HIV/AIDS in the United States

• Almost every 9½ minutes, someone in the United States is infected with HIV.
  • In 2011, an estimated 49,273 people were diagnosed with HIV infection in the United States.*

• More than 1.1 million people in the United States are living with HIV infection.
  • Almost 1 out of 6 (15.8%) are unaware of their infection.

• An estimated 15,529 people with an AIDS diagnosis died in 2010.

• Approximately 636,000 people in the United States with an AIDS diagnosis overall. The deaths of persons with an AIDS diagnosis can be due to any cause—that is, the death may or may not be related to AIDS.

• There is NO CURE for HIV infection — but TREATMENT is available.
HIV/AIDS in the United States

Certain populations are more affected by HIV/AIDS than others in the United States.

• Men who have sex with men (MSM) are most severely impacted by HIV.
  – In 2011, more than half (62%) of all new diagnoses of HIV infection in the United States occurred in MSM.*
  – At the end of 2011, more than half (78%) of all men living with HIV are MSM.*
  – HIV infection among MSM has been increasing since the early 1990s.

• African Americans have disproportionately high rates of HIV/AIDS compared to other racial/ethnic groups.
  – Blacks accounted for nearly half (46%) of all new HIV infections in 2011.*
  – Blacks accounted for nearly half (43%) of all people living with a diagnosis of HIV by the end of 2009.*

• Latinos are also unequally affected by HIV/AIDS.
  – At the end of 2011, Latinos accounted for 22% of people living with an HIV diagnosis.*
Cities with High AIDS Rates (per 100,000 people) and Total Cumulative Cases

Cities with high rates of new AIDS diagnoses (>rate of 20):
- Miami
- New York City/Newark
- Washington, D.C.
- San Francisco
- Los Angeles
- Jackson
- Baton Rouge
- New Orleans
- New York City/Newark
- Washington, D.C.

Cities with highest total cases of AIDS (>20,000):
- Columbia
- Jacksonville
- San Juan, PR
- Chicago
- Philadelphia
- Baltimore
- Houston
- Atlanta
- Baltimore
- Orlando
- Fort Lauderdale
- Miami
- West Palm Beach
- Dallas
- Memphis
ALL ABOUT HIV/AIDS
What is HIV?

• **HIV** stands for **Human Immunodeficiency Virus**.

• HIV is the virus that causes **AIDS**.

• HIV attacks the immune system, which protects the body from infection.

• HIV locates and destroys **CD4+ cells** (or **T cells**), a type of white blood cell that helps the immune system fight disease.

• The only way to know if a person has HIV is for he/she to **get tested**.

• There is **NO CURE** for HIV infection, but **treatment** is available.
The HIV Life Cycle

1. HIV attaches to a CD4+ T cell by connecting to special parts on the outside of the cell called receptors.

2. HIV joins with the CD4+ T cell and inserts its contents into the cell.

3. An enzyme called reverse transcriptase helps change how HIV stores the information (RNA) it uses to function and multiply into how CD4+ T cells store information (DNA).

4. An enzyme called integrase helps combine HIV’s information into part of the CD4+ T cell’s DNA.

The HIV Life Cycle

1. HIV attaches to the CD4+ T cell via CD4 Cell Receptors.

2. HIV's genetic material enters the CD4+ T cell.

3. HIV genetic material is used to make more HIV proteins.

4. HIV genetic material is used to make more CD4+ T cell proteins.

5. An enzyme called protease makes the set of HIV proteins into a newly formed virus.

6. The new HIV virus breaks off from the cell, and the cycle begins again.

What is AIDS?

- **AIDS** stands for **Acquired Immune Deficiency Syndrome**.

- AIDS is the **late stage** of HIV infection.

- In AIDS, the immune system has been weakened so much that the body has a hard time fighting diseases and certain cancers.

- People with one or more specific infections, certain cancers or very low numbers of CD4+ cells are considered to have AIDS. **Only a doctor can diagnose AIDS.**

- Without treatment, people with HIV could progress to AIDS in just a few years.

