

# HIV & AIDS



# Today's workshop is sponsored by BSAS

---



## The Bureau of Substance Addiction Services:

- Provides access to addictions services for the uninsured
- Funds and monitors prevention, intervention, treatment and recovery support services
- Licenses addictions treatment programs and counselors
- Tracks statewide substance use trends
- Develops and implements policies and programs
- Supports the addictions workforce

## Helpful Websites

### **BSAS:**

[www.mass.gov/dph/bsas](http://www.mass.gov/dph/bsas)

**Helpline:** [www.helpline-online.com](http://www.helpline-online.com)

### **Careers of Substance:**

[www.careersofsubstance.org](http://www.careersofsubstance.org)

**BSAS oversees the statewide system of prevention, intervention, treatment, and recovery support services for individuals, families, and communities affected by gambling and substance addiction**

# Required Disclosures for CEUs

## ANCC Accreditation Statement

- This continuing nursing education activity was approved by the Maryland Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation
- In order to successfully complete this activity and receive full contact-hour credit for this CNE activity, you must:
  - Attend all 3-hours of the course
  - Participate in course discussions

## Activity Purpose and/or Learning Outcomes:

- Explain how HIV disrupts a healthy immune system
- Identify how HIV is transmitted
- Describe the disease progression of HIV & AIDS
- Identify the demographics of new HIV cases and factors that affect it
- Identify harm reduction strategies to reduce risk of HIV transmission
- Review the process and benefits of HIV testing
- Explain the treatment mechanism of HIV medications and the role they play in protecting the immune system and reducing transmission
- Employ key discussion points for educating clients on HIV & AIDS treatment and prevention

## Conflicts of interest

There is no conflict of interest for any planner or presenter of this activity

# Agenda

---

- History of HIV/AIDS
- Demographics
- HIV Overview
  - Transmission
  - Disease progression
  - Testing
  - Treatment & Prevention
- Supporting clients at risk for or living with HIV



# True or False?

---

If someone tests positive for HIV, as a provider you have a professional obligation to notify his/her/their partner

**False:** Under Massachusetts law, a provider is forbidden from disclosing a client's status to anyone unless the client gives written consent



# True or False?

---

If someone lies about their HIV status to a new partner, and the new partner becomes infected, he/she/they can face criminal charges

**False:** There are no specific criminal laws in Massachusetts concerning the transmission of the HIV virus



# True or False?

---

People under 18 may give consent to be tested for HIV without parental permission

**True.** Anyone may consent to an HIV Test



# True or False?

---

While incarcerated, people in prison are required to take an HIV test annually in the state of Massachusetts

**False.** No one can ever be required to take an HIV test under any circumstances



# True or False?

---

It is my job to talk to clients about their sexual health

**True.** You are a healthcare provider and sexual health is a vital component of healthcare

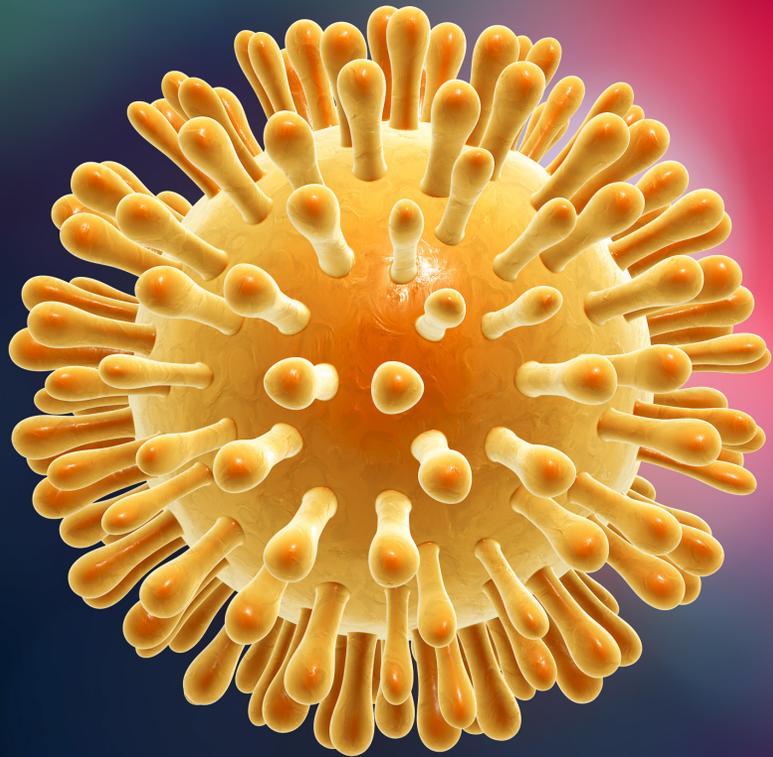


# What is HIV?

---

- HIV (Human Immunodeficiency Virus) is a virus that attacks the body's immune system
- Our immune system is made up of white blood cells (CD4 t-cells) which are on constant patrol looking for pathogens
- When they find a target, they begin to multiply and send signals out to the other cells to destroy the bacteria or virus
- HIV destroys these cells, making a person vulnerable to infections and other diseases





# What is AIDS?

---

- AIDS (Acquired Immune Deficiency Syndrome) is the end stage of HIV
- The immune system is so badly damaged, the body can no longer fight off infections and disease
- Untreated HIV typically turns into AIDS in about 10 years



**History of  
HIV &  
AIDS**

# HIV & AIDS Timeline

---



- Scientists identified a type of chimpanzee in Central Africa as the source of HIV infection in humans
- The chimpanzee version of the virus (called simian immunodeficiency virus, or SIV) most likely was transmitted to humans after being hunted for food
- Studies show that HIV may have jumped from apes to humans as far back as the late 1800s
- Over decades, the virus slowly spread across Africa and later into other parts of the world; it has existed in the United States since at least the mid to late 1970s

# HIV & AIDS Timeline

---

1981

CDC reports 1<sup>st</sup> cases of young, gay men dying from Pneumocystis Pneumonia. Considered very unusual in otherwise healthy, young men

1982

Initially known as GRID (Gay Related Immune Deficiency), the new term AIDS is adopted by the CDC. Realize it is sexually transmitted

1984

U.S. announces that the virus which causes AIDS has been identified

1985

First HIV screening test is approved by the FDA. Rock Hudson dies. Ryan White is not allowed to return to school after his AIDS diagnosis

# Ryan White

---

- American teenager with hemophilia
- Contracted HIV and AIDS after a blood treatment
- Diagnosed at the age of 13, he given 6 months to live
- Became the face of public education on HIV and AIDS after ban from school
  - Doctors said he posed no risk to other students, but AIDS was poorly understood by the general public at the time
- Lived five years longer than predicted. He died on April 8, 1990, one month before his high school graduation



# HIV & AIDS Timeline

---

- Homophobia and the idea of “throw away” populations (4H Club) was significant in the early days of HIV & AIDS
- Fueled the stigma of HIV. Being diagnosed often meant being outed as gay or a drug user
- Resistance to any interventions which appeared to condone drug use or sex



William F. Buckley calls for HIV-positive gay men to have their status forcibly tattooed on their buttocks (and IV-drug users on their arms).

In blocking legislation for AIDS funding, Senator Jesse Helms said, “We’ve got to call a spade, a spade and a pervert, a pervert.”



# HIV & AIDS Timeline

1986

- The virus which causes AIDS is officially named Human Immunodeficiency Virus (HIV)
- The first panel of the AIDS Memorial Quilt is made



# HIV & AIDS Timeline

---

1987

The first treatment for HIV is introduced: Antiretroviral Treatment (ART)

1988

First comprehensive needle exchange program opens in North America

1990

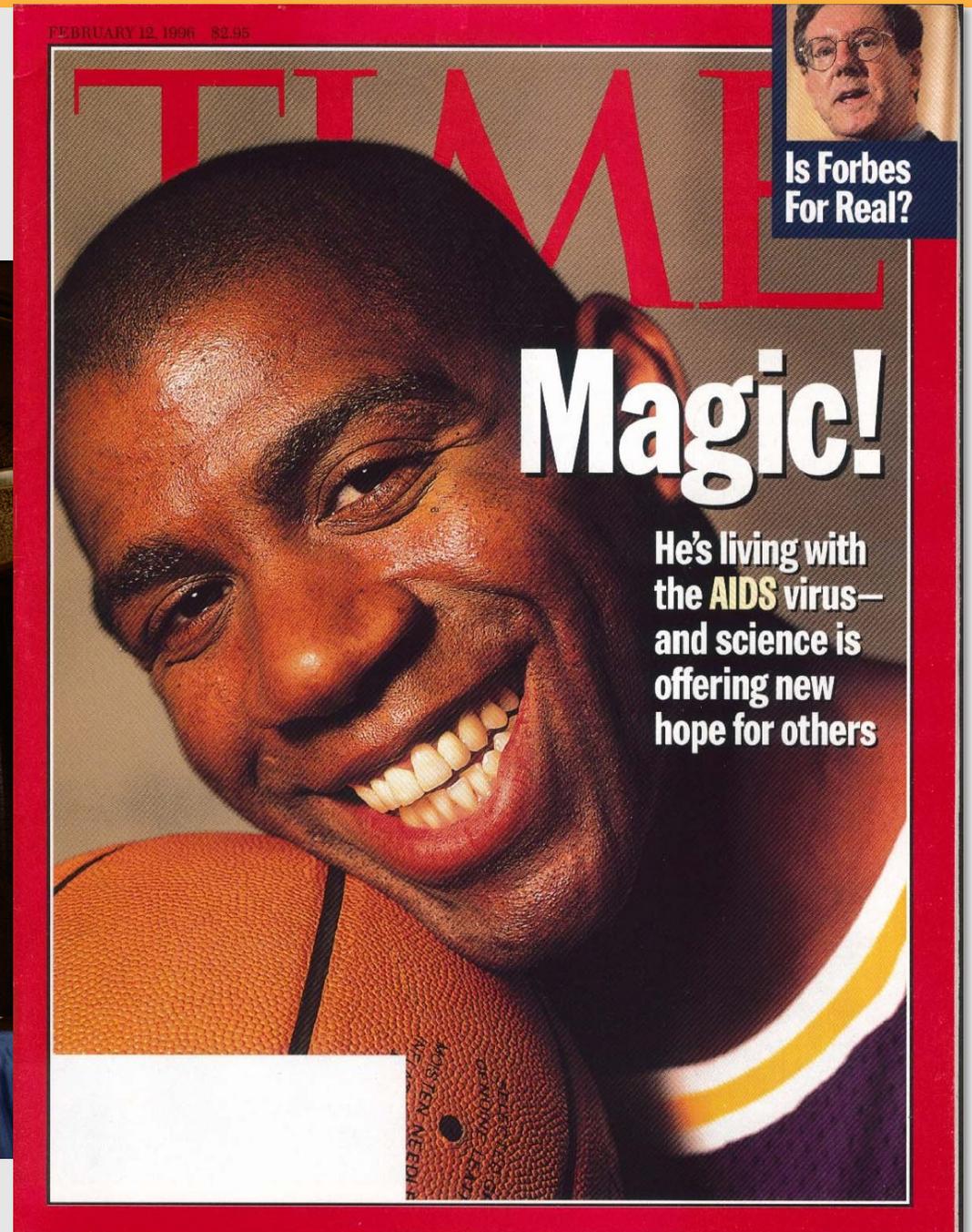
Congress passes the Americans with Disabilities Act, prohibiting discrimination based on HIV status and the Ryan White CARE Act, funding comprehensive HIV services

1991

Magic Johnson announces he is HIV+ and changes the face of HIV forever (death of the *4-H Club*)

# Magic Johnson

---



# HIV & AIDS Timeline

---

**2002**

The FDA approves the first rapid HIV test with 99.6% accuracy and results in 20 minutes

**2007**

The WHO issues new guidelines recommending “provider-initiated” HIV testing in healthcare settings

**2012**

2012, the FDA approved PrEP for HIV-negative people to prevent the sexual transmission of HIV

**2017**

For the first time ever, more than half of the global population living with HIV are receiving antiretroviral treatment, a record of 19.5 million people



# HIV Demographics

*The many faces of HIV*

# HIV Demographics

---

- Does HIV affect all communities equally?
- What factors influence the impact on communities?



