Virus.

2. Acquired Immune Deficiency Syndrome.

3. b – 51% of AIDS cases had the exposure category of "men having sex with men".

4. d – All are correct terms used to refer to the T-cell.

5. a – Louisiana is one of the few states in which the percentage of women currently infected with HIV is rising.

6. False – HIV is not spread through this type of contact.

7. c- Unprotected anal intercourse provides the greatest opportunity for the exchange of body fluids with the greatest concentration of the virus.

8. d – Any oil based lubricant will damage a latex condom.

9. e – B and C – HIV has not been found in the sweat of AIDS patients.

10. c – A new condom must be used for each new sex act.

11. False – Bleach and water should be disposed of after cleaning works.

12. Western blot….ELISA – Both tests must be positive for the test to be considered positive.

13. c – Antibodies are produced in response to infection.

14. False – Antibodies are formed within six months of HIV infection.

15. True – An antibody test performed within six months of exposure may produce a negative result.

16. d – A positive test is not indicative of whether the person has AIDS.

17. d- Retroviruses like HIV use living cells for their own replication.

18. c – Stage 3 of HIV disease is marked by the presence of opportunistic infections.

19. False – There is no known cure for HIV disease.

20. d – STIs increase both the susceptibility to and the infectiousness of HIV.