- The is **NO CURE** for AIDS – but there is **TREATMENT** available.
How does HIV progress to AIDS?

**PRIMARY INFECTION**

When HIV enters the body, it infects hundreds of CD4+ cells and makes thousands of copies of itself (replicates). These virus copies spread throughout the body, hiding in cells. Many newly HIV-infected people suffer flu-like symptoms.

**IMMUNE RESPONSE**

Two to four weeks after infection, the immune system starts to fight back, greatly reducing the amount of HIV virus in the blood. The number of CD4+ cells bounces back, sometimes to its original number.

**CLINICAL LATENCY**

During this phase, people infected with HIV may have no symptoms for many years. However, HIV continues to make more copies of itself.

**PROGRESSION TO AIDS**

Eventually, the immune system breaks down and can’t fight off other infections, like pneumonia and tuberculosis. The number of HIV viruses in the blood skyrockets, while the number of CD4+ cells drops to a dangerously low level (less than 200 cells/mm³).
How is HIV transmitted?

• HIV is *primarily* spread through the **blood**, **semen** (cum) or **vaginal fluid** of an infected person.
  – Breast milk can also spread HIV.

• HIV is spread in 3 main ways:
  1. Having unprotected sex (anal, vaginal or oral) with someone who has HIV.
  2. Sharing needles, syringes or other drug “works” with someone who has HIV.
  3. Exposure to HIV before or during birth or through breast-feeding.

• HIV is **NOT** spread through day-to-day activities like:
  – Using the same toilet seat as an HIV+ person
  – Shaking hands
  – Closed-mouth kissing
  – Mosquito bites
Who’s at risk of getting HIV?

- A person may increase their risk of becoming infected with HIV by:
  - Having unprotected (without a condom) anal, vaginal or oral sex with MSM, multiple partners or anonymous partners
  - Injecting drugs by sharing needles or other drug “works” (syringes, etc.)
  - Having a sexually transmitted infection (STI; i.e. syphilis, herpes)
  - Having been diagnosed with hepatitis, tuberculosis or malaria
  - Exchanging sex for drugs or money (prostitution)
  - Being exposed to HIV as a fetus/infant before/during childbirth or through breastfeeding
HIV is a life-long illness with no cure and can be passed on to others.

Positive Prevention refers to ways that HIV+ people can prevent spreading HIV to others.

Following these simple rules can help to prevent transmission:
- First, understand how HIV is transmitted
- Talk to a health care professional (HCP) about safe sex practices/high risk behaviors honestly and openly
- Disclose HIV+ status to all partners (past and future)
- Use a condom and a water-based lubricant every time a person has sex
- NEVER use or share “works” (needles, syringes, etc.) if using injection drugs
- Women should consult with a HCP about preventing or safeguarding pregnancy
- Take medications as directed to lower VL to undetectable levels
What is a CD4 Count?

- **CD4/T-cell Count**: the number of CD4+ cells in a person’s blood.
- CD4 count measures how healthy someone’s immune system is and how well it fights infection *(immunosuppression)*.
  - Healthy CD4 Count: >500 cells/mm³
  - A CD4 Count of fewer than 200 cells/mm³ signals progression to AIDS.
- A low CD4 Count puts someone at risk of **opportunistic infections (OIs)**, which develop when the immune system is weak.
  - OIs are a serious threat to the health of HIV/AIDS patients.
- The lower the CD4 count, the higher the chance of getting sick.
- Some doctors prefer **CD4 Percentage** tests, which show the percentage of CD4 cells making up someone’s total white blood cell count.
  - This measurement is thought to be more stable than the CD4 count.
  - CD4 percent less than 14% is considered AIDS.
- CD4 count can be affected by fatigue, illness, stress and time of day.
- CD4 count should be tested at the same time of day and at the same lab each time.
Common Opportunistic Infections
A wide range of OIs can develop and affect the body of an HIV+ individual.