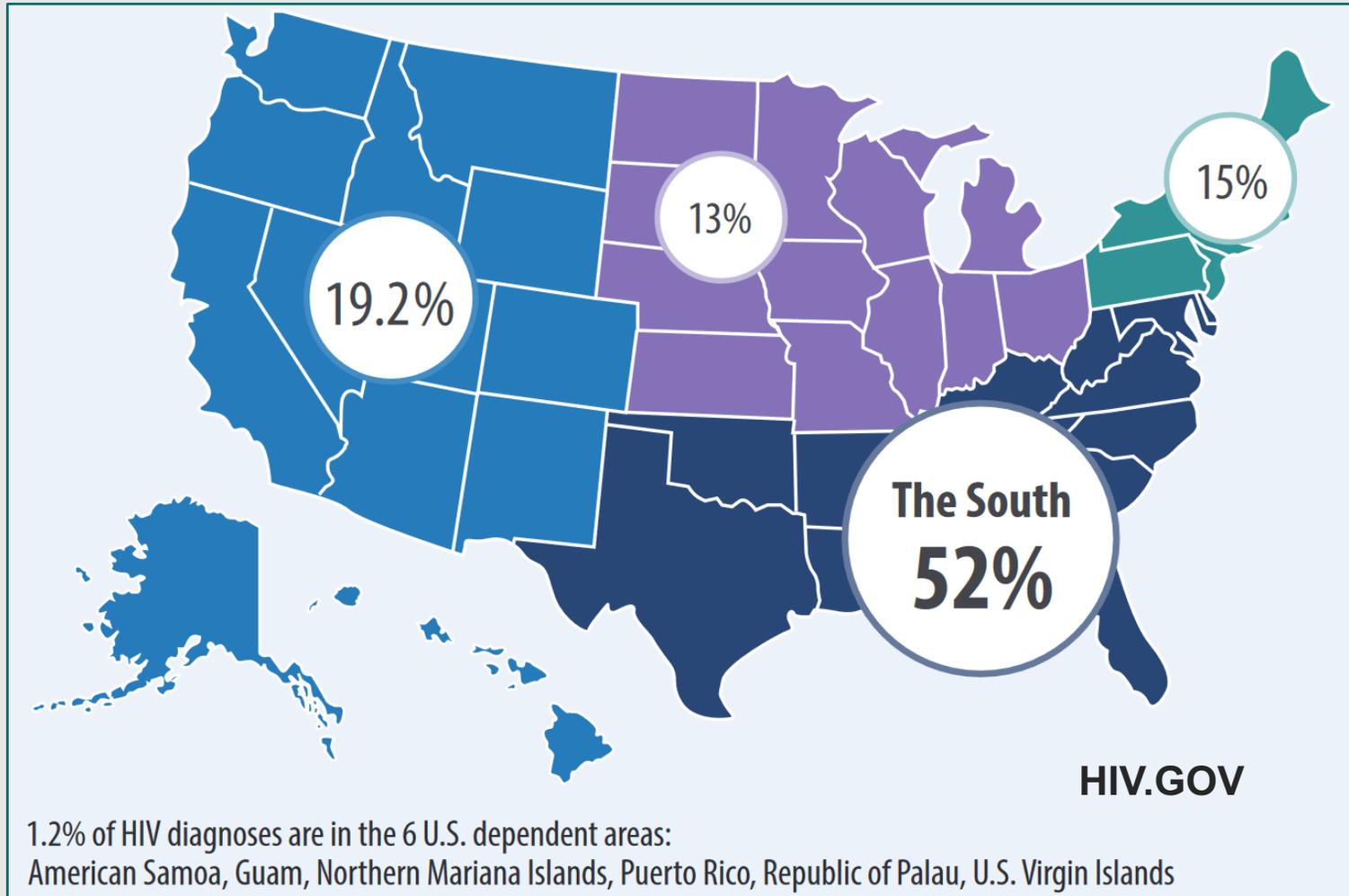
A decorative background on the left side of the slide featuring a repeating pattern of red ribbons, symbolizing HIV/AIDS awareness. The ribbons are arranged in a grid-like fashion, with some overlapping. The color is a deep red, and the background is a light pinkish-red.

# HIV Demographics in the U.S.

---

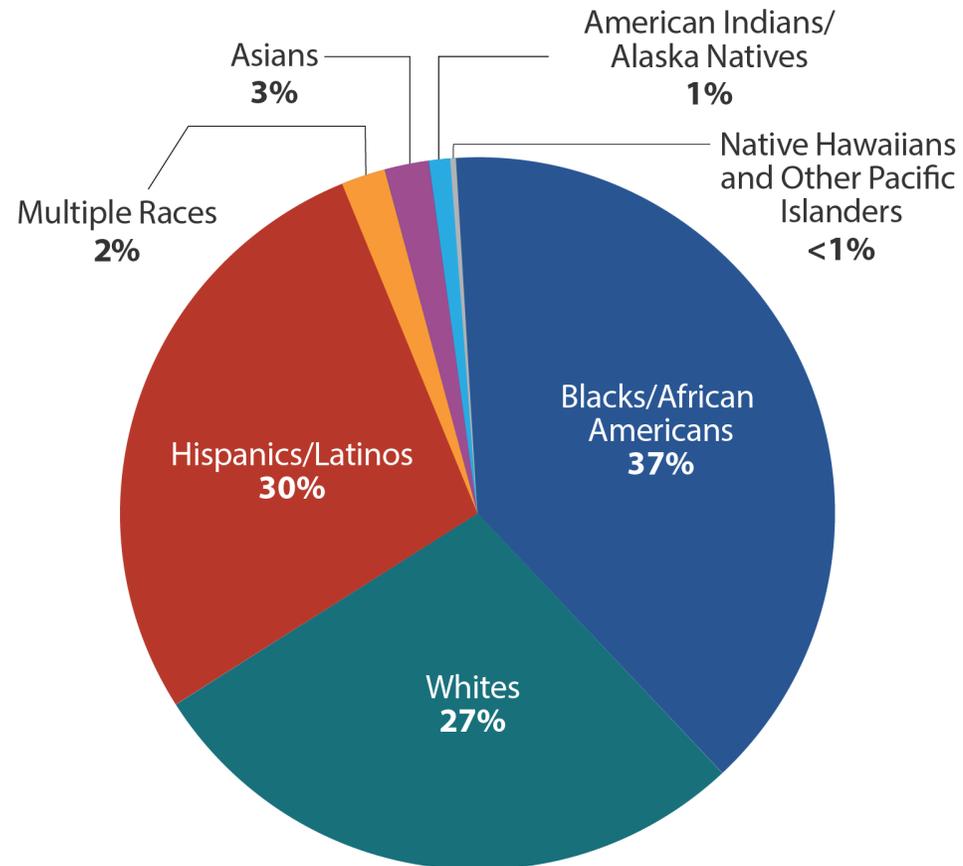
- In the U.S. there are currently **1.1 million** people living with HIV (HIV.gov, 2019)
- The U.S. continues to see about **39,000** new infections every year
- CDC estimates this is a result of effective prevention and treatment interventions not adequately reaching those who could most benefit from them
- These gaps remain particularly troublesome in rural areas, in the South, and among people of color

# HIV Demographics in the U.S.



# HIV Demographics in the U.S.

**New HIV Diagnoses in the US by Race/Ethnicity, 2018**



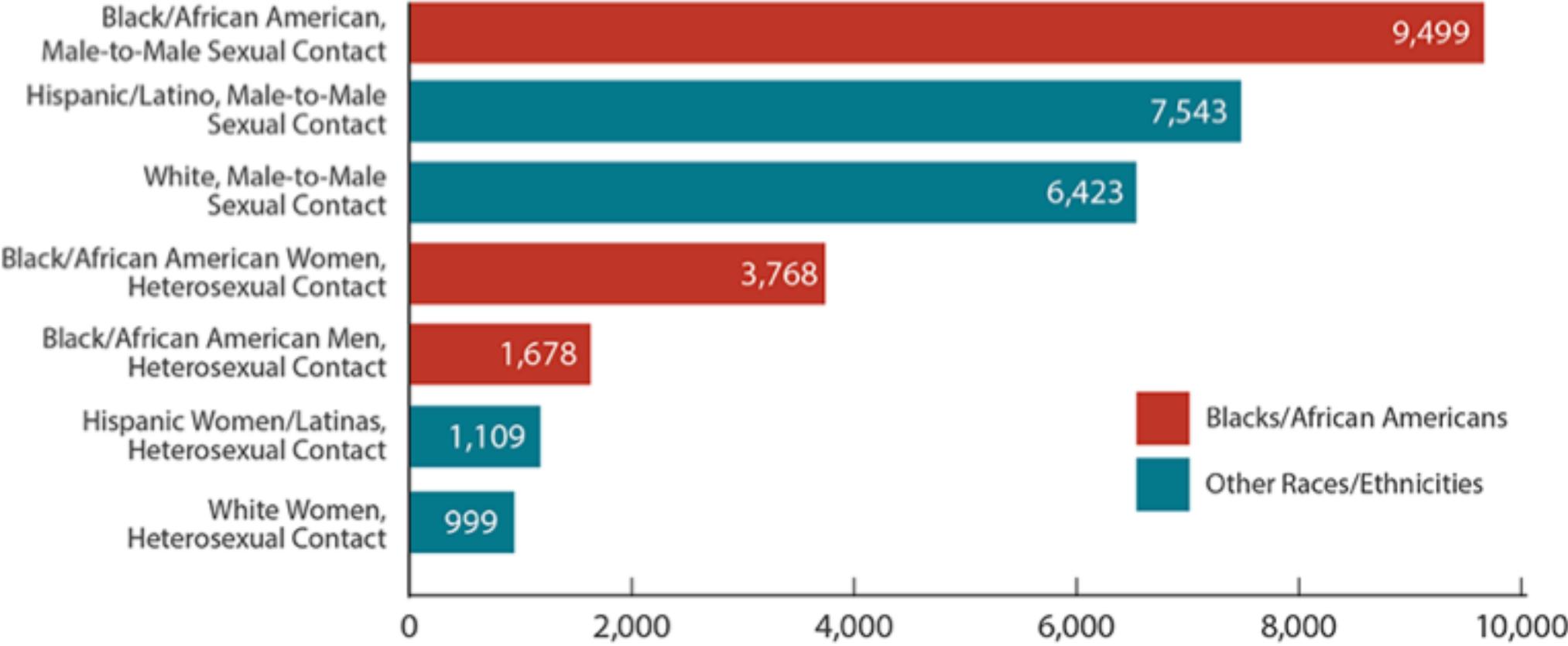
# *Lighting the Shadows*

- Disparities thrive when they are left in darkness and go unnamed
- Communities of color have been massively impacted by HIV
- Disparities highlighted by HIV are directly connected to disparities seen in other co-factor issues
- Disparities are often a reflection of **inequities** in understanding of and funding for appropriate services in communities of color



