

Part 101:

HIV / AIDS

What Providers  
Need to Know

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# Learning Objectives for this Training

- Explain how HIV can disrupt a healthy immune system.
- Describe how HIV is transmitted.
- Explore the stages of viral replication and disease progression.
- Generate at least 5 harm reduction strategies to reduce the transmission of HIV.
- Explain the process and importance of HIV testing.
- Explore how to assess a client's risks for acquiring HIV.
- Generate key discussion points for teaching clients about HIV/AIDS infections and prevention.



# What We'll Cover

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- History
- Who is affected
- HIV's disruption of the immune system
- HIV transmission
- Potential signs of acute onset of HIV and AIDS diagnosis
- Harm reduction strategies to reduce HIV transmission
- Process and benefits of HIV testing
- Assessing a client's risks for HIV infection
- Supporting clients at risk for or living with HIV



# Introductions

- Name
- Agency/Program
- Position/What you do
- *What's the first thing you remember hearing about HIV/AIDS?*



Looking  
Back on  
**HIV / AIDS**

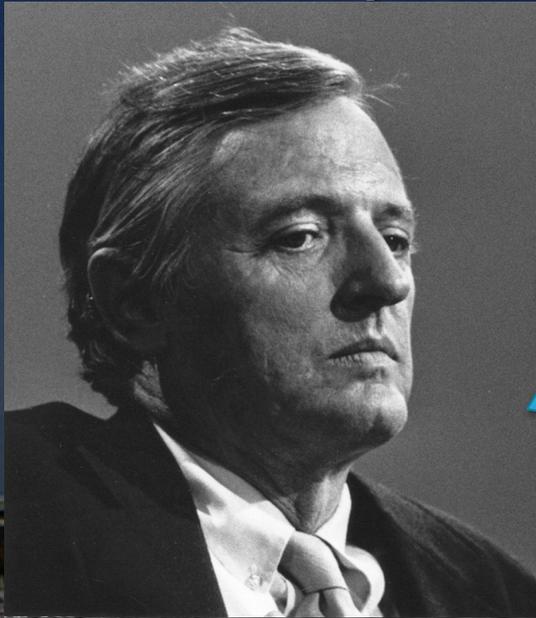


# HIV/AIDS Timeline

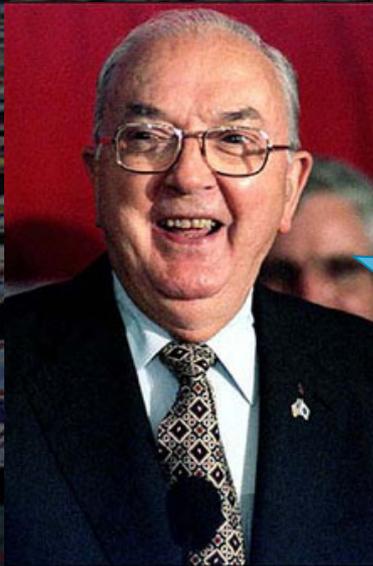
- **1981** – CDC Reports 1<sup>st</sup> cases of young men dying from PCP. Considered very unusual in otherwise healthy, young men.
- **1982** -- Formally known as GRID (Gay Related Immuno Disorder), the new term AIDS is adopted by the CDC.
- **1984** – France and U.S. announced that the virus which causes AIDS has been identified. Bath houses in SF are closed causing major outcries from the gay community.
- **1985** – First HIV screening test is approved by the FDA.



# Important Milestones in HIV History



William F. Buckley, in a March 18, 1986, New York Times opinion article, called for mandatory testing for HIV and said that HIV-positive gay men should have this information forcibly tattooed on their buttocks (and IV-drug users on their arms).



"We have got to call a spade a spade," said Senator Jesse Helms in offering an amendment to the fiscal 1988 appropriations bill for the Departments of Labor, Health and Human Services, and Education, "and a perverted human being a perverted human being." It prohibited the Federal Centers for Disease Control from funding AIDS programs that "promote, encourage or condone homosexual activities."

# Important Milestones in HIV History

1986 The virus which causes AIDS is officially named Human Immunodeficiency Virus (HIV). The first panel of the AIDS Quilt is made.