**BRAIN**
- Toxoplasmosis
- Cryptococcal meningitis
- Progressive multifocal leukoencephalopathy
- Encephalopathy

**EYES**
- Cytomegalovirus

**MOUTH/THROAT**
- Candidiasis

**GUT**
- Cytomegalovirus
- Cryptosporidiosis
- Mycobacterium avian complex
- Salmonella septicemia (recurrent)
- Isosporiasis

**SKIN**
- Kaposi’s sarcoma
- Herpes simplex (severe)

**GENITALS**
- Genital Herpes
- Vaginal Candidiasis
- Cervical cancer (invasive)

**LUNGS**
- *Pneumocystis carinii/jiroveci*
  - Pneumonia (PCP)
  - Pneumonia (recurrent)
  - Tuberculosis (TB)
  - Histoplasmosis

**OTHER**
- Lymphoma
- Wasting disease
- Coccidioidomycosis
What is Viral Load?

- **Viral Load (VL)** is the amount of HIV virus, or HIV RNA, in a person’s blood.

- To maintain health, it’s important to keep viral load at **undetectable** levels.
  - Undetectable simply means that the viral load is too low to be picked up by testing.
  - Undetectable **DOES NOT** mean HIV has been wiped out from the body or cured.
  - There is no “safe” viral load – HIV **CAN** be spread even at undetectable levels.

- People with a high VL are more likely to progress to AIDS faster than those with lower levels of HIV.
  - Anyone with a viral load over 100,000 cells/mL should be offered treatment.
What HIV screening tests are available?

• When someone becomes infected with HIV, the body makes antibodies, or disease-fighting chemicals, to try to kill the virus.
  – HIV antibodies can’t kill HIV, but they can be used to detect it in the body.

• There are two common tests used to test for HIV infection:
  – The most common HIV screening tests use blood to detect HIV infection.
  – **Enzyme immunoassay (EIA) test:** detects HIV antibodies in a blood, urine or saliva sample.
  – **Western blot test:** a more accurate antibody test used to **confirm** preliminary screening results.

• Other HIV test options include:
  – **Rapid testing:** uses blood or saliva to test for HIV antibodies, with results in approximately 20 minutes – must be confirmed by follow-up test.
  – **Home testing kits:** blood sample is taken at home and mailed to a testing center for results – must be confirmed by follow-up test.
    • Only the Home Access HIV-1 Test System is FDA-approved for home testing.
Knowing one’s HIV status is very important, both for preventing the spread of HIV and for accessing medical care and treatment services should someone be infected.

The US Centers for Disease Control and Prevention (CDC) recommends routine HIV screening in health care settings for all adults, aged 13-64, and all pregnant women.

Testing is important, as many people with HIV are diagnosed late in the course of their illness.

- Those at high risk for HIV should be tested routinely.
- The earlier someone knows their HIV+ status, the sooner they can enter into care and treatment.
HIV/AIDS TREATMENT
What are the goals of HIV treatment?

- Current antiretrovirals (ARVs), or HIV medications, can’t cure HIV/AIDS, but they may achieve these goals:
  - Suppress viral load (VL) as much as possible and for as long as possible
  - Reduce HIV-related death and disease and prolong life
  - Restore and maintain immune system function
  - Prevent transmitting HIV to others
When should HIV treatment start?

- The US Department of Health and Human Services (DHHS) provides regularly updated guidelines on HIV treatment for health care professionals (HCPs).

- Your clients should talk to their HCPs about the best time to start treatment.

- HIV treatment is recommended for all HIV-infected individuals. Your clients are recommended to start treatment if they:
  - Have a CD4 count at or below 500 cells/mm$^3$
    - Some HCPs recommend starting earlier treatment at >500 cells/mm$^3$
  - Have been diagnosed with AIDS or an AIDS-defining illness
  - Are pregnant or are thinking about becoming pregnant
  - Have HIV-related kidney disease
  - Are being treated for hepatitis B

- HIV treatment is a **life-long commitment**. Your clients must be prepared to always take their medications as directed (with or without food and at specific times during the day) and to cope with side effects should they occur.
What is a baseline evaluation?