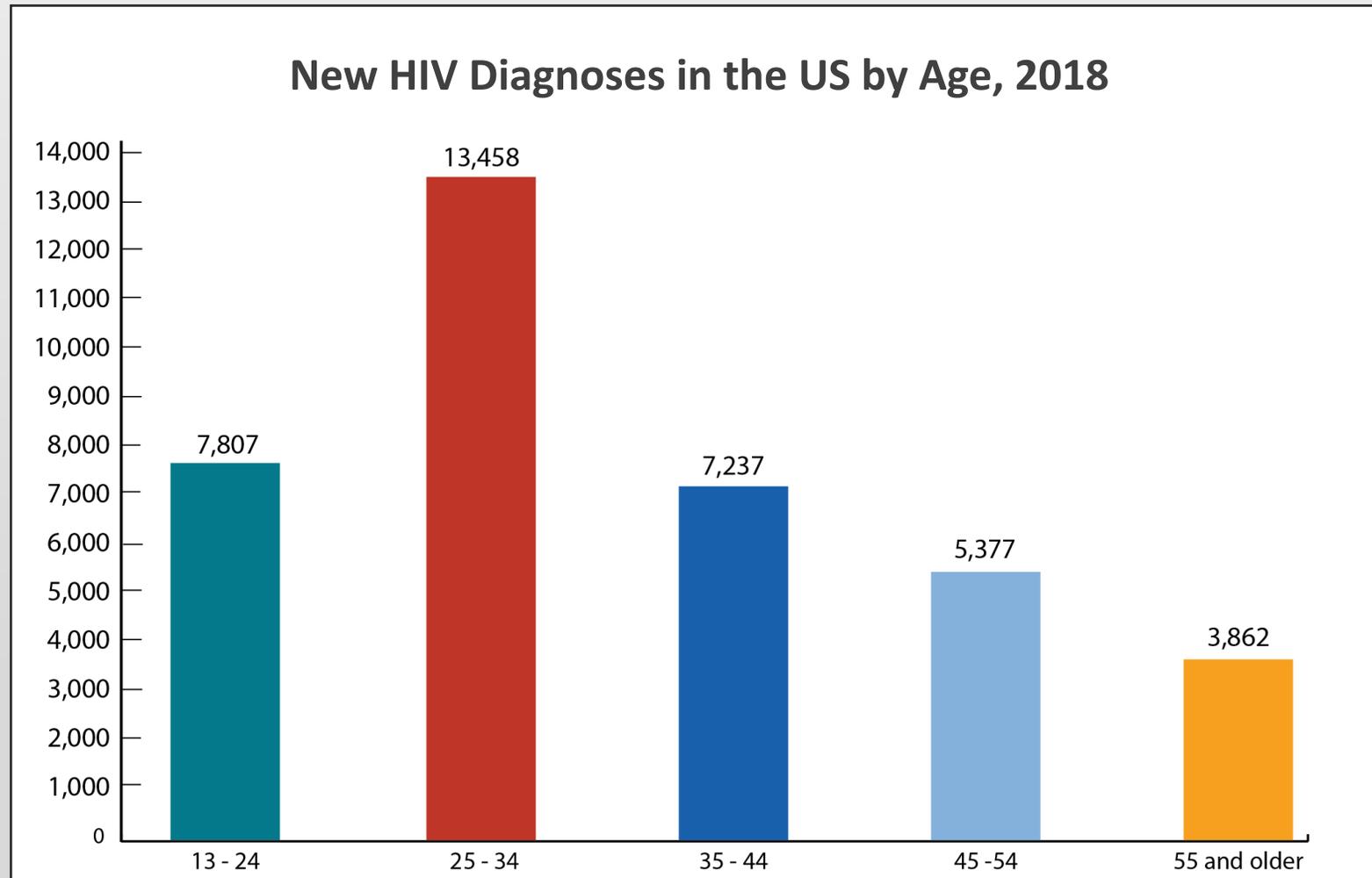
# HIV Demographics

New HIV Diagnoses in the US for the Most-Affected Subpopulations, 2018



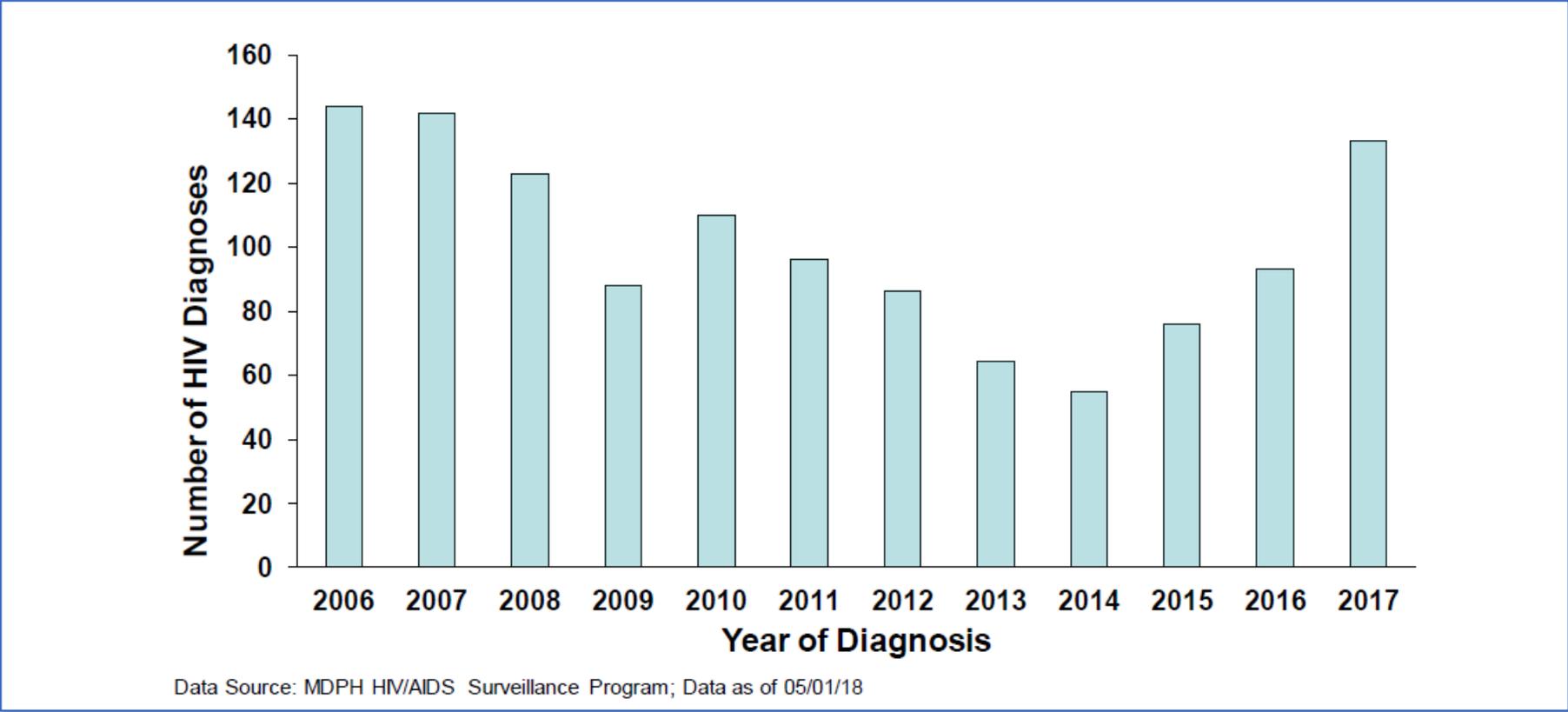
# HIV Demographics

---



# HIV Demographics- Mass

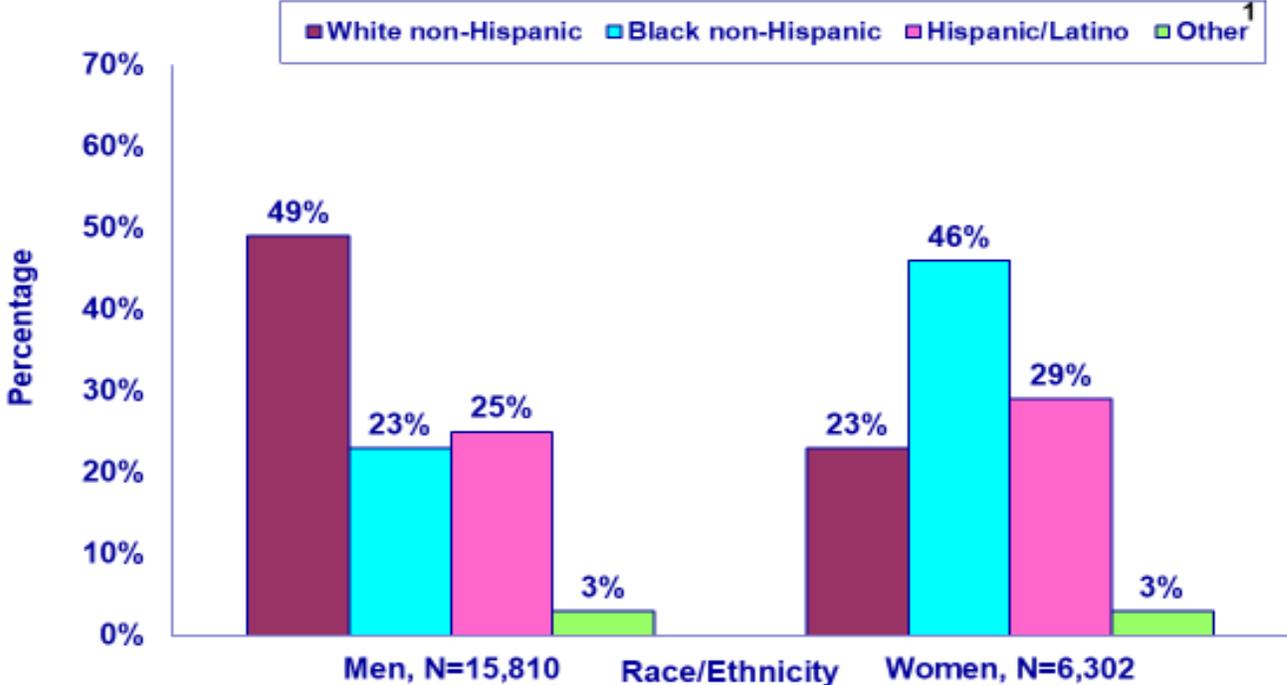
---



# HIV Demographics in Mass

As of 2018, there are more than 21,000 individuals living with HIV infection in the Commonwealth

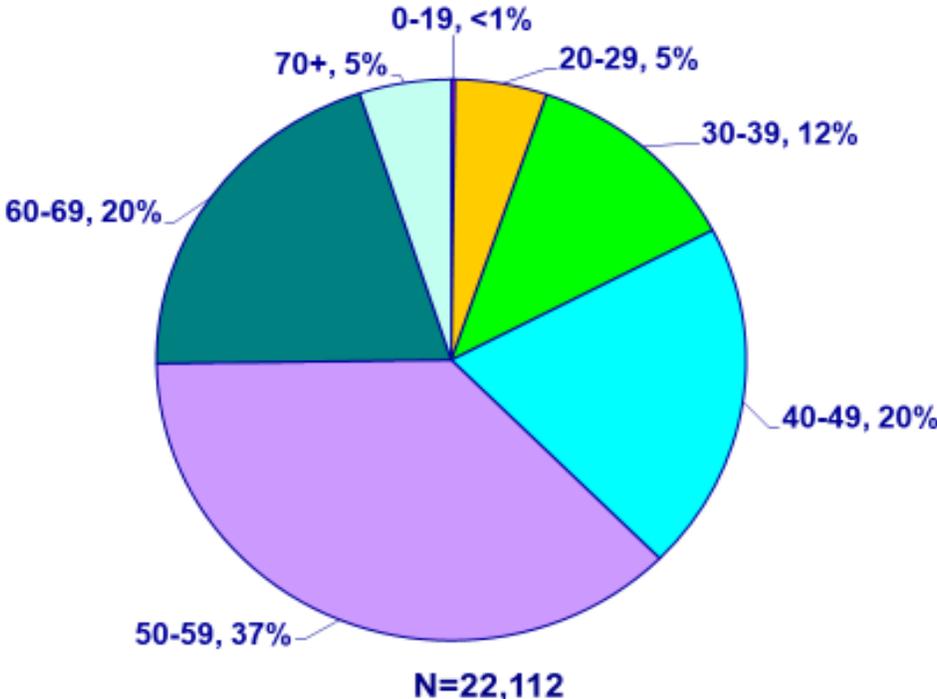
**Figure 3. Percentage Distribution of Individuals Living with HIV Infection on January 1, 2018 by Sex at Birth and Race/Ethnicity: Massachusetts**



<sup>1</sup> Other include Asian/Pacific Islander and American Indian/Alaska Native  
Data Source: MDPH Bureau of Infectious Disease and Laboratory Sciences, Data as of 1/1/18

# HIV Demographics in Mass

**Figure 7. Percentage Distribution of Individuals Living with HIV Infection on January 1, 2018 by Age: Massachusetts**



Data Source: MDPH Bureau of Infectious Disease and Laboratory Sciences, Data as of 1/1/18

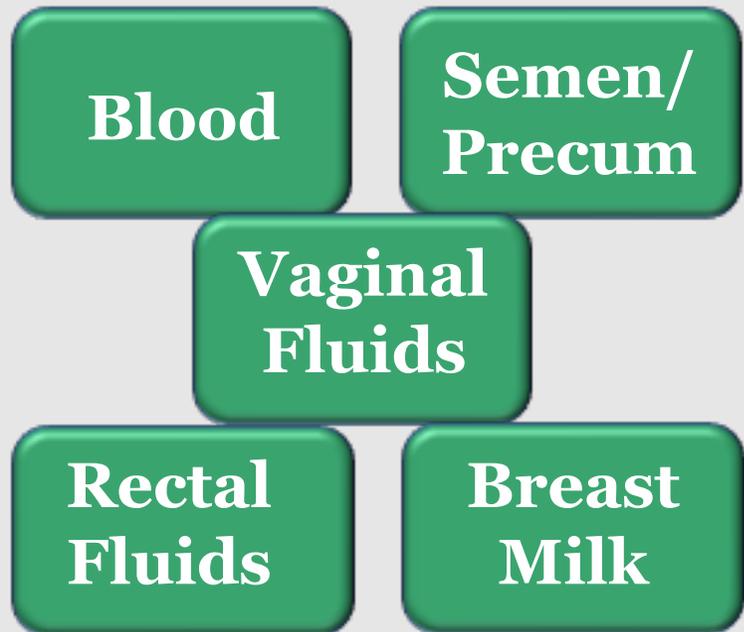
A microscopic image of skeletal muscle tissue, showing characteristic striations and nuclei. The muscle fibers are arranged in parallel bundles, with alternating light and dark bands. A central white circle with a thin black border contains the text "HIV Transmission".

