



Introduction to HIV

Malinda Boehler, MSW, LCSW
Director, Midwest AIDS Education and Training Centers
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Disclaimer

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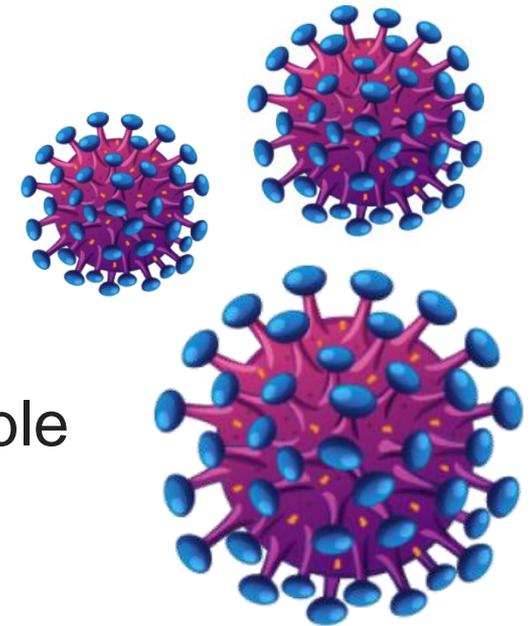
- Speaker has no conflicts to disclose.

Learning Objectives

- Explain the difference between HIV and AIDS.
- Describe the stages of HIV infection and name two laboratory tests used to monitor HIV infection.
- Name at least two tools for preventing HIV infection.
- Discuss how HIV viral load affects risk of HIV transmission.

What is HIV?

- Human Immunodeficiency Virus (HIV)
- Attacks cells that help the body fight infection, making a person more vulnerable to other infections and diseases
- HIV is a type of virus called a retrovirus
- Goes through three distinct stages
- Spread by contact with certain bodily fluids of a person with HIV, most commonly during unprotected sex (sex without a condom or HIV medicine to prevent or treat HIV), or through sharing injection drug equipment