• When your clients enter care with a doctor or other HCP, they need to have a **baseline evaluation** to find out about their current health and to determine the need to start HIV treatment.
  – The evaluation should include a complete medical history, a physical exam, HIV counseling and a number of lab tests.

• A baseline evaluation includes these lab tests:
  – CD4 Count
  – Viral Load (Plasma HIV RNA)
  – Drug resistance testing (genotypic)
  – Complete blood count (CBC)
  – Blood chemistry
  – Urinalysis
  – Blood sugar test
  – Lipid test
  – Pap smear (for women)
  – Screening for co-infections like hepatitis, tuberculosis or other sexually transmitted disease (e.g. chlamydia, gonorrhea)
  – HIV antibody testing (if no past results are available or if viral load is undetectable)
What is Drug Resistance?

- All clients entering into care should be tested for drug resistance, whether or not they’ll be starting treatment.
  - When HIV makes copies of itself, many are slightly different from the original — these mutated viruses may not be controlled by a patient’s drug regimen (drug resistance) and continue to make copies of themselves even with treatment.

- Before a health care professional (HCP) can recommend treatment, it’s important to know if the client’s HIV strain is already resistant to certain drugs.
  - Genotypic resistance testing is the recommended type of drug resistance test. It tests for drug resistance mutations in the genes of the HIV virus.
    - Results of this test are usually available in 1-2 weeks.
  - Another type of resistance test is phenotypic testing, which measures the ability of the virus to grow in different concentrations of ARV medicines.
    - Results of this test are usually available in 2-3 weeks.
    - Phenotypic testing is more expensive than genotypic testing.
<table>
<thead>
<tr>
<th>Test Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Chemistry</td>
<td>Measures chemicals in the blood to make certain parts of the body are working properly. Should be done every 3-6 months or more often depending on medications being taken.</td>
</tr>
<tr>
<td>Complete Blood Count</td>
<td>Measures the amount of different types of blood cells in the body. Should be done every 3-6 months.</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>Examines the urine to make sure illnesses or problems with the kidneys aren’t being developed.</td>
</tr>
<tr>
<td>Blood Sugar Test</td>
<td>Tests for risk factors related to diabetes. Should be done about once a year or more often if deemed necessary.</td>
</tr>
<tr>
<td>Lipid Panel</td>
<td>Measures the fats in the blood and alerts HCP about risks for heart disease and stroke. Should be done about once a year or more often, depending on medicines and overall health.</td>
</tr>
<tr>
<td>Pap Smear</td>
<td>Tests for abnormal cells in the anus or vagina. A critical test for HIV+ women, who are at high risk for developing cervical cancer.</td>
</tr>
<tr>
<td>Others Tests</td>
<td>Tests for infections such as hepatitis, tuberculosis and sexually transmitted diseases.</td>
</tr>
</tbody>
</table>
There are multiple classes of antiretroviral drugs used to treat HIV/AIDS:

- **Entry/Fusion Inhibitors**: block HIV from entering the CD4 cell.
- **Nucleoside Reverse Transcriptase Inhibitors (NRTIs)**: pretend to be the building blocks that HIV needs to multiply. When HIV uses a “nuke” instead of the usual cell structure, HIV cannot complete the copying process.
- **Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)**: work by sticking tightly to a protein that HIV needs to make more copies of itself. The protein becomes unusable to the HIV virus and it can’t complete the copying process.
- **Integrase Inhibitors (INSTI)**: block or prevent HIV from putting itself into the DNA of CD4 cells.
- **Protease Inhibitors (PI)**: prevent new copies of HIV from becoming infectious. PIs inhibit a protein called protease, and without it, HIV can’t make copies of itself.