**HIV  
Transmission**

# HIV Transmission

---

- Transmission occurs with contact of infected body fluid



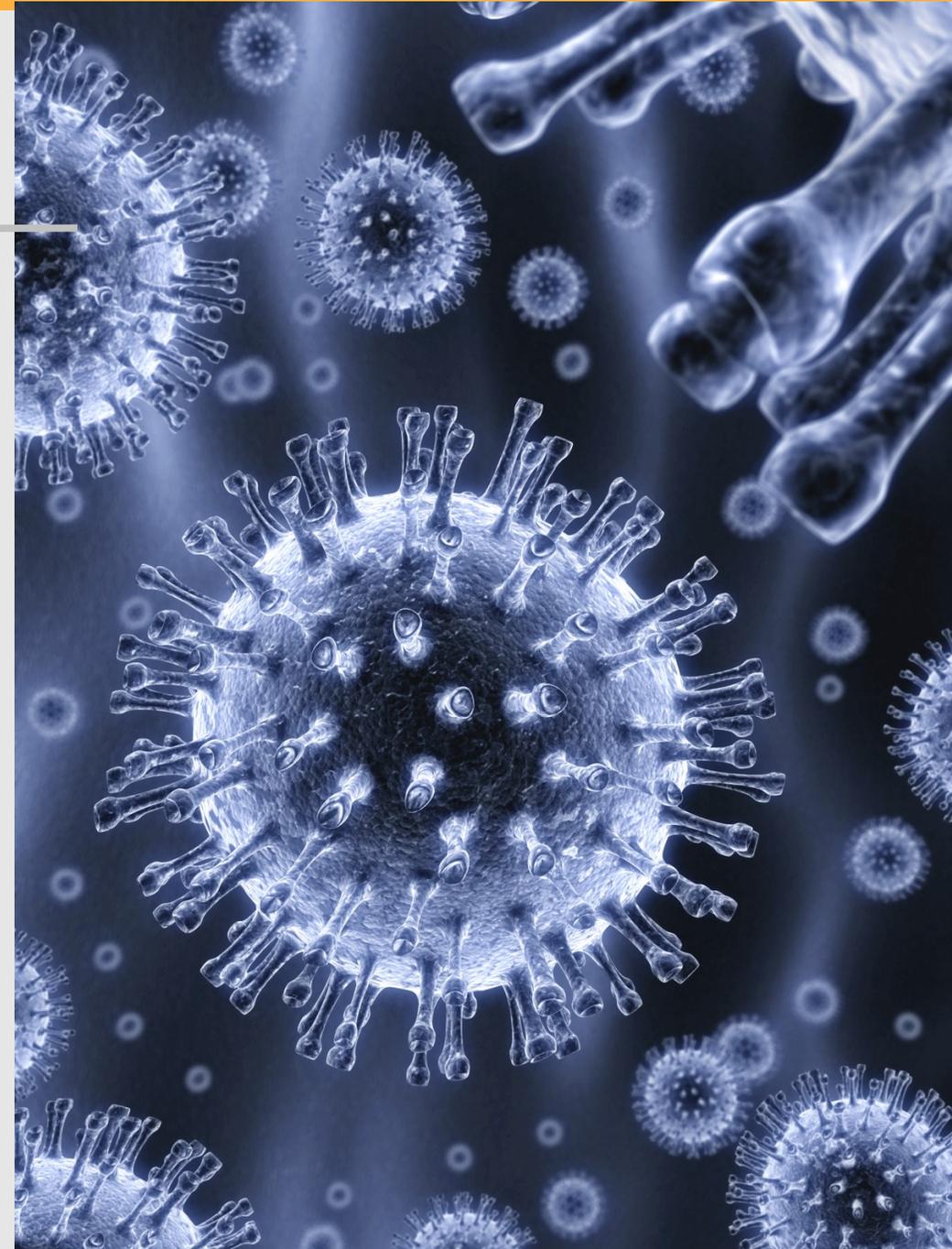
- For transmission to occur, these fluids must either:
  - Come in contact with mucous membranes in the body (rectum, vagina, penis)
  - Come in contact with damaged tissue
  - Be directly injected into the bloodstream (as in a needle or syringe)

# HIV Transmission

---

In the U.S., HIV is transmitted mainly through:

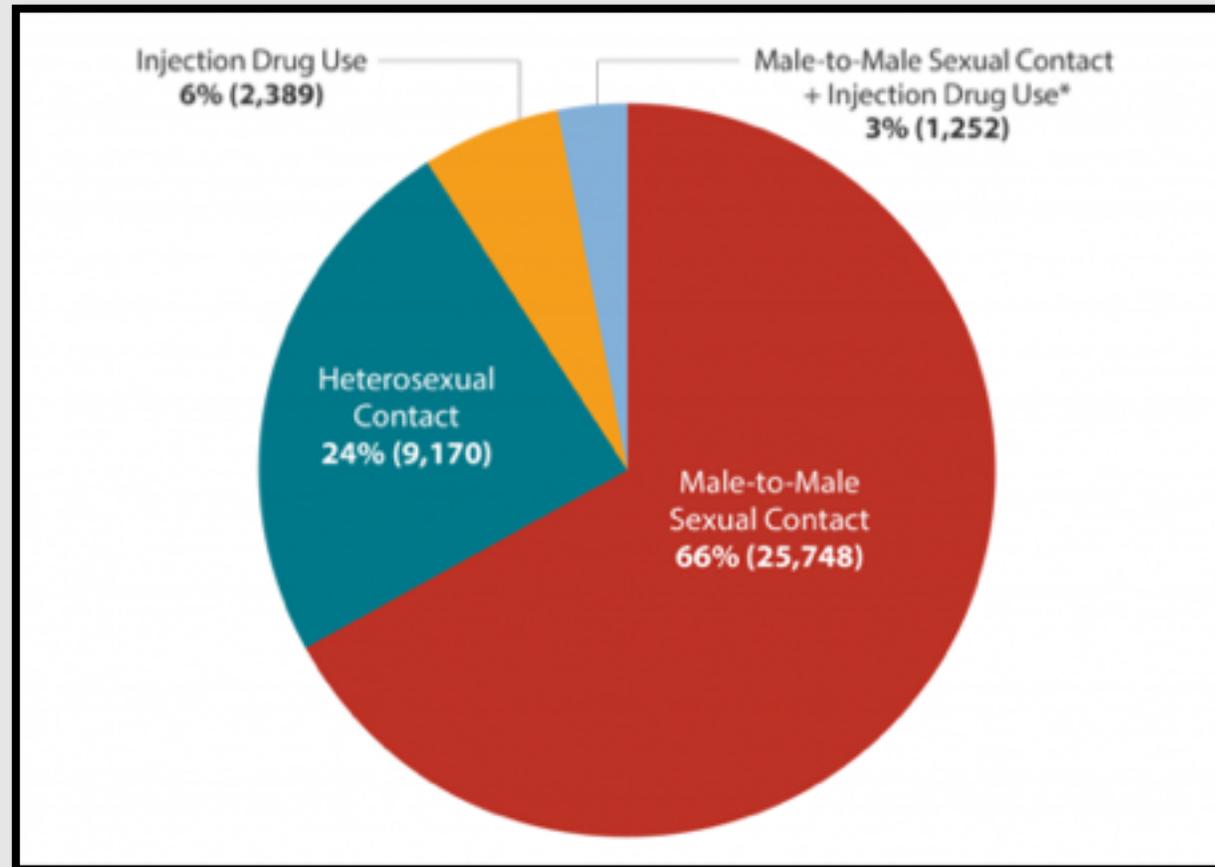
- Having anal or vaginal sex with someone who has HIV without taking precautions
  - Anal sex is the highest-risk sexual behavior
  - Vaginal sex is the second-highest risk sexual behavior
- Sharing needles or syringes, rinse water, or other equipment (works) used for drug injection with someone who has HIV
  - HIV can live in a used needle up to 42 days depending on temperature and other factors



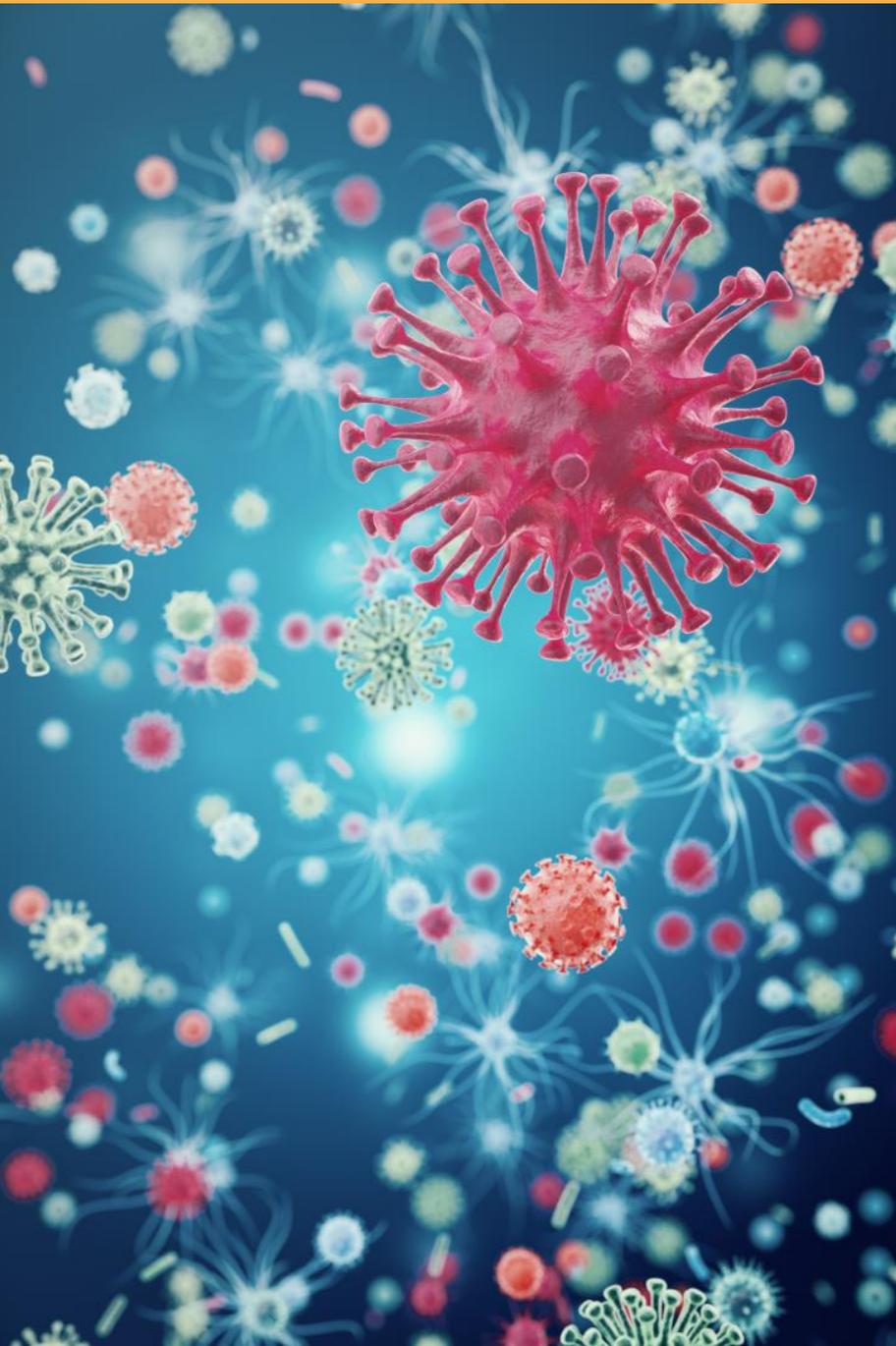
# HIV Transmission

---

- New HIV Diagnoses in the U.S. by Transmission Category (CDC, 2018)



[Link to Additional Resources](#)



# HIV Transmission

---

HIV is less commonly passed:

- From mother to child during pregnancy, birth, or breastfeeding
  - Although the risk can be high if a mother is living with HIV and not taking medicine
- By being stuck with an HIV-contaminated needle or other sharp object
  - This is a risk mainly for health care workers and law enforcement
- By having oral sex
- Through contact between broken skin and HIV-infected body fluids