HIV Virus

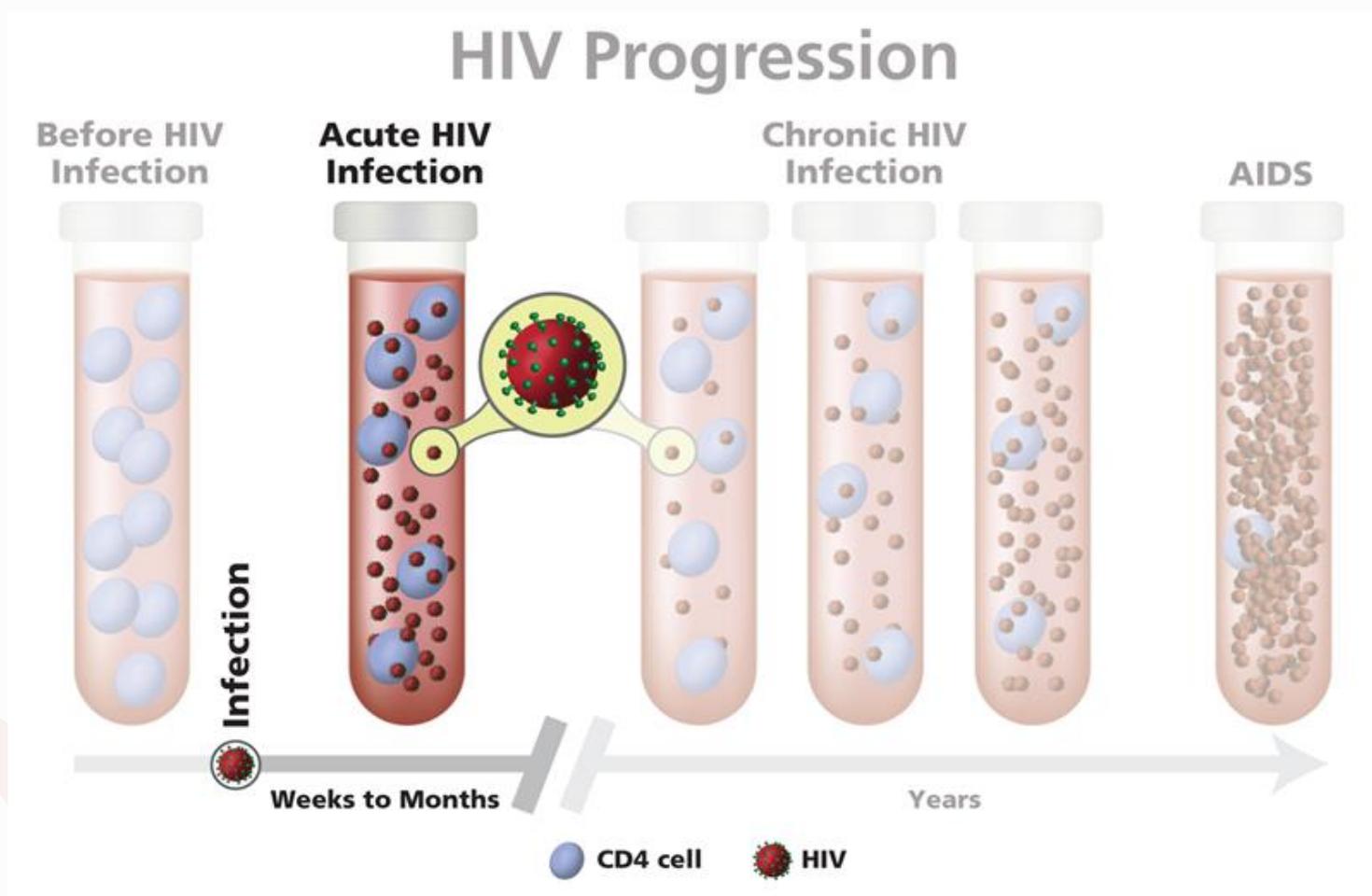


Can we use the terms HIV and AIDS interchangeably?

What is AIDS?

- Acquired Immune Deficiency Syndrome (AIDS)
- AIDS is the late stage of HIV infection that occurs when the body's immune system is badly damaged because of the virus
- A person with HIV is considered to have progressed to AIDS when:
 - The number of their CD4 cells falls below 200 cells per cubic millimeter of blood (200 cells/mm³), **OR**
 - They develop one or more opportunistic infections regardless of their CD4 count