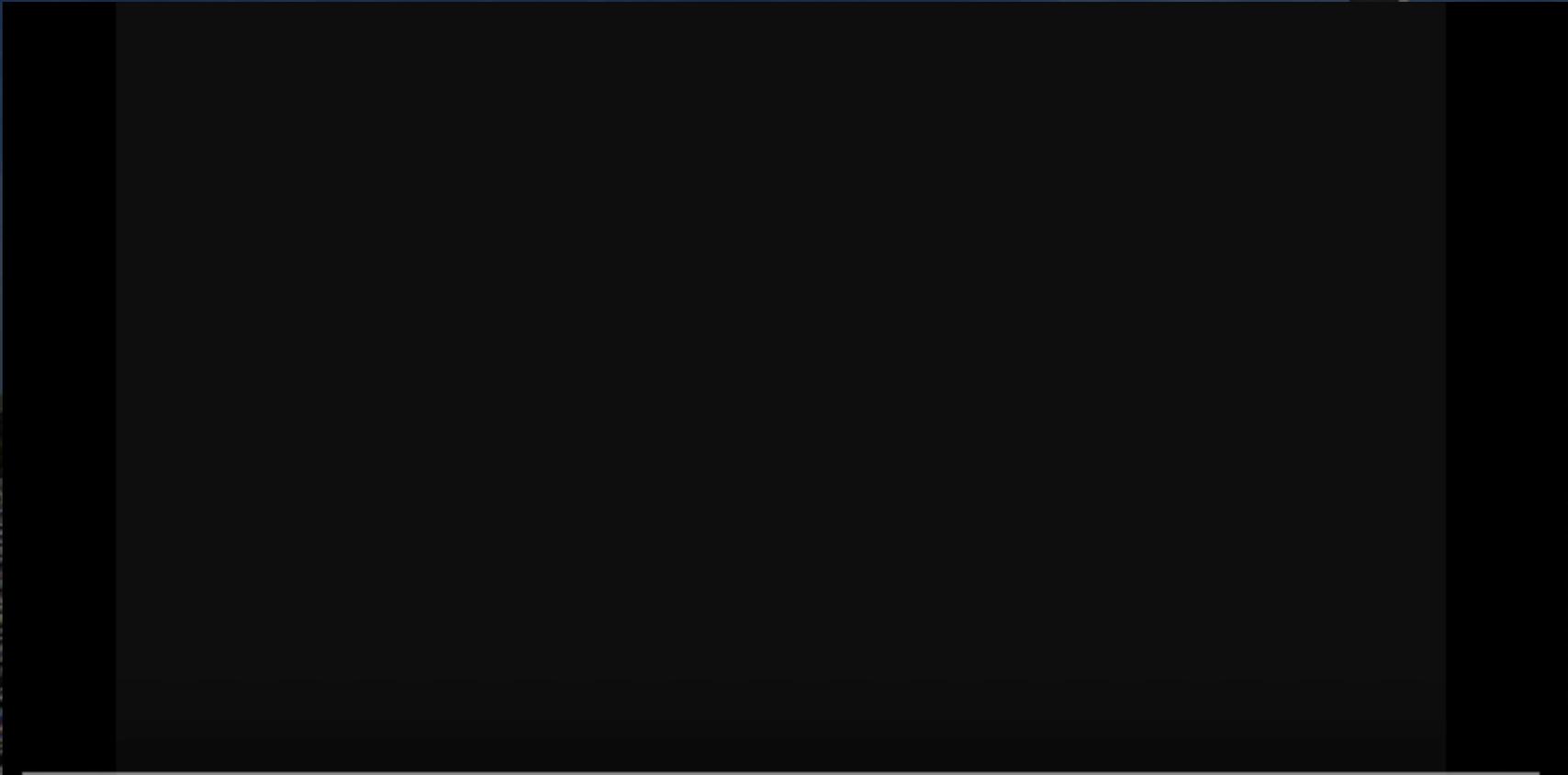


# Important Milestones in HIV History

- **1988** – First comprehensive Needle Exchange program opens in North America.
- **1990** – In response to many abuses against people living with HIV/AIDS Congress passes the Americans with Disabilities Act, prohibiting discrimination based on status (as well as other disabilities).
- **1991** – AIDS becomes the leading cause of death in the U.S. among men 25 to 44.
- **1991** – Magic Johnson announces he is HIV+ at a national news conference. The announcement changed the face of and approach to HIV prevention forever. Death of the **4-H Club**.