**HIGHEST RISK**

**LOWER/ NO RISK**

Sharing Needles not cleaned

Blood Transfusion  
in the U.S. 2019

Protected Insertive  
Anal Sex

Performing Oral Sex  
on Penis

Performing Oral Sex  
on Vagina

Sharing Sex Toys

Kissing

Analingus/Rimming

Unprotected Receptive  
Vaginal Sex

Unprotected Insertive  
Vaginal Sex

Protected Receptive  
Vaginal Sex

Masturbation/Abstinence

Protected Receptive  
Anal Sex

Unprotected Receptive  
Anal Sex

Protected Insertive  
Vaginal Sex

Receiving Oral Sex

Unprotected Insertive  
Anal Sex

**HIGHEST RISK**

**LOWER/ NO RISK**

Sharing Needles not cleaned

Unprotected Receptive  
Anal Sex

Unprotected Receptive  
Vaginal Sex

Unprotected Insertive  
Anal Sex

Unprotected Insertive  
Vaginal Sex

Performing Oral Sex  
on Penis

Performing Oral Sex  
on Vagina

Protected Receptive  
Anal Sex

Protected Receptive  
Vaginal Sex

Protected Insertive  
Anal Sex

Protected Insertive  
Vaginal Sex

Receiving Oral Sex

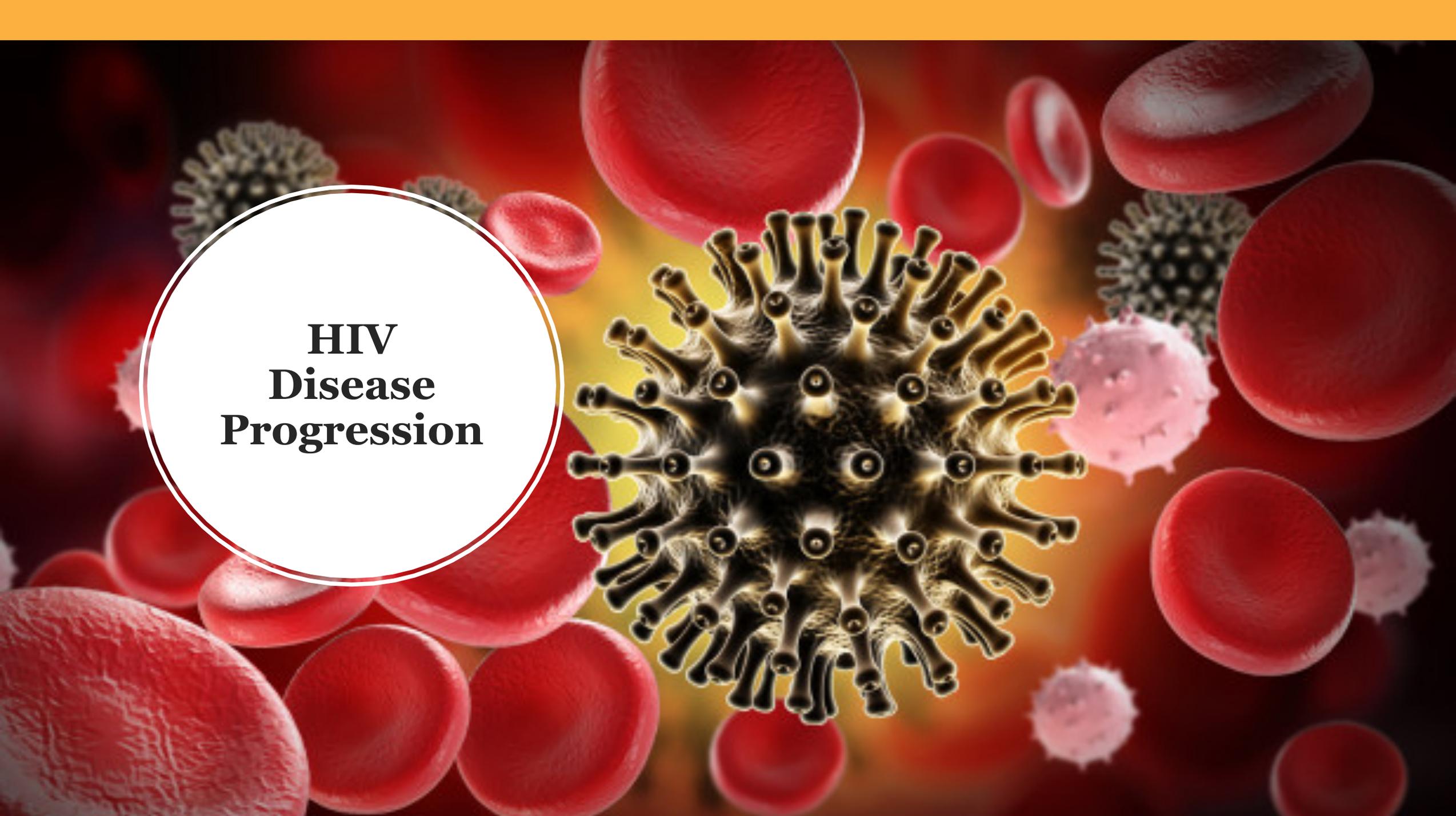
Analingus/Rimming

Sharing Sex Toys

Kissing

Masturbation/Abstinence

Blood Transfusion  
in the U.S. 2019

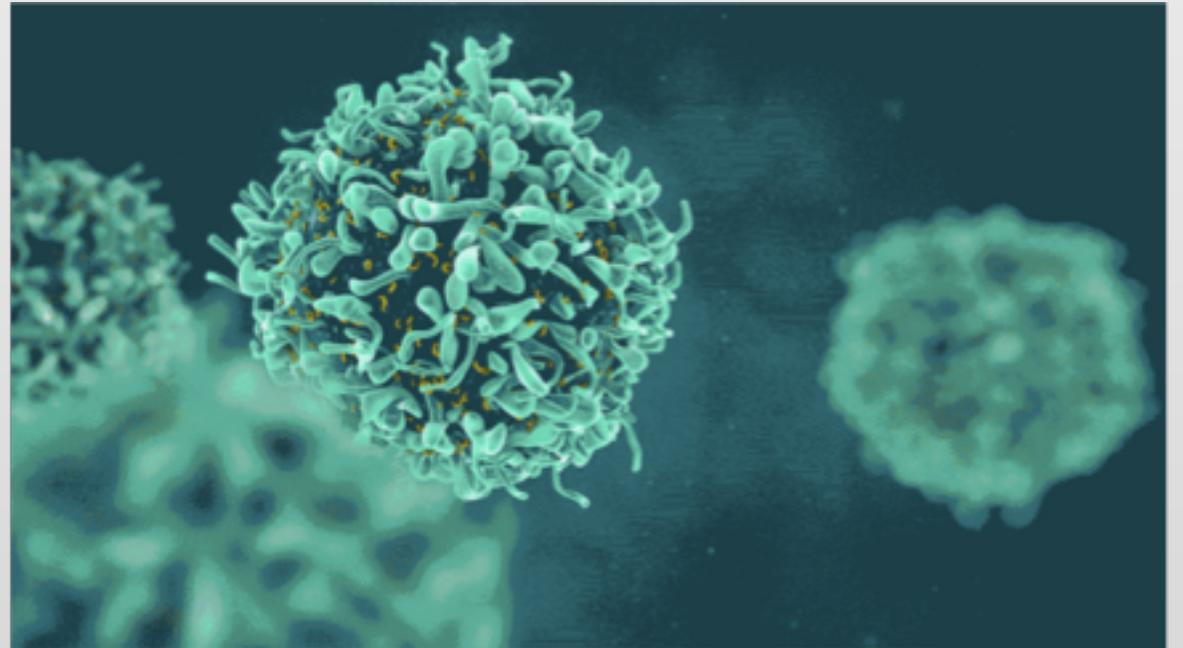
The background of the slide is a 3D-rendered illustration of a blood sample. It features numerous red blood cells of various sizes and orientations, some appearing as bright red discs and others as more textured spheres. In the center, a large, detailed HIV virus particle is shown, characterized by its spherical shape and a dense covering of dark, hair-like spikes (glycoprotein spikes) that protrude from its surface. The overall color palette is dominated by reds and oranges, with a dark, almost black background that makes the red and yellowish-gold virus stand out.

**HIV  
Disease  
Progression**

# HIV Disease Progression

---

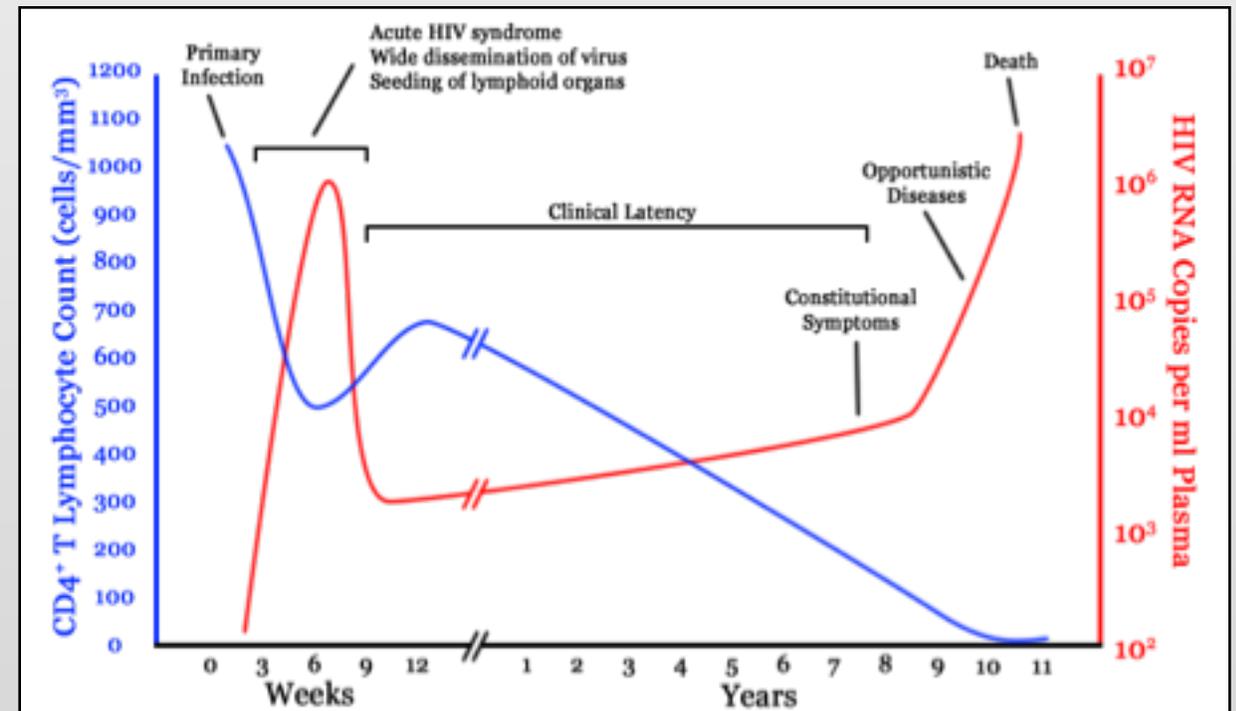
- The course of untreated HIV infection can go on for 10 years or more
- Four stages of infection
  - Acute Infection
  - Clinically Asymptomatic Infection
  - Symptomatic Infection
  - AIDS



# HIV Disease Progression

## Acute HIV Infection

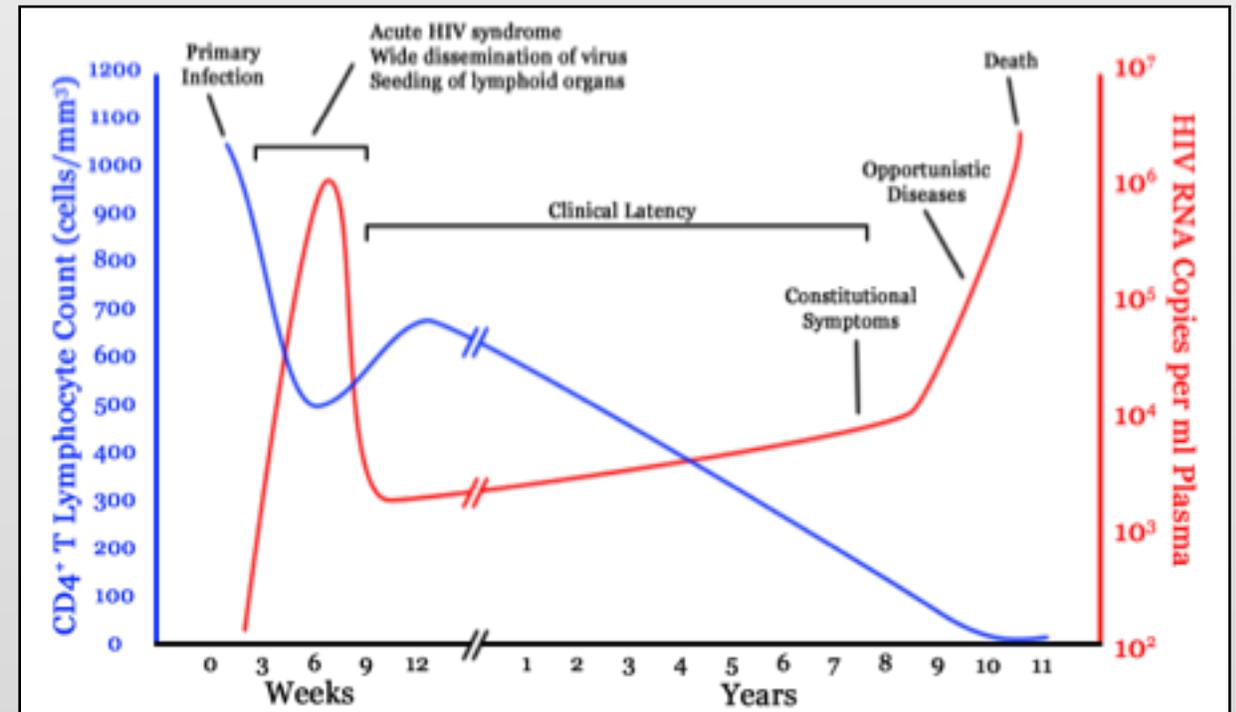
- CD4+ T cell (white blood cells) count can drop very low in early weeks though it usually recovers to a functioning level
- Viral load (amount of HIV in the blood) is very high at this time
- Causes an acute retroviral syndrome that is often mistaken for the flu or a bad cold
- During this time, a person is most likely to transmit the virus and least likely to know their status