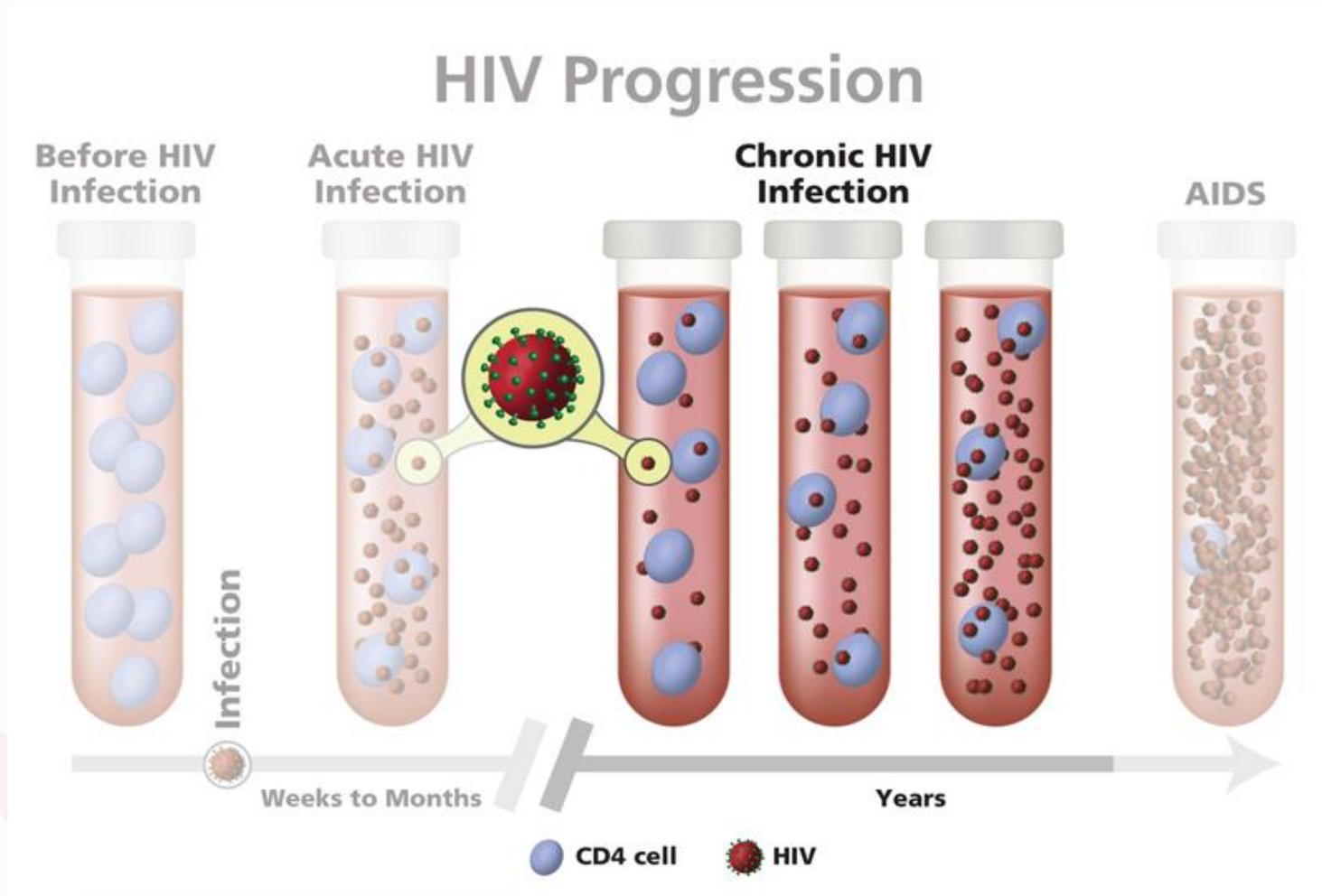
Acute HIV Infection



Symptoms of Acute Infection

- Within **2 to 4 weeks after infection with HIV**, some people will have a **flu-like illness**
- This is the body's natural response to HIV infection. Symptoms can include:
 - Fever
 - Chills
 - Rash
 - Night sweats
 - Muscle aches
 - Sore throat
 - Fatigue
 - Swollen lymph nodes
 - Mouth ulcers