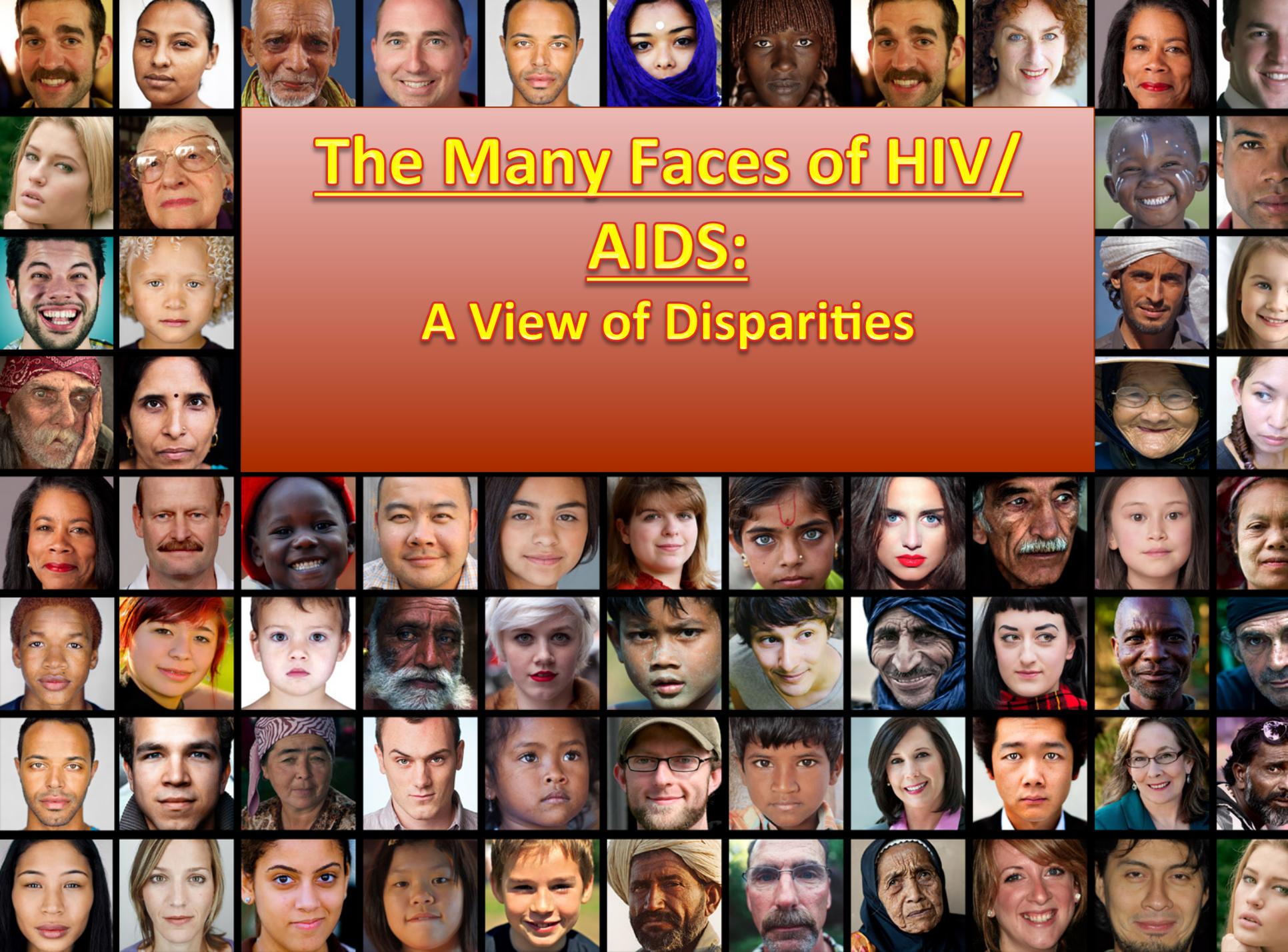


# Those We Lost



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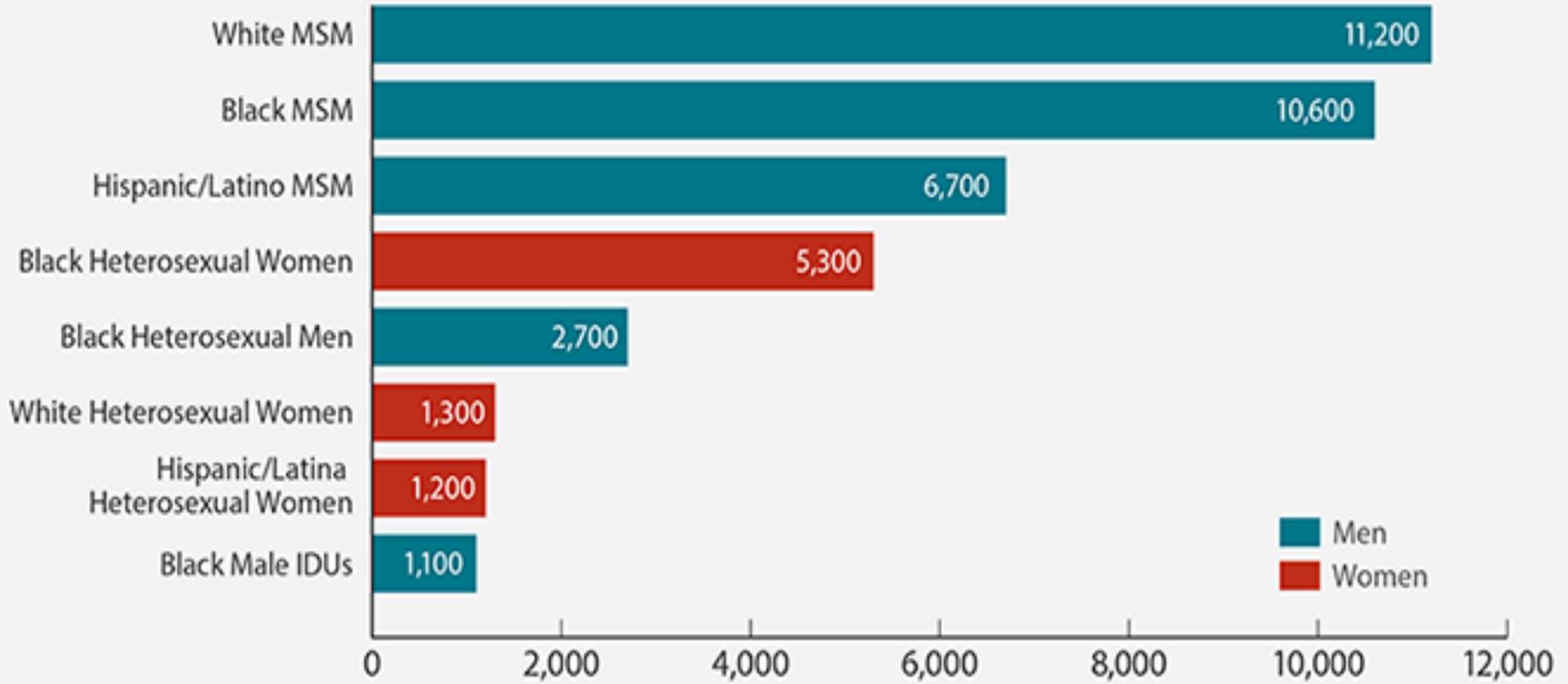