# HIV Disease Progression

## Clinical Asymptomatic Infection

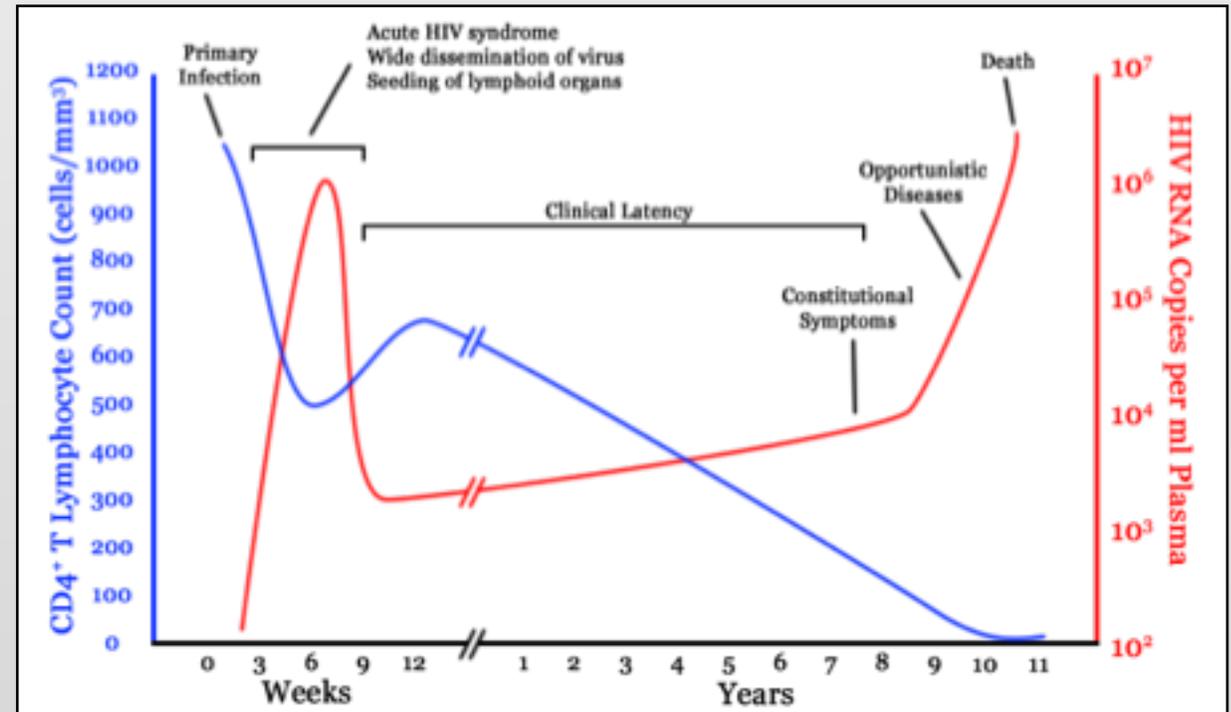
- After initial infection, CD4+ T cell counts drops at a rate of 30-90 cells per year
  - T cell count in a healthy person is about 1,200
- In this phase the virus is very active, but is rarely symptomatic
  - Most common is swollen lymph nodes
- Median Length of 10 years



# HIV Disease Progression

## Symptomatic Infection

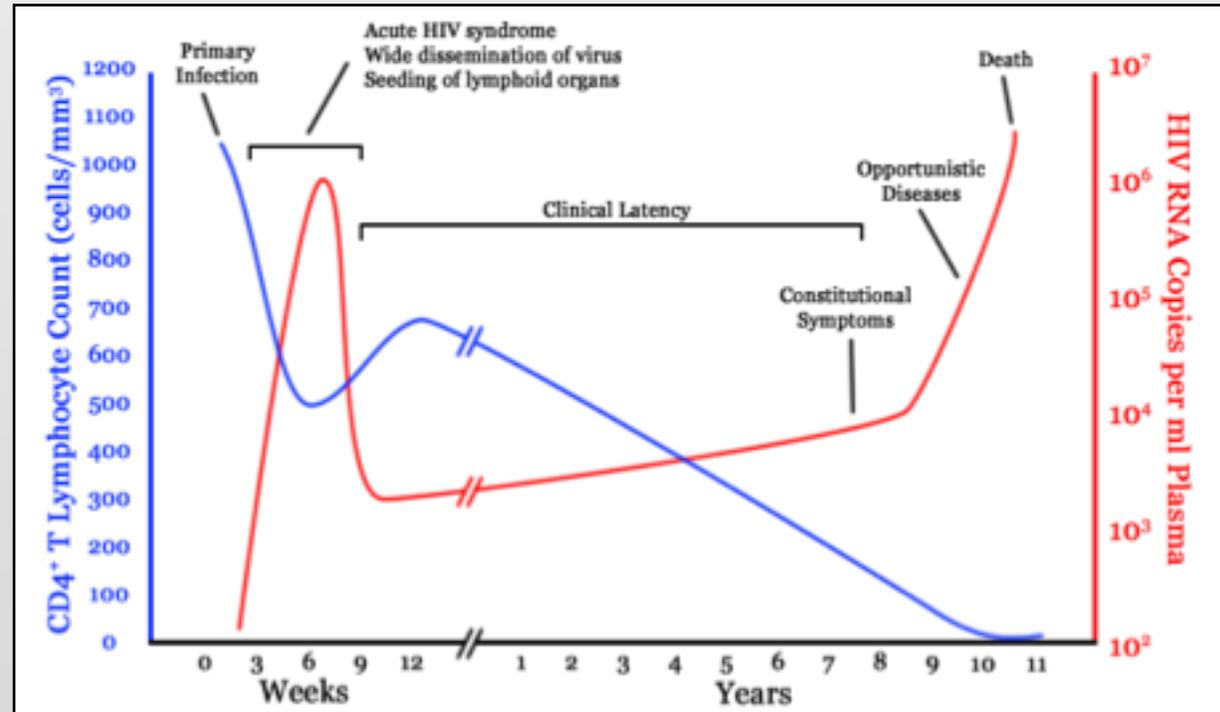
- Immune system has become compromised, leaving the person vulnerable to infections
- Common infections include thrush, recurrent respiratory infections, and shingles
- These infections are often what leads people to seek a diagnosis



# HIV Disease Progression

## A.I.D.S.

- People living with HIV who have a T cell count of 200 or less (cells/mL blood)
- And have one or more opportunistic infections
  - Tuberculosis, recurrent bacterial pneumonia, and chronic herpes infections
- Symptoms include wasting syndrome, chronic diarrhea, neuropathy, and dementia



# HIV Disease Progression

---

## A.I.D.S.- End Stage

- HIV overwhelms the immune system and the body succumbs to infection or disease
- End stage disease can be the result of treatment no longer working, side effects becoming intolerable, or lack of access/engagement in treatment
- Without treatment, people with AIDS typically survive about 3 years
- Death is far less frequent today
  - In 2017, 17,803 people in the U.S. received an AIDS diagnosis





# HIV Testing & Treatment

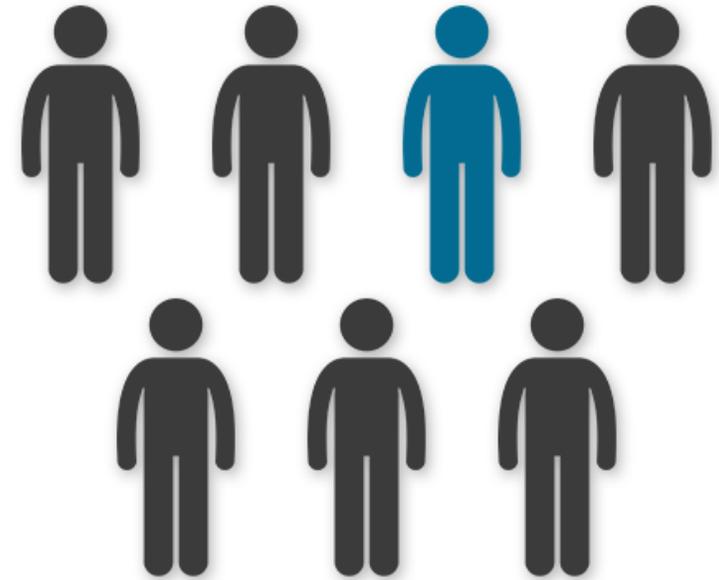
# HIV Testing

---

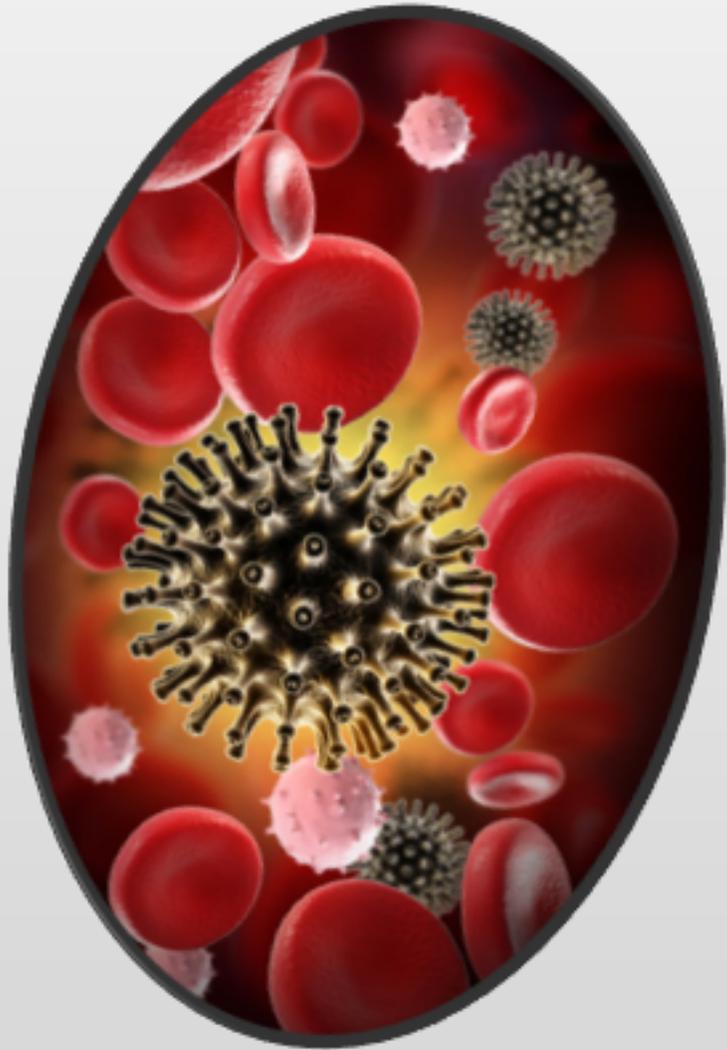
## The Importance of Screening

- Out of the more than 1.1 million people in the U.S. with HIV today, one in seven don't know they are infected
- The majority of new HIV infections are transmitted by people who are unaware of their infection

**1 in 7** living with HIV



are **unaware** of their infection.