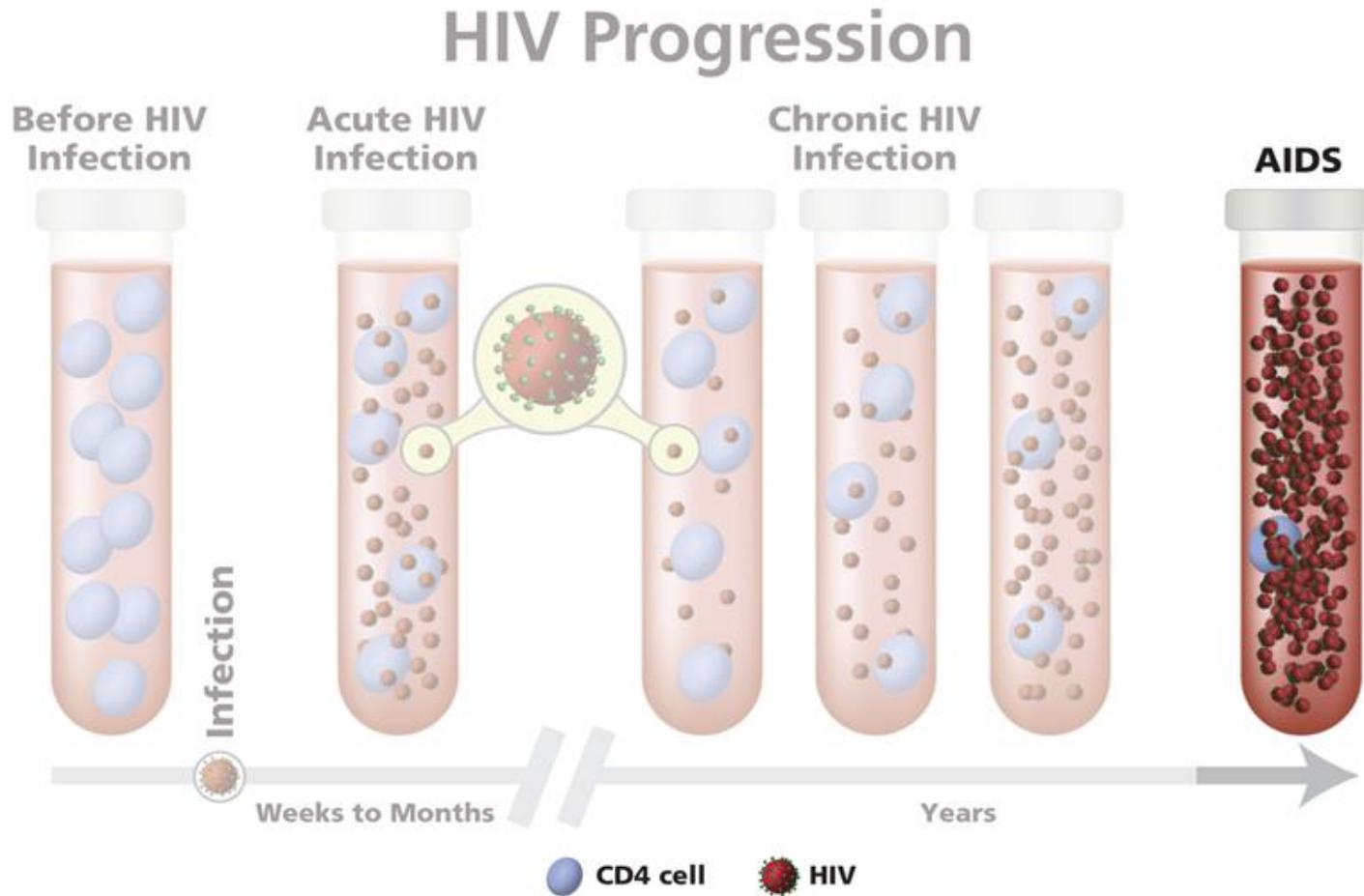
Chronic HIV Infection



Symptoms of Chronic HIV Infection

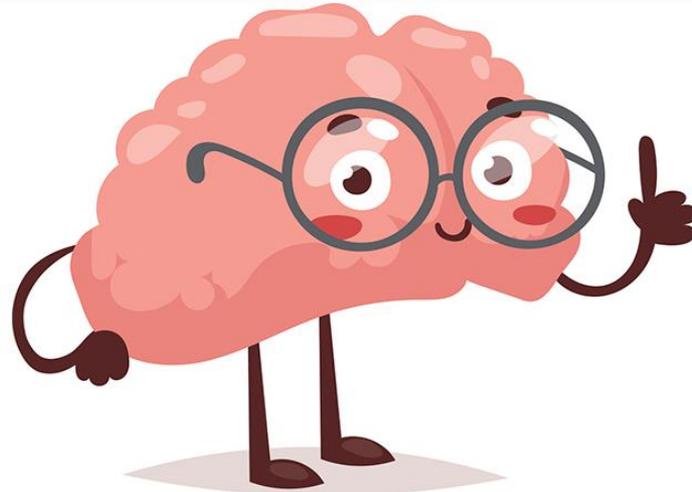
- This stage is called **clinical latency**
- People in this stage **may not feel sick** or have any symptoms
- **Virus is still multiplying**, but at very low levels
- Without HIV treatment, people can stay in this stage for 10 to 15 years, but some move through this stage faster

AIDS



Symptoms of AIDS

- Without HIV treatment, eventually the virus weakens the body's immune system and progresses to AIDS
 - Also called late stage of HIV infection
- Symptoms of AIDS can include:
 - Rapid weight loss
 - Recurring fever or profuse night sweats
 - Extreme and unexplained tiredness
 - Prolonged swelling of the lymph glands in the armpits, groin, or neck
 - Pneumonia
 - Diarrhea that lasts for more than a week
 - Sores of the mouth, anus, or genitals
 - Red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids
 - Memory loss, depression, and other neurologic disorders



In which stage of HIV infection is a person with HIV most likely to transmit HIV to someone else through sexual contact?