**The Many Faces of HIV/**  
**AIDS:**  
**A View of Disparities**

# Estimated New HIV Infections in the US 2010

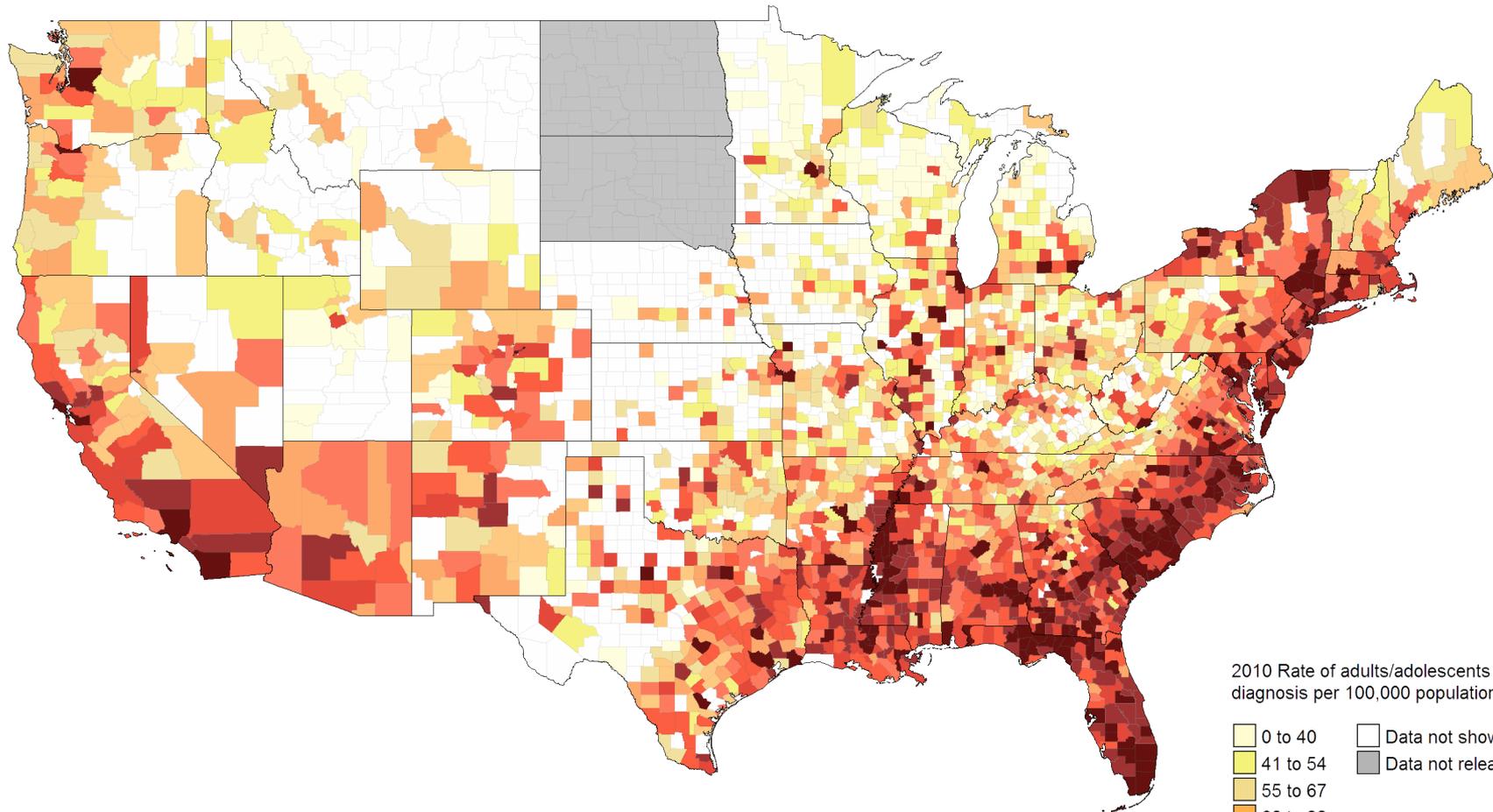
## Most Affected Populations



Source: CDC. Estimated HIV incidence among adults and adolescents in the United States, 2007–2010. HIV