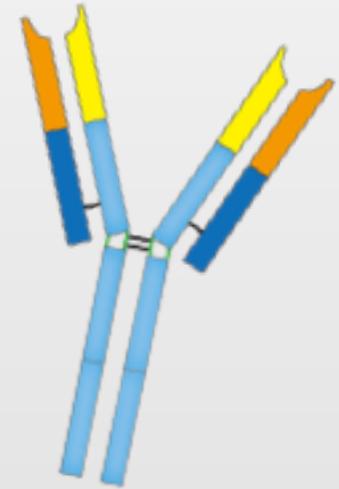
# HIV Testing

---

- **CDC recommends that everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine health care**
- People at higher risk should get tested more often, at least once per year
- Sexually active gay and bisexual men may benefit from more frequent testing (every 3 to 6 months)
- Pregnant women are encouraged to get tested and, if found to be positive, seek treatment to protect their health and to prevent passing the virus to their infant

# HIV Testing

---



- HIV tests are done using a small sample of blood or oral swab
- There are two main types of HIV diagnostic tests:
  - **Antibody tests**
    - Antibody tests detect the presence of antibodies, proteins that a person's body makes against HIV
    - Can begin to detect HIV 3 months after exposure
    - Most rapid tests and home tests are antibody tests and produce results in 20 minutes
  - **Antigen/antibody tests**
    - Antigen/antibody tests look for both HIV antibodies and antigens
    - HIV Antigens, known as p24, are proteins that the virus emits as it travels through the bloodstream
    - Most common in the U.S. for testing done in labs
    - Detects HIV within one month of exposure



# HIV Testing

---

- HIV and Hepatitis C (HCV) are considered co-factors to one another; having one increases your risk for the other
- Due to the high rate of co-infection, all HIV screenings conducted at state-funded sites in Mass are also automatically tested for both

# Treating HIV

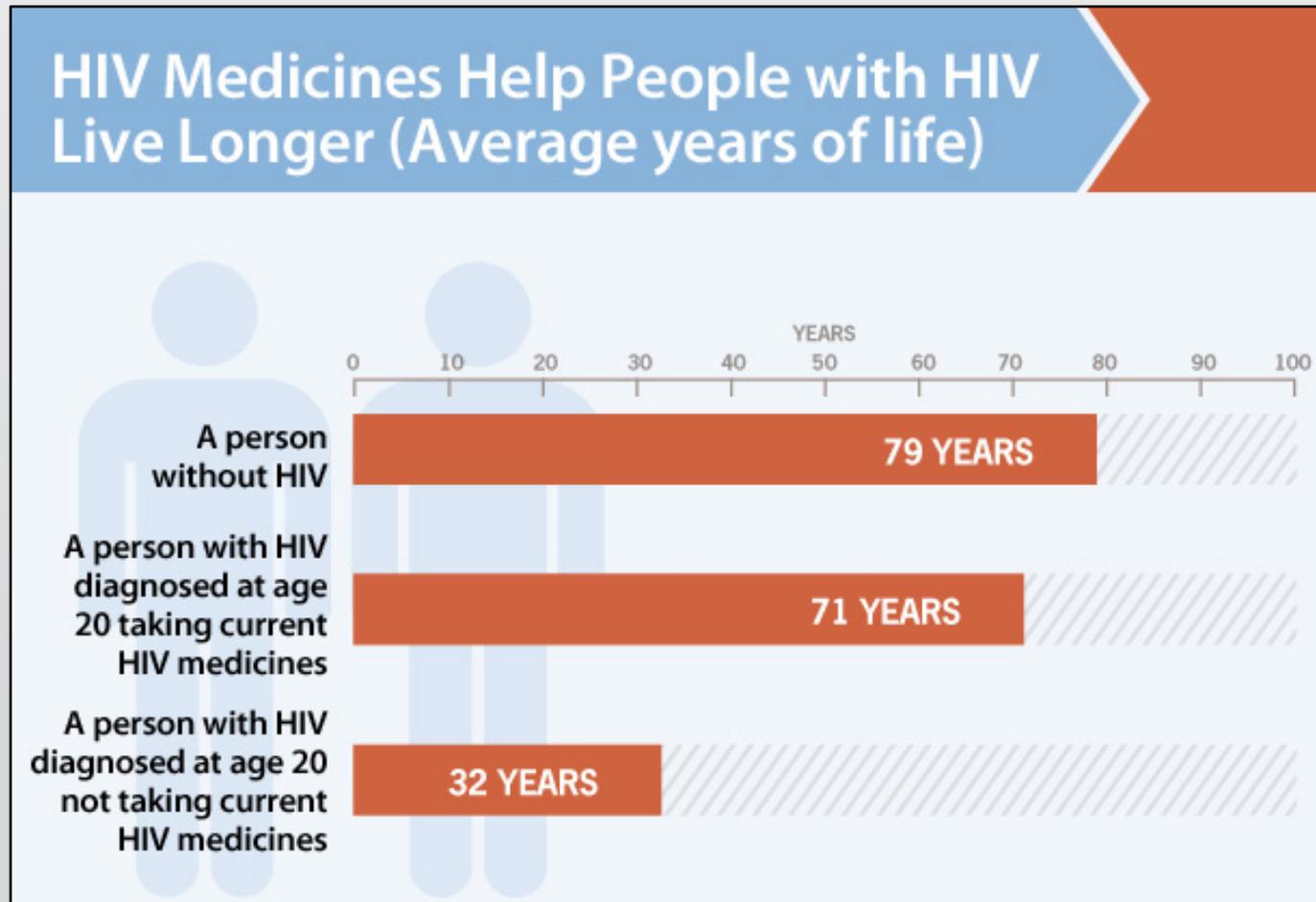
---

## Antiretroviral Treatment (ART)

- Medications are used to prevent HIV from copying itself and attaching to healthy cells. This maintains immunity levels while slowing the progression of HIV
- A main goal of ART is to reduce a person's viral load to an undetectable level.
  - People with HIV who maintain an undetectable viral load have effectively no risk of transmitting HIV
- ARTs can't cure HIV, but allows people with HIV to live longer, healthier lives
- Today's ART much more manageable & tolerable
  - 30+ pills per day vs. 1 pill per day

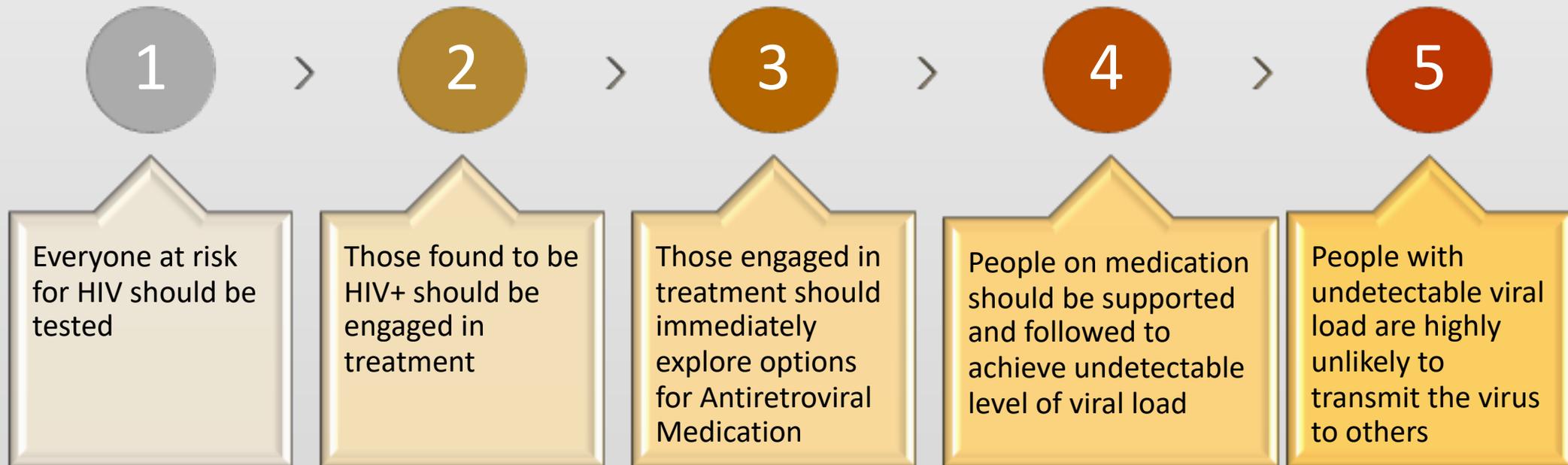


# HIV Life Expectancy



# CDC's Strategy for HIV Service Provision

---



$$U=U$$

What does  
this mean ?

**U = U**

**UNDETECTABLE EQUALS UNTRANSMITTABLE**



# Undetectable = Untransmittable

---

TODAY'S NEWS IN A MINUTE

HIV TESTING AND TREATMENT FOR HEALTH AND PREVENTION:

**HOW HIV TRANSMISSIONS DECREASE  
AS PEOPLE GO THROUGH CARE**

Source: Centers for Disease Control and Prevention

[Link to Video](#)

# Undetectable = Untransmittable

---

- Effective HIV treatment suppresses the viral load (the amount of HIV in body fluids) so low they are no longer detectable by standard HIV tests
- Doctors call this 'virologic suppression' but it is often known as 'having an undetectable viral load' or 'being undetectable'
- Having an undetectable viral load does not mean that the person is cured of HIV; if treatment is stopped, the viral load would increase and once again be detectable
- Having an undetectable viral load *does* mean that there is not enough HIV in the body fluids to pass it on to another person; in other words, the person is no longer infectious
- As long as the viral load stays undetectable, the chance of passing on HIV is zero. As the campaign slogan puts it, 'Undetectable equals Untransmittable' or 'U=U'



# What does the data say?

---

- In 2000, the first large scale study of 415 heterosexual couples found that no HIV-positive partner with a viral load below 1500 copies/ml transmitted HIV
- In 2011, another large scientific trial concluded that HIV treatment reduced the risk of passing on HIV to a regular heterosexual partner by 96%
  - One person in the trial acquired HIV, but transmission happened within a few days of their partner starting treatment
  - Over the course of the four-year study, not a single person with an undetectable viral load passed HIV on to their partner
- In 2017, a similar study exclusively of 343 gay male couples, Opposites Attract, also found no transmissions from partners with an undetectable viral load in 17,000 acts of unprotected anal sex

## Wait, there's more....

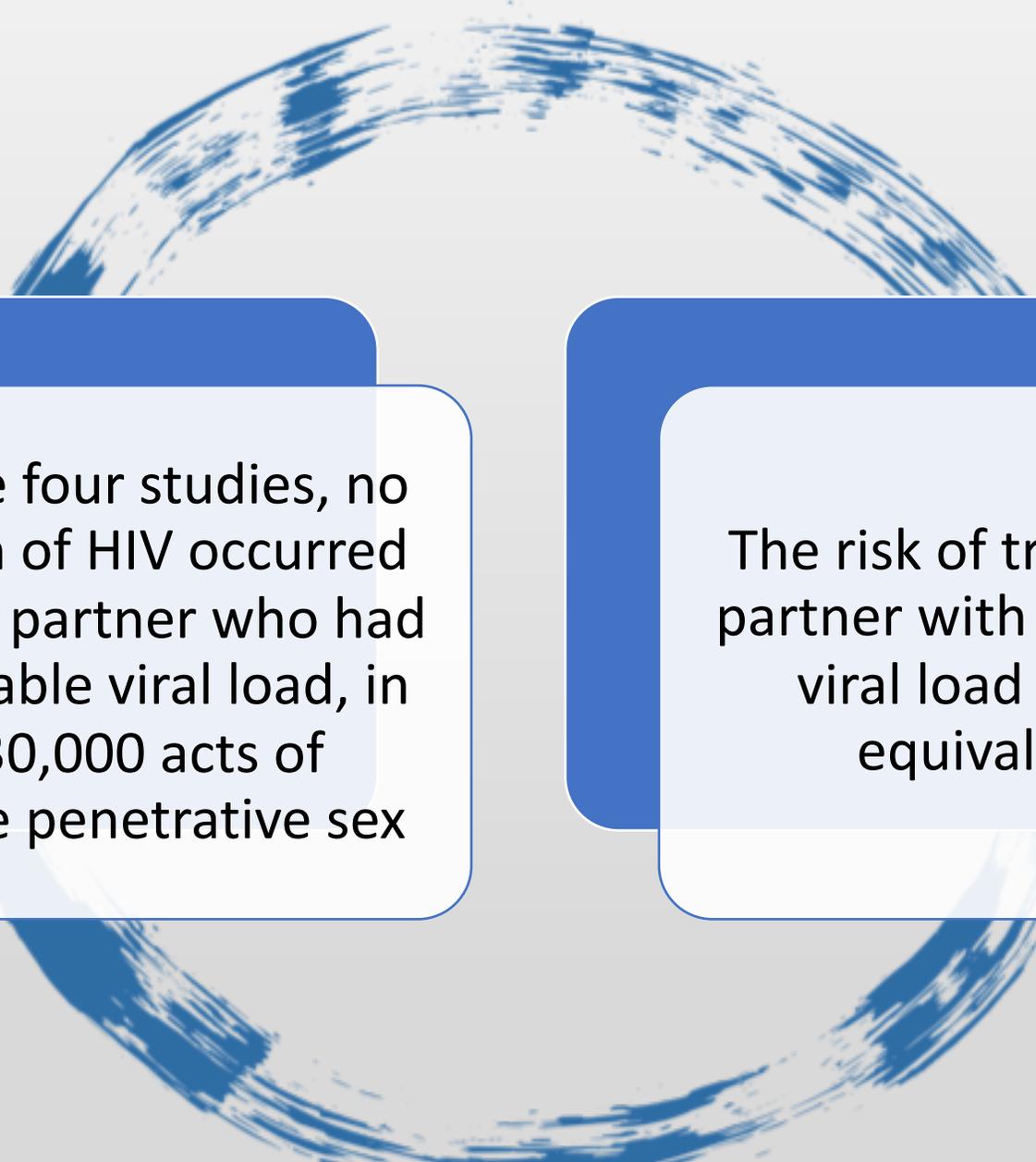
Partner One  
Study (2016)  
&  
Partner Two  
Study (2018)

One partner was HIV+, one was HIV-

972 gay couples (77,000 acts of  
unprotected penetrative sex)

516 heterosexual couples (36,000 acts of  
unprotected penetrative sex)

The Partner studies did not find a single HIV transmission from an HIV-positive partner who had an undetectable viral load (below 200 copies/ml)



Between the four studies, no transmission of HIV occurred with a sexual partner who had an undetectable viral load, in nearly 130,000 acts of unprotective penetrative sex

The risk of transmission by a partner with an undetectable viral load is statistically equivalent to zero

# What about other STIs?

---

- HIV treatment will protect sexual partners from HIV
- It does not protect from other sexually transmitted infections
- Regular sexual health checkups are recommended
- Using condoms and other barriers will help prevent STIs



The background of the slide features several 3D models of HIV virus particles. These particles are spherical and covered in a dense layer of blue, cone-shaped glycoprotein spikes. The interior of the particles is filled with a cluster of small, colorful spheres in shades of red, orange, and purple, representing the viral RNA and enzymes. The particles are scattered across the frame against a soft, out-of-focus background of warm colors like orange, yellow, and light blue.