HOW CAN YOU TELL IF YOU HAVE HIV?

You **can't** rely on symptoms to tell
if you have HIV.

The **only** way to know for sure is
to **GET TESTED!**

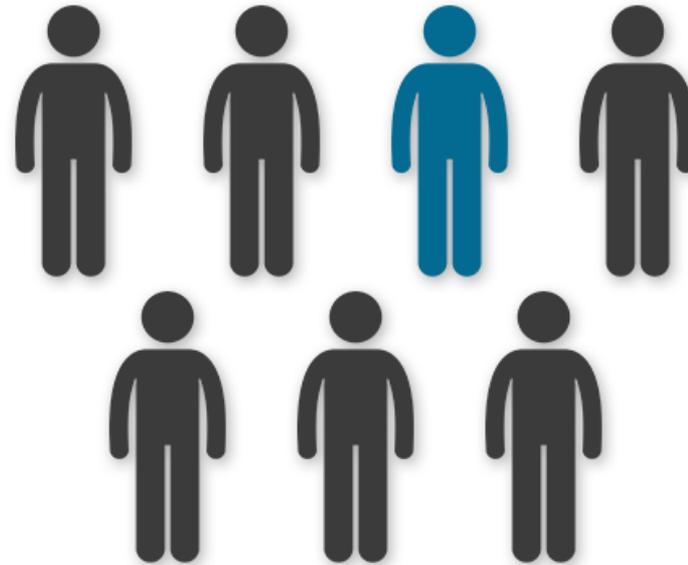


Where To Get Tested

- **Ask your health care provider** for an HIV test
 - Many medical clinics, substance abuse programs, community health centers, and hospitals offer them, too
- **HIV self-testing** is also an option
 - Self-testing allows people to take an HIV test and find out their result in their own home or other private location
 - A self-test kit can be bought at a pharmacy or online
 - Some health departments or community-based organizations also provide self-test kits for free

Why is HIV Testing Important?

1 in 7 living with HIV



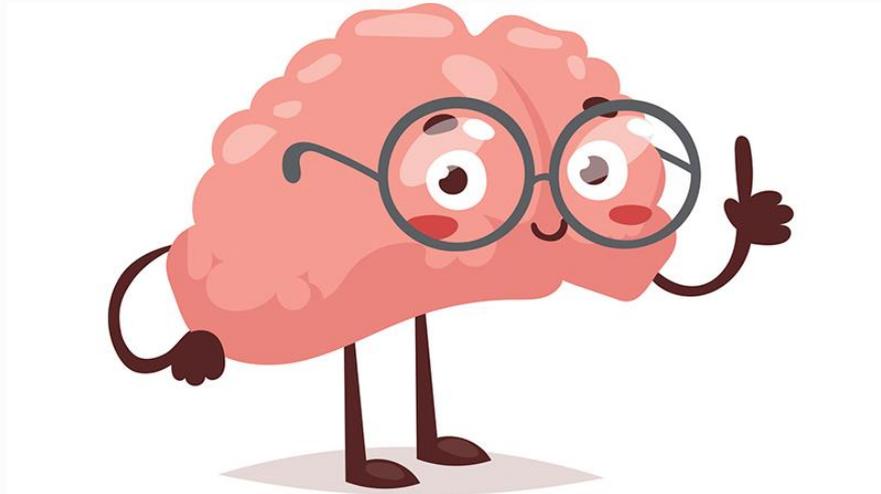
are **unaware** of their infection.

How Is HIV Transmitted?