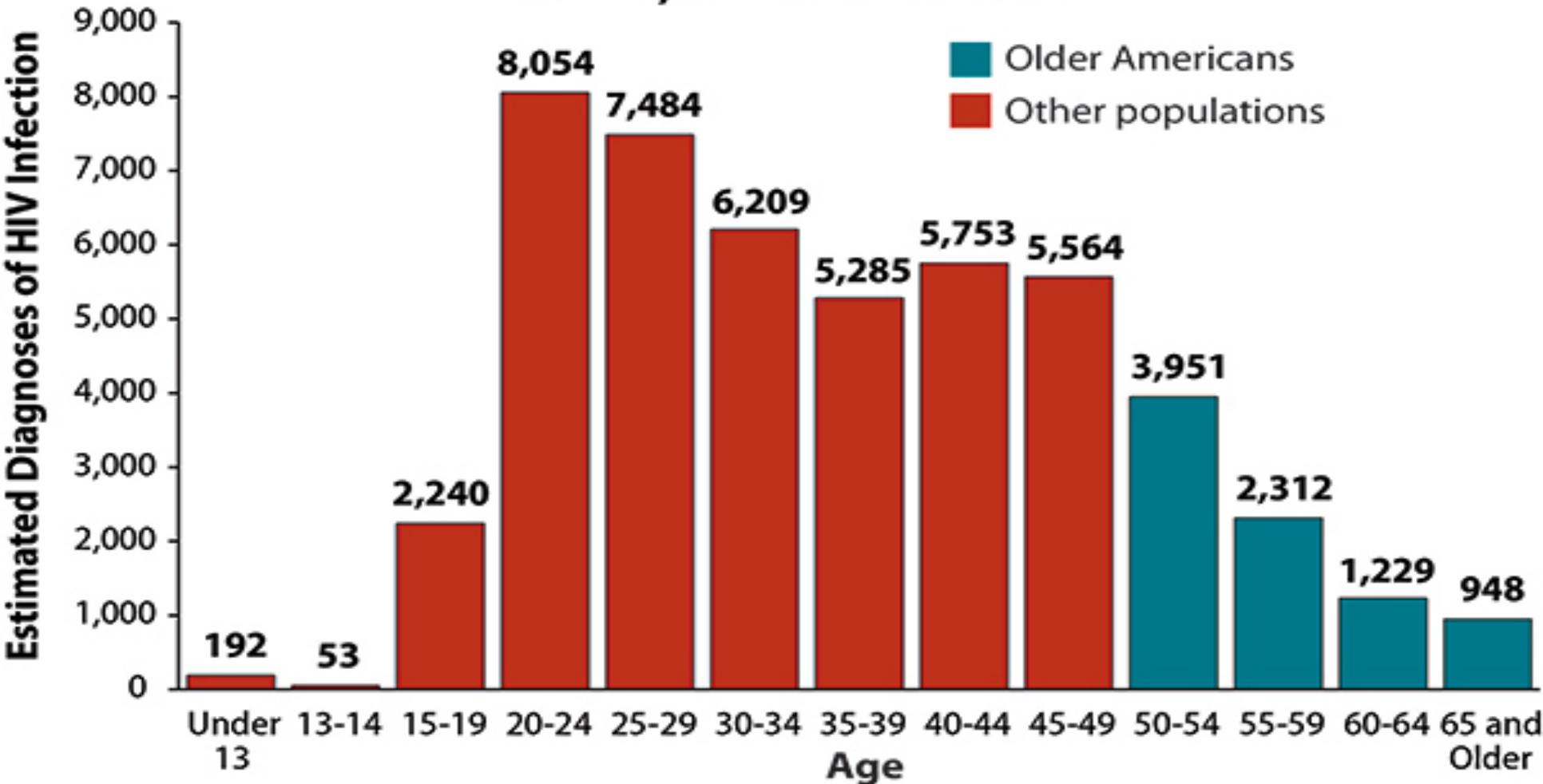


# HIV Infection Rates in U.S. 2010





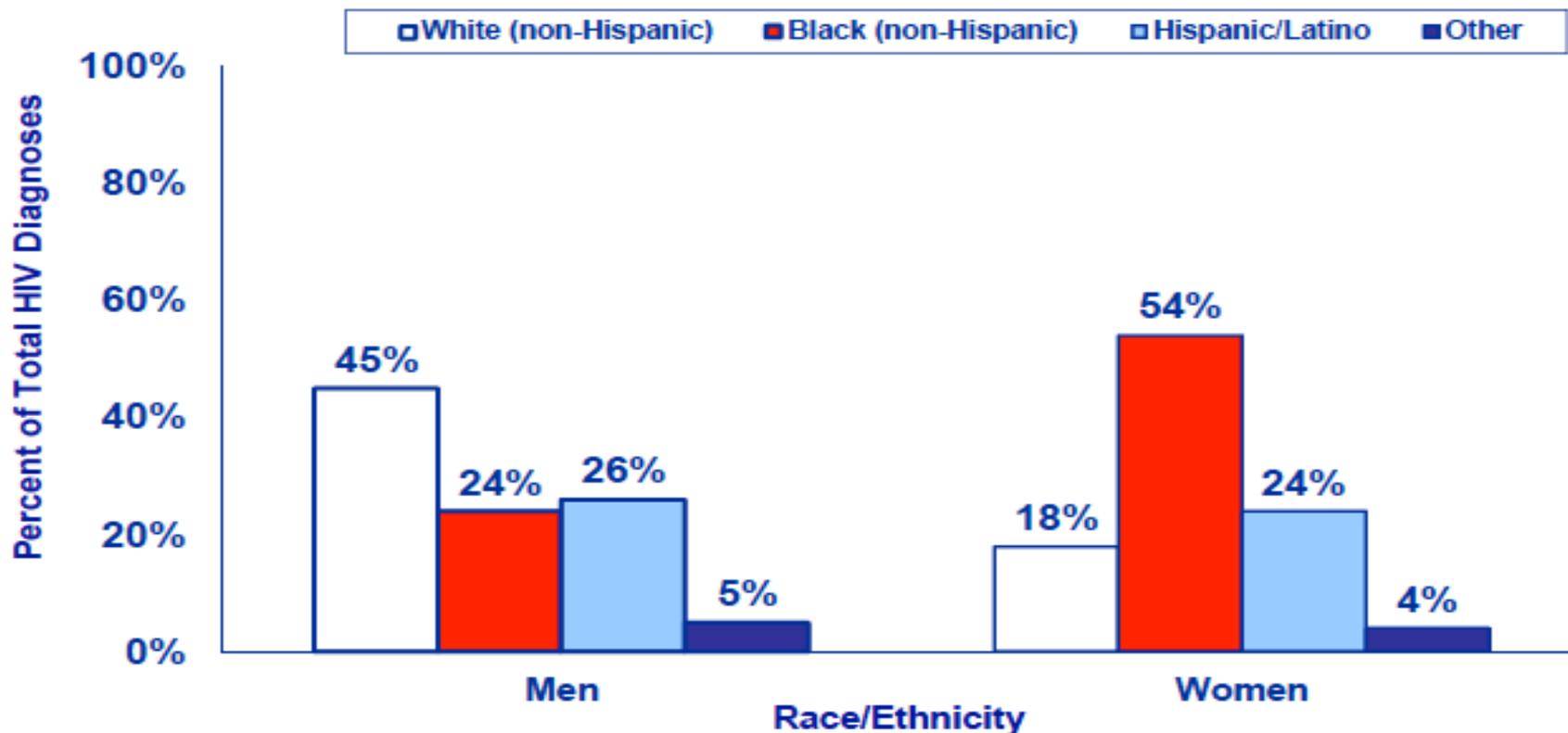
## Estimated Diagnoses of HIV Infection, by Age 2011, United States



Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2011. *HIV Surveillance Report* 2013; vol.23.