HIV treatment requires a combination of ARVs.
Common Side Effects of HIV Meds

**FACE**
- Lipoatrophy
  Loss of fat in cheeks, temples or extremities

**SKIN**
- Rashes

**BODY**
- Lipodystrophy
  Increase in abdominal size, breast size, and/or dorsocervical fat pad (buffalo hump)

**HEART**
- Hyperlipidemia, High Cholesterol and High Glucose
  Increase in the amount of fat, cholesterol, or sugar in the blood that can lead to heart disease

**LIVER**
- Hepatotoxicity
  Liver damage

**KIDNEYS**
- Nephrotoxicity, Kidney Stones
  Kidney damage

**GUT**
- Nausea, Diarrhea and Vomiting

**BONES**
- Osteoporosis, Osteopenia
  Bone loss

**NERVES**
- Neuropathy
  Nerve damage causing strange sensations and pain, starting in the hands/feet
Importance of Adherence

• **Adherence** means taking medications correctly and as directed by a health care professional (HCP).

• Studies have shown that people must take over 90% of their medications correctly to keep their HIV under control.

• If someone doesn’t adhere to their pill regimen, **drug resistance** can occur.
  – HCPs recommend HIV patients take a combination of three medications from different classes because it makes it harder for resistance to develop.
  – If resistance develops against one drug in a drug class, the HIV virus in a person’s body can become resistant to all drugs in that class – this is called **cross-resistance**.

• It’s very important to adhere to one’s drug regimen to avoid using up future treatment options.
Stopping or Changing HIV Meds

Sometimes your clients may be directed to change their medications by their health care professionals (HCP). This can happen for many reasons:

• **HIV medications stop working (regimen failure)**
  – May result from not taking drugs correctly, using drugs or alcohol, or from drug resistance.

• **Drug interactions**
  – Some drugs your clients take for other conditions can make their HIV medications less effective.

• **Tolerability**
  – Some drugs may cause severe side effects that make them hard to use.

• **Adherence**
  – Some patients may have trouble keeping up with certain medications that require many pills or need to be taken at certain times of the day with or without food.

• **Your clients should not stop taking their HIV medications unless directed to do so by their doctor or other HCP.**
MSM stands for “men who have sex with men” and does not include self-identification as gay, bisexual or straight.

MSM continue to be the group most severely affected by HIV/AIDS in the United States.

– It is the only risk group in the United States in which the number of new HIV infections each year grows, and has been steadily increasing since the early ‘90s.

MSM and MSM that use intravenous drugs made up more than half (65%) of the people in the United States living with a diagnosis of HIV in 2011.*

More than half of all new HIV diagnoses in 2011 (62%) occurred in MSM.

Young black MSM are severely affected and now account for more new infections than any other subgroup of MSM by race/ethnicity and age.
Client Focus: Black Americans

- African Americans account for more: new HIV infections, AIDS cases, People living with HIV …than any other racial/ethnic group in the United States.

- Blacks accounted for nearly half (46%) of new HIV infections in the United States in 2011.*

- Blacks accounted for more than half (47%) of all people living with an HIV diagnosis at the end of 2011.*

- Stigma about HIV/AIDS in the African-American community, particularly toward MSM, keeps many individuals away from testing and treatment.
• Hispanics/Latinos are the largest and fastest growing ethnic minority group in the United States.

• In 2011, Hispanics/Latinos had higher rates of new HIV and AIDS diagnoses than whites.*

• Studies have found high HIV/AIDS prevalence among Hispanic/Latino MSM.

• Cultural factors, including traditional gender roles for Latin men, may lead some HIV+ Latinos, particularly MSM, to avoid diagnosis and treatment.
  – Language barriers may also keep some Hispanics/Latinos away from care and treatment.
Since highly active antiretroviral therapy (HAART) was introduced, the number of people 50 and over living with HIV/AIDS in the United States has been increasing.

Many older persons that are sexually active may not be practicing safer sex to reduce their risk for HIV infection.