- You can only get HIV by coming into direct contact with certain body fluids from a person with HIV who has a detectable viral load:
 - Blood
 - Semen (*cum*) and pre-seminal fluid
 - Rectal fluids
 - Vaginal fluids
 - Breast milk
- For transmission to occur, the HIV in these fluids must get into the bloodstream of an HIV-negative person through:
 - A mucous membrane found in the rectum, vagina, mouth, or tip of the penis
 - Open cuts or sores
 - By direct injection

How HIV Is NOT Transmitted

- Air or water
- Mosquitoes, ticks or other insects
- Saliva, tears, or sweat that is not mixed with the blood of a person with HIV
- Casual contact - Shaking hands; hugging; sharing toilets; sharing dishes, silverware, or drinking glasses; or engaging in closed-mouth or “social” kissing
- Drinking fountains
- Other sexual activities that don’t involve the exchange of body fluids (for example, touching)
- HIV can’t be passed through healthy, unbroken skin



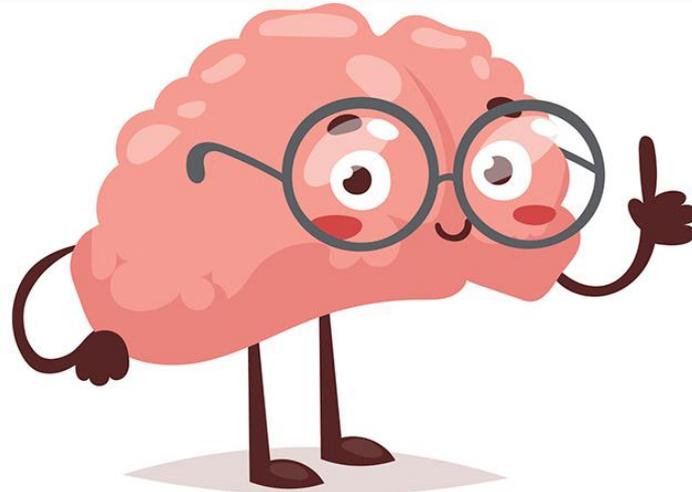
Who in your community might be a priority population for HIV prevention and testing?

Priority Populations in the U.S.

- Gay and bisexual men have the largest number of new diagnoses in the United States
- Blacks/African Americans and Hispanics/Latinos are disproportionately affected by HIV compared to other racial and ethnic groups
- Transgender women who have sex with men
- Injection drug users

Tools for Preventing HIV Infection

- Abstinence (not having sex)
- Limiting the number of sexual partners
- Never sharing injecting supplies
- Using condoms the right way every time you have sex
- Pre-exposure prophylaxis (PrEP)
- Post-exposure prophylaxis (PEP)



***Where can people access PrEP
in your community?***

Also Consider.....

People with HIV can also take action to prevent transmission to others:

- Take HIV medicine (called antiretroviral therapy or ART) as prescribed to achieve and maintain HIV viral suppression
- Maintain a suppressed HIV viral load (also known as an undetectable viral load)
 - Effectively no risk of transmitting HIV to an HIV-negative sex partner

HIV CARE CONTINUUM:

The series of steps a person with HIV takes from diagnosis through their successful treatment with HIV medication.



HIV Treatment

- HIV treatment involves taking medicines that slow the progression of the virus in the body
- The combination of drugs used to treat it is called antiretroviral therapy (ART)
- ART is recommended for all people with HIV, regardless of how long they have had the virus or how healthy they are
- ART must be taken every day, exactly as the health care provider prescribes

FDA Approval of HIV Medicines

- **1987:** *Zidovudine (NRTI)*
- **1991:** *Didanosine (NRTI)*
- **1992:** *Zalcitabine (NRTI)*
- **1994:** *Stavudine (NRTI)*
- **1995:**
 - Lamivudine (NRTI)
 - Saquinavir (PI)
- **1996:**
 - *Indinavir (PI)*
 - Nevirapine (NNRTI)
 - Ritonavir (PI)
- **1997:**
 - Combivir (FDC)
 - *Delavirdine (NNRTI)*
 - *Nelfinavir (PI)*
- **1998:**
 - Abacavir (NRTI)
 - Efavirenz (NNRTI)

Italicized = no longer available and/or no longer recommended for use in the U.S.