# Race and Gender Disparities

**Figure 2. People Diagnosed with HIV Infection Within the Years 2010–2012 by Gender and Race/Ethnicity: Massachusetts**



# HIV and Correctional Facilities

- More than 2 million people in the U.S. are incarcerated in federal, state, and local correctional facilities on any given day.
- In 2010, the rate of diagnosed HIV among inmates in state and federal prisons was more than 5x greater than the rate among people outside.
- Most inmates with HIV acquire it in their communities, before they are incarcerated.



# HIV and Correctional Facilities

- In 2010, there were 20,093 inmates with HIV/AIDS in state and federal prisons with 91% being men.
- Among jail populations, Black men are 5 times as likely as White men, and twice as likely as Hispanic/Latino men, to be diagnosed with HIV.
- Among jail populations, Black women are more than twice as likely to be diagnosed with HIV as White or Hispanic/Latino women.



# Lighting the Shadows

- Disparities thrive when left in darkness and go unnamed.
- Communities of Color have been massively impacted by HIV and we don't have a clear understanding of how and why.
- The disparities highlighted by HIV are directly connected to the disparities seen in other co-factor issues.



# Lighting the Shadows

- Prisons are a clearinghouse for people at very high risk for HIV and prevention efforts must focus on the communities from which inmates hail.
- Disparities are often more a reflection of **Inequity** in funding for, understanding of and appropriate service provision to communities of color.



# The Immune System: An Overview



# What Does a Healthy Immune System Do?

## Innate Immune System

- Response is non-specific
- Exposure leads to immediate response
- No immunological memory

## Adaptive Immune System

- Pathogen and antigen specific
- Lag time between exposure and maximal response
- Exposure leads to immunological memory



# T Cells: What do they do?

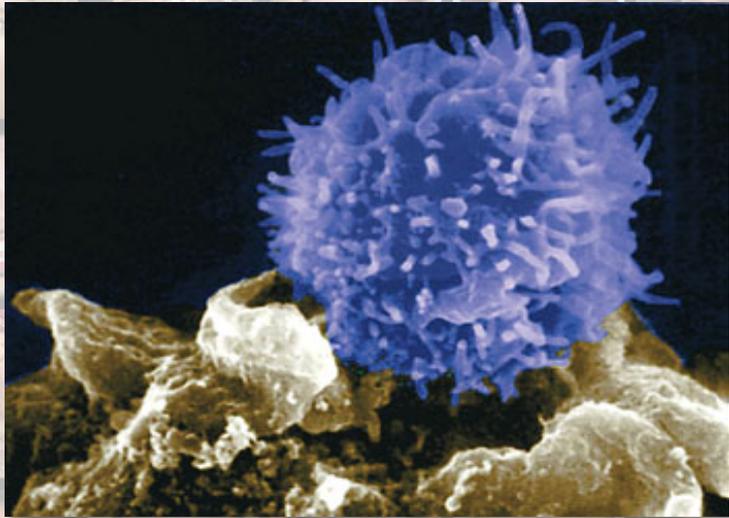


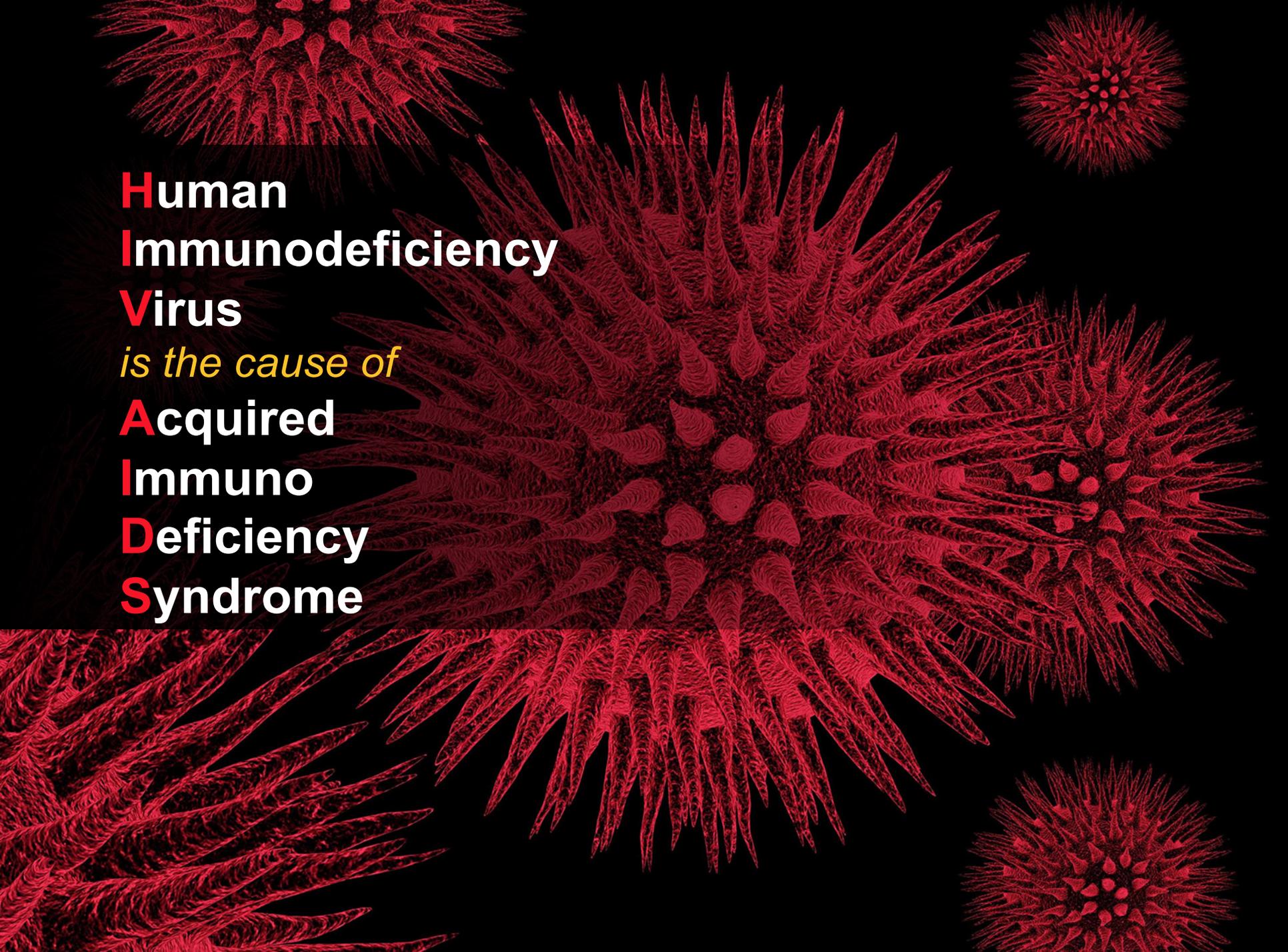
Photo Credit: Lawrence Berkeley National Laboratory