**HIV  
Prevention  
& Harm  
Reduction**

# Prevention & Harm Reduction



- **Pre-Exposure Prophylaxis (PrEP)**

- When taken properly, can offer up to 98% protection from infection from high risk exposures
- HIV negative people take a pill (Truvada) once per day and started two weeks prior to engaging in risky behaviors which could lead to HIV exposure
- Accessed through PCP and through [Massachusetts HIV Drug Assistance Program](#)
- PrEP is covered by MassHealth Plans for a small monthly copay

Insurer <sup>6</sup>	Cost of Services		Truvada (emtricitabine / tenofovir) <sup>5</sup>		
	PCP	Labs	Covered (Yes/No)	Cost	Util. Mgmt.
MassHealth*	\$0	\$0	Yes	\$3.65	--
AllWays Health Partners – My Care Family	\$0	\$0	Yes	\$3.65	--
BMC HealthNet**	\$0	\$0	Yes	\$3.65	--
Fallon Health***	\$0	\$0	Yes	\$3.65	--
Health New England – BeHealthy Partnership	\$0	\$0	Yes	\$3.65	--
Tufts Health Plan****	\$0	\$0	Yes	\$3.65	--

# Prevention & Harm Reduction

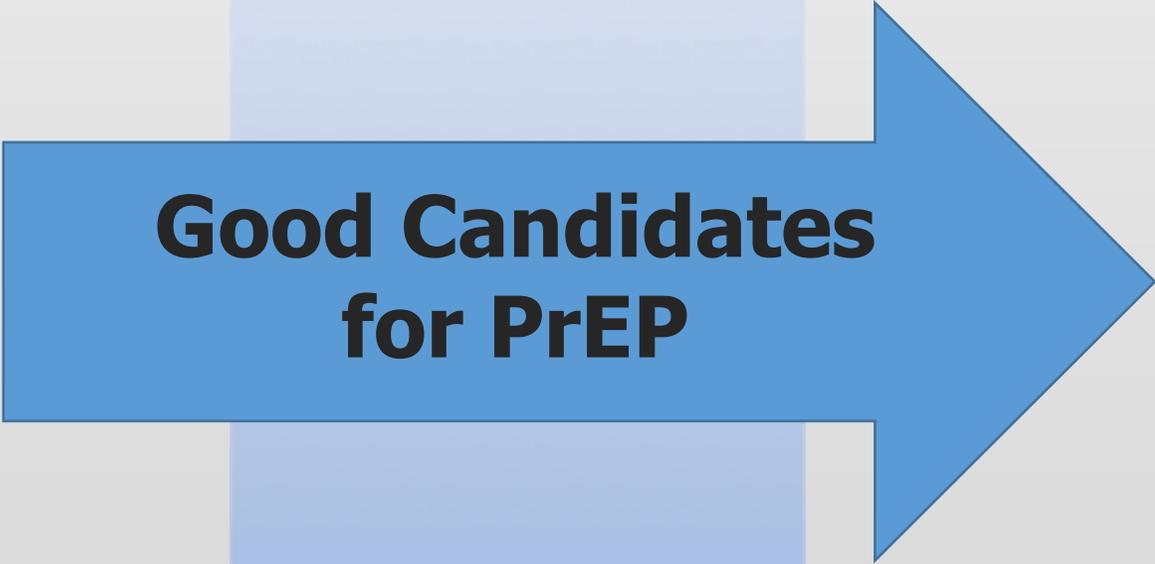
---

- **Post Exposure Prophylaxis (PEP)**
  - Anti-HIV medications taken after possible exposure to reduce the risk of infection
  - Accessed through emergency rooms and enrolled healthcare sites
    - Covered by MassHealth; most plans have a \$7.20 copay
    - [List of providers in Mass](#)
  - Risk must be deemed as high by provider
  - Available to all sexual assault survivors
  - Must be started within 72 hours after exposure
  - Is taken for 28 days



# Medical Interventions

---



## Good Candidates for PrEP

MSM and Trans women who have unprotected anal sex with men

People in sero-discordant relationships (one person is HIV+ and the other is not)

People in domestic violence situations where they cannot negotiate condom use

People doing sex work where condom negotiation is not always an option

People who have multiple partners

# Harm Reduction Sex

---

- Using condoms or other barriers
- Participating in lower-risk sexual behaviors including oral and manual sex
  - Do not floss or brush teeth before oral sex
- Being monogamous or limiting number of sexual partners
- Lube!!!
- Planning ahead- Prepare for spontaneity
- Getting tested/knowing status
- Remaining adherent to medication



# Harm Reduction: Substance Use

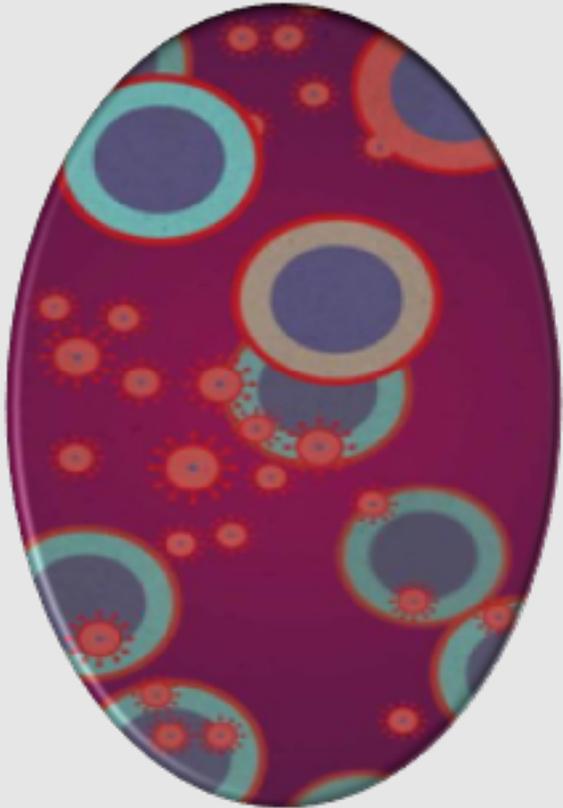
---

- Using new/clean needles and syringes
- Not sharing works (cotton, cookers, etc.)
- If using/sharing with others, use first or early in line
- Using safer routes of administration
- Being prepared for sex under the influence
- Getting tested/know your status
- Remaining adherent to medication



# For Providers

---



- Provide a safe, nonjudgmental, supportive environment which promotes openness and honesty
- Have the convo
  - Ask for permission, use open ended questions, set the tone
- Meet them where they are (harm reduction)
  - Demonstrate that you are willing to follow their lead, helping them to protect their health in whatever ways they decide are useful and feasible
- Address fear- treatment is available; diagnosis is no longer a death sentence

# Supporting PWHIV

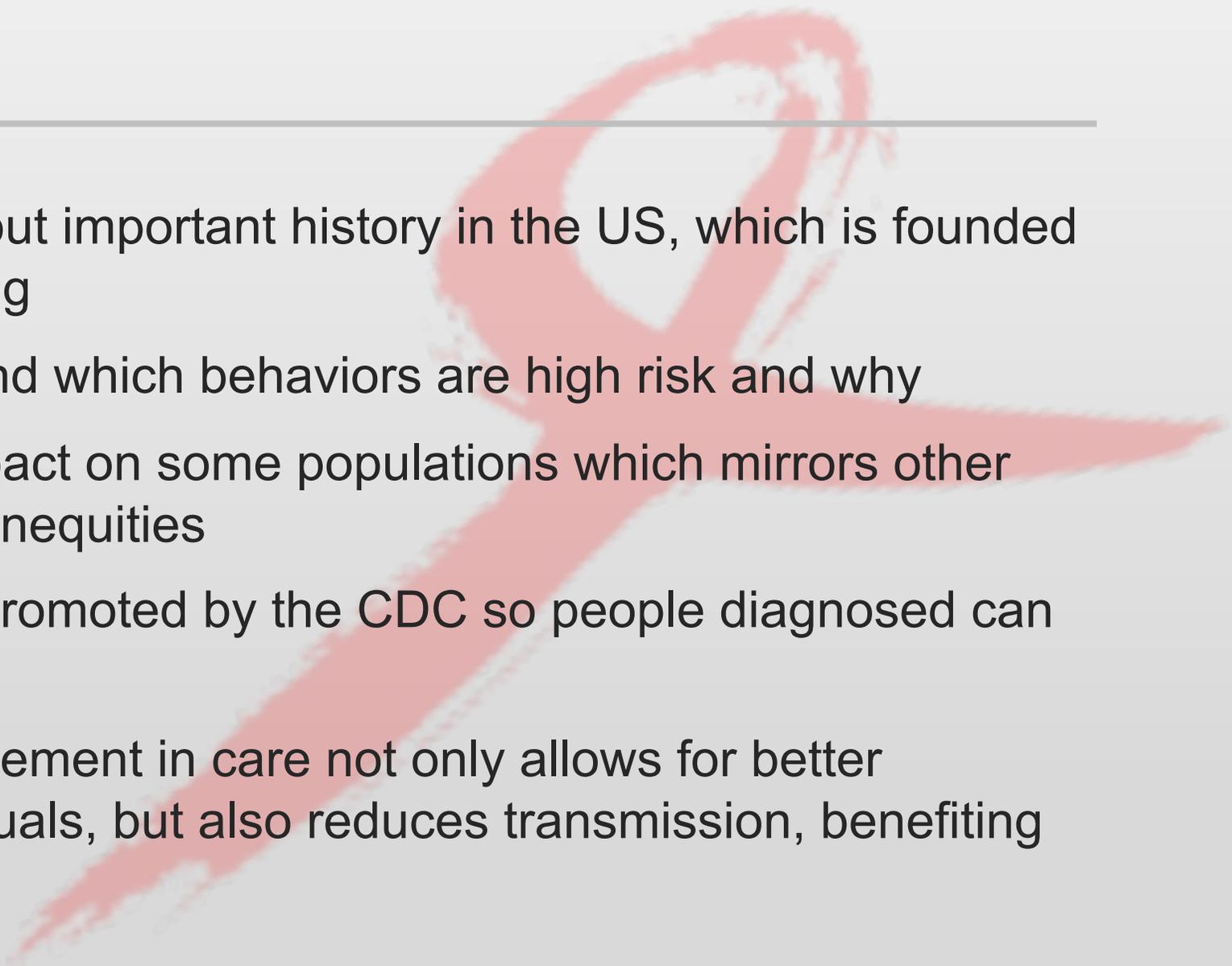
---

- **Talk** - Be available to have open, honest conversations about HIV
- **Listen** - Being diagnosed with HIV is life-changing news. Listen and offer your support. Reassure them that HIV is a manageable condition
- **Link with HIV care**- and ancillary support services to promote a holistic treatment plan
  - For more information: [www.mass.gov/hiv](http://www.mass.gov/hiv), [www.hiv.gov](http://www.hiv.gov)
- **Encourage treatment** - Some people who are recently diagnosed may find it hard to take that first step to HIV treatment
- **Support medication adherence** -It is important for people living with HIV to take their HIV medication every day, exactly as prescribed. Ask what you can do to support them in establishing a medication routine and adhering to it



# In Summary

---

- HIV & AIDS has a sordid but important history in the US, which is founded in fear, stigma and shaming
  - It is important to understand which behaviors are high risk and why
  - HIV has had a greater impact on some populations which mirrors other related health issues and inequities
  - Early screening is highly promoted by the CDC so people diagnosed can engaged in care
  - Early detection and engagement in care not only allows for better outcomes for HIV+ individuals, but also reduces transmission, benefiting their greater communities
- 



# Thank You!

*To access these slides, please visit us at*  
**C4Innovates.com**



**C4**  
Innovations

Community & Behavioral Health | Recovery | Social Change