FDA Approval of HIV Medicines

- **1999:** *Amprenavir (PI)*
- **2000:**
 - *Didanosine EC (NRTI)*
 - Kaletra (FDC)
 - Trizivir (FDC)
- **2001:** Tenofovir DF (NRTI)
- **2003:**
 - Atazanavir (PI)
 - Emtricitabine (NRTI)
 - Enfuvirtide (FI)
 - Fosamprenavir (PI)
- **2004:**
 - Epzicom (FDC)
 - Truvada (FDC)
- **2005:** Tipranavir (PI)
- **2006:**
 - Atripla (FDC)
 - Darunavir (PI)

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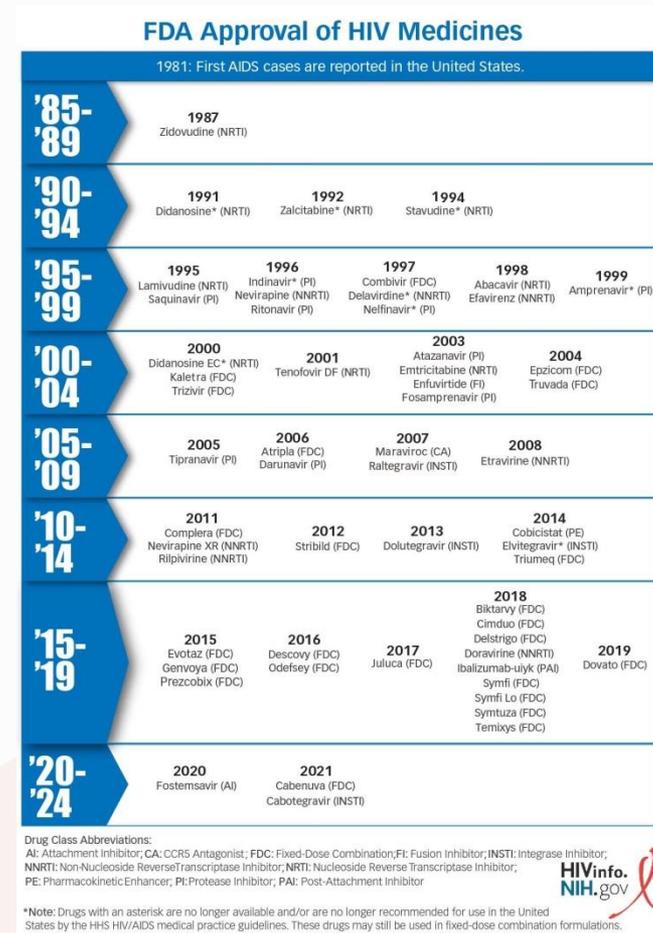
FDA Approval of HIV Medicines

- **2007:**
 - Maraviroc (CA)
 - Raltegravir (INSTI)
- **2008:** Etravirine (NNRTI)
- **2011:**
 - Complera (FDC)
 - Nevirapine XR (NNRTI)
 - Rilpivirine (NNRTI)
- **2012:** Stribild (FDC)
- **2013:** Dolutegravir (INSTI)
- **2014:**
 - Cobicistat (PE)
 - Elvitegravir (INSTI)
 - Triumeq (FDC)
- **2015:**
 - Evotaz (FDC)
 - Genvoya (FDC)
 - Prezcobix (FDC)
- **2016:**
 - Descovy (FDC)
 - Odefsey (FDC)
- **2017:** Juluca (FDC)

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FDA Approval of HIV Medicines

- **2018:**
 - Biktarvy (FDC)
 - Cimduo (FDC)
 - Delstrigo (FDC)
 - Doravirine (NNRTI)
 - Ibalizumab-uiyk (PAI)
 - Symfi (FDC)
 - Symfi Lo (FDC)
 - Symtuza (FDC)
 - Temixys (FDC)
- **2019:** Dovato (FDC)
- **2020:** Fostemsavir (AI)
- **2021:**
 - Cabenuva (FDC)
 - Cabotegravir (INSTI)



Downloadable infographic of FDA approval of HIV medicines from HIVInfo.NIH.gov

Four Things to Remember

- HIV treatment is recommended for everyone with HIV
- HIV medicines do not cure HIV, but they can help people with HIV live longer, healthier lives
- People with HIV take a combination of HIV medicines every day to prevent HIV from advancing to AIDS
- HIV medicines reduce the risk of HIV transmission