## “Helper” T (CD4) Cells

- Bind to antigen presenting cells.
- Release signals to coordinate other immune responses.

## “Killer” T (CD8) Cells

- Bind to proteins on the surface of malfunctioning cells.
- Release signals that trigger the destruction of the damaged cell.



**H**uman  
**I**mmunodeficiency  
**V**irus  
*is the cause of*  
**A**cquired  
**I**mmuno  
**D**eficiency  
**S**yndrome

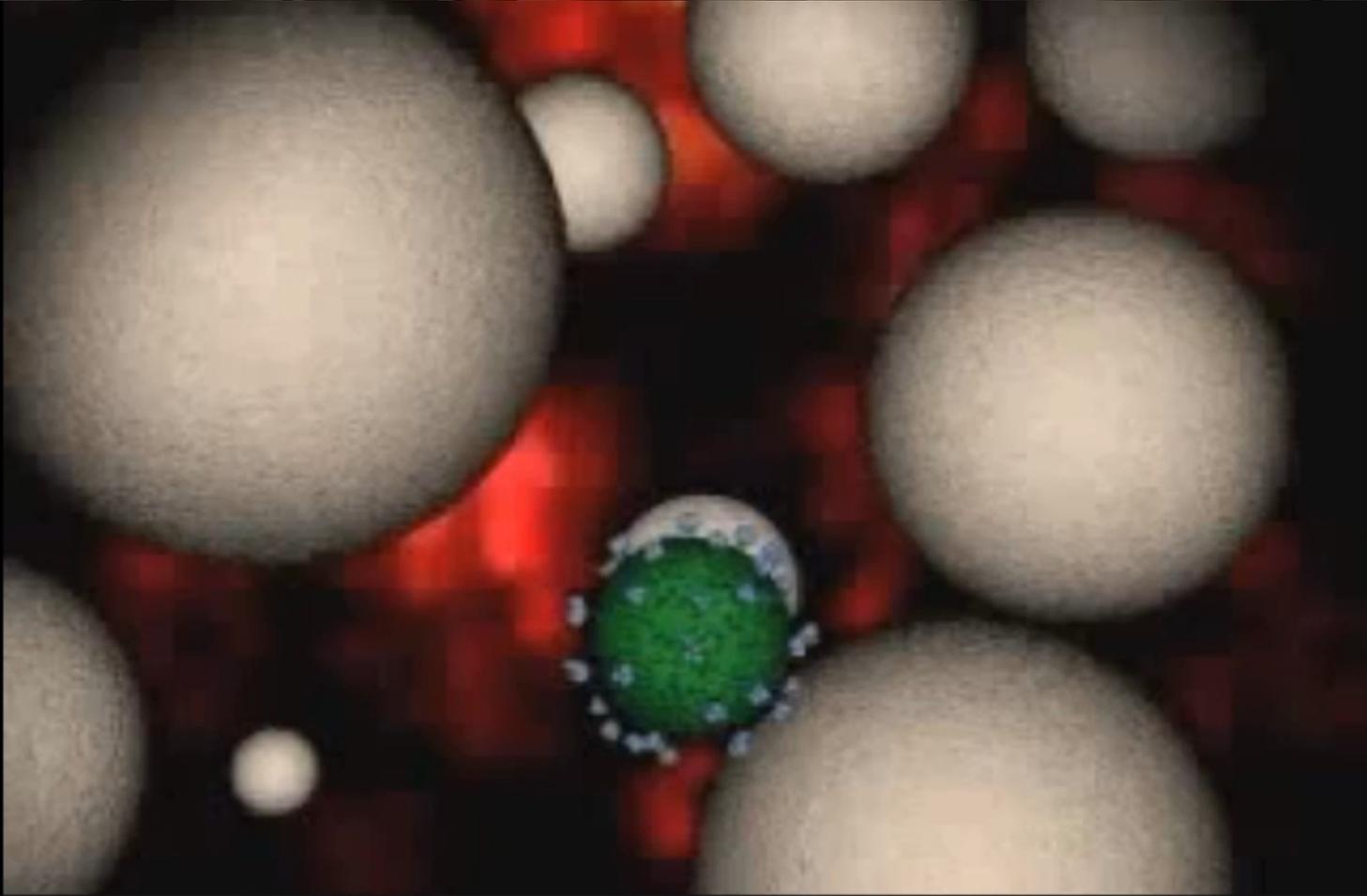
# HIV

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- A retrovirus
- Invades many cells throughout the body
- Main cell loss leading to AIDS is loss of the CD4 immune cell
- Preventable and manageable