Stigma associated with HIV/AIDS may be worse for older people, especially in minority populations, and they may worry about seeking services.
Women have been greatly affected by the HIV epidemic, particularly African-American women.

- While African-American women account for only 13% of women in the United States, they account for 63% of estimated new HIV diagnoses among women.*
- The AIDS case rate for African-American women is nearly 20 times that of white women.*

Many women with HIV are low-income and have children under their care, which may affect how well they tend to their illness.

Women can pass HIV to their babies through pregnancy, delivery and breastfeeding.
- However, mother-to-child transmission of HIV has greatly decreased since ARV treatment was introduced.
DIRECTING PATIENTS TO CARE
Helping your client find a doctor

• HIV patients must work with many different types of health care professionals (HCP).
• Your clients’ HCP should have experience treating HIV/AIDS at all stages.
• Your clients should be comfortable with their HCP as they will be working closely to manage their care and HIV treatment.
• It’s important that you help your clients devise a system to track their many appointments.
• Coach your clients on the questions they should feel comfortable asking their HCP BEFORE their visit to the clinic or hospital.
Questions for clients to ask their HCP

**GENERAL HEALTH**
- What should I change about my daily life to stay healthy?
- What can’t I do now that I have HIV?
- Should I be worried about any other diseases now?
- How can I prevent spreading my HIV?

**MEDICAL TESTS**
- What tests will I have done?
- What does each test show?
- How often do I have to take these tests?
- What do the results of each test mean?
Questions for clients to ask their HCP

**TREATMENT**
- What do HIV medications do?
- What are the risks/benefits?
- When should I start treatment?
- What happens if my drugs don’t work?

**TAKING MEDICATIONS**
- What are the specific instructions for my meds?
- What medications shouldn’t I take with them?
- How do I make sure I’m taking my meds right?
- How can I be sure my meds are working?

**SIDE EFFECTS**
- What side effects should I watch out for?
- How can I deal with those side effects?
- Should I tell my HCP about any side effects?
Access Tools for Your Clients

To Find a Health Care Professional (HCP), Visit:

American Academy of HIV Medicine

HIV Medicine Association
https://www.hivma.org/cvweb/cgi-bin/memberdll.dll/ OpenPage?WRP=hivma_member_search.htm&wmt=none
Access Tools for Your Clients

The Ryan White Program
The largest federal aid program for HIV/AIDS in the US helps more than half a million people and their families each year to get medical and dental care, medications and other services. To locate a program near your client, visit: http://careacttarget.org/community.asp.

AIDS Drug Assistance Programs (ADAPs)
ADAPs provide HIV treatment to low income, uninsured, and underinsured individuals living with HIV in the US as part of the Ryan White Program.

HIV/AIDS Hotlines
Each state provides information by phone about HIV/AIDS and HIV/AIDS treatment that your clients can call for more information. http://hab.hrsa.gov/-gethelp/statehotlines.html

Disability Benefits
If your client can’t work because of their HIV/AIDS, they may qualify for benefits from the Social Security Administration in the form Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI). http://www.socialsecurity.gov, 1-800-772-1213
Medicare
About 100,000 people with HIV get their care through Medicare, the federal health insurance plan for people aged 65 and older and younger adults with permanent disabilities (qualify after two years of receiving SSDI). Medicare provides coverage for basic health care services including hospital care, physician and clinic visits, and some medications.
http://www.medicare.gov, 1-800-633-4227

Medicaid
About 4 in 10 people with HIV receive coverage from Medicaid, a federal program providing health coverage for the low-income and disabled. All states offer coverage for hospital services, doctor and lab services, long-term care and prescription drugs for people with HIV through this program.
http://www.cms.hhs.gov/home/medicaid.asp

Veterans Benefits
Your clients may benefit from Veteran’s Administration (VA) benefits and services if they or a family member served in the military.
http://www.hiv.va.gov
THANK YOU!