Monitoring HIV – CD4 Count

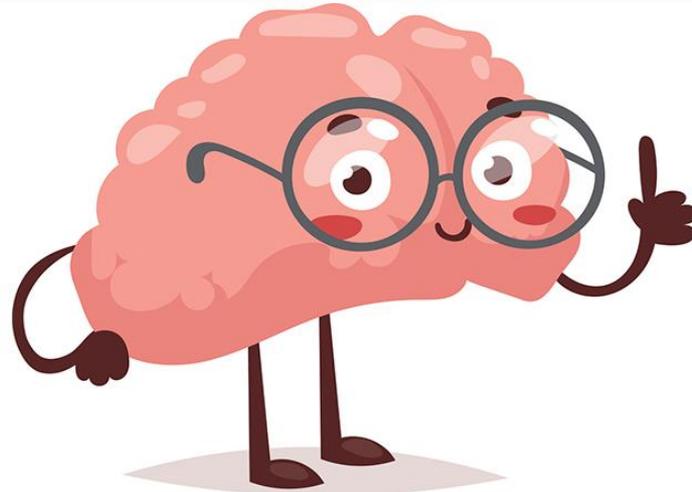
- CD4 cells are sometimes also called T-cells, T-lymphocytes, or helper cells
- CD4 cells are white blood cells that play an important role in the immune system
 - Body's natural defense system against pathogens, infections and illnesses
- CD4 cell count is the number of blood cells in a cubic millimeter of blood (a very small blood sample)
 - It is not a count of all the CD4 cells in the body
- A higher CD4 count indicates a stronger immune system



What could we say about your immune system if your CD4 count is below 200?

Monitoring HIV – Viral Load

- HIV viral load is the term used to describe the amount of HIV in a person's blood
- HIV viral load tests measure the number of copies of HIV RNA in a milliliter of blood
- The more HIV there is in the blood (and therefore the higher HIV viral load), the faster the CD4 cell count will fall, and the greater the risk of becoming ill because of HIV
- If there is so little HIV in your blood that it is difficult to find, then we say the viral load is “undetectable”



***Would you want your HIV viral load
to be high or low?***

Undetectable=Untransmittable (U=U)

When a person is living with HIV and is on effective treatment, it lowers the level of HIV (the viral load) in the blood. When the levels are low (below 200 copies/ml of blood measured) it is referred to as an undetectable viral load. This is also medically known as virally suppressed. At this stage, HIV cannot be passed on sexually.



Stigma

Stigma refers to a process by which a group of individuals are labeled as socially undesirable and these individuals are devalued due to attributes or behaviors that are societally deemed as “deeply discrediting.”



Impact of Stigma

Stigma has negative effects on:

- Accessing medical care
- Medical visit adherence
- Medication adherence
- Mental Health (High Rate of Depression)
- Quality of life (Lower)

Combating Stigma

▪ **Protect**

- Decriminalization
- Anti-discrimination laws

▪ **Include**

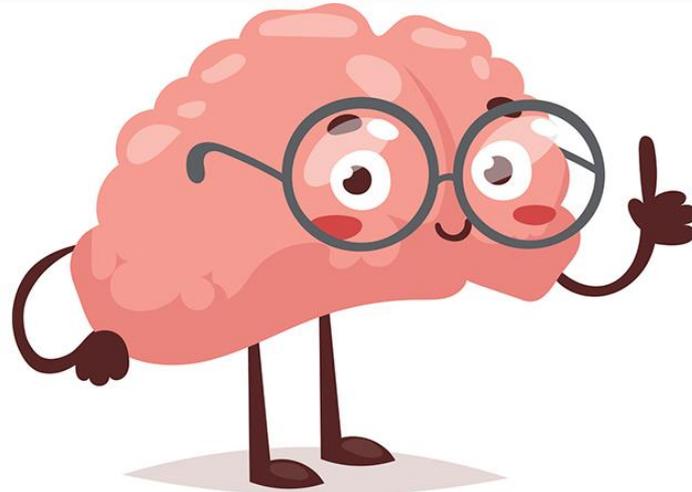
- Key populations in service design and implementation
- Goals for reducing stigma

▪ **Empower**

- To understand rights
- To act on violations

▪ **Educate**

- To address fears
- To challenge attitudes



QUESTIONS FOR ME?

Contact Information

Malinda Boehler

Director, MAETC Indiana

Email: mboehler@iupui.edu

Phone: 317-880-3520

matecindiana.com