# HIV in the Body and Medical Interventions



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www.FreeScienceLectures.com



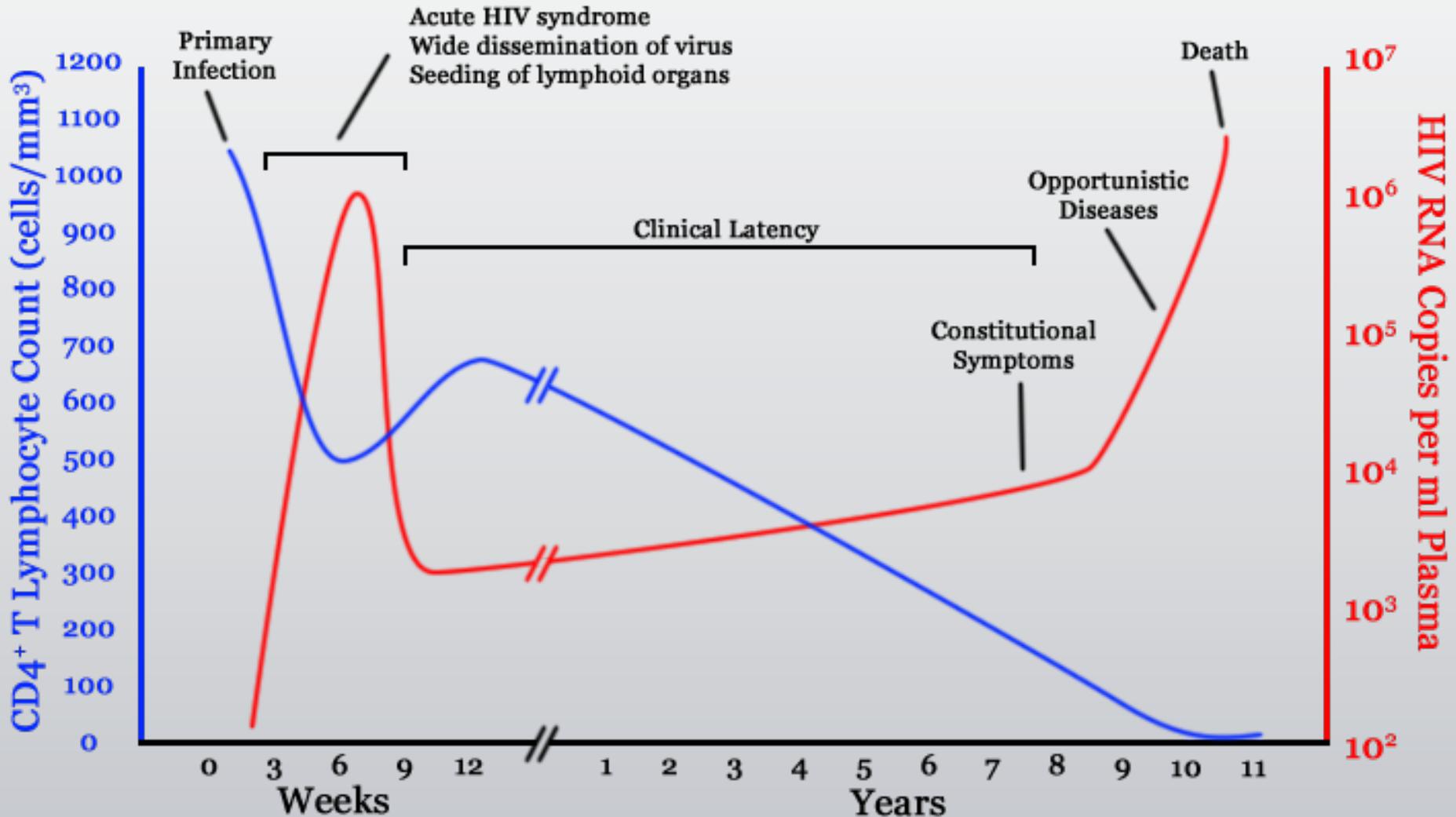
# HIV Disease Progression

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- Course of untreated HIV infection can go on for 10 years or more
  - Acute Infection
  - Clinically Asymptomatic Infection
  - Symptomatic Infections
  - AIDS



# Infection Progression



Adapted from Pantaleo G, Graziosi C, Fauci AS.  
*New concepts in the immunopathogenesis of human immunodeficiency virus infection.*  
N Engl J Med. 1993;328(5):327-335.

# Acute HIV Infection

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- Primary HIV infection can cause an acute retroviral syndrome that is often mistaken for the flu, mononucleosis or a bad cold
- CD4+ T cell count can drop very low in the early weeks, though it usually returns to normal
- Viral load is very high at this time
- Identification of infection and treatment before the immune system is compromised is best



# Clinically Asymptomatic Infection

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- Very few symptoms - Most common symptom swollen lymph nodes
- Median length of 10 years
- After initial infection, CD4+ T cell counts drops at a rate of 30-90 cells per year



# Symptomatic Infection

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- When CD4+ T cell count is between 500 and 200, mild HIV symptoms can begin
- Early symptoms might include: chronic diarrhea, fungal nail infections, oral ulcers, recurrent vaginal yeast infections, thrush, abnormal PAP tests, recurrent respiratory infections
- If recurrent, these symptoms suggest problems with the immune system



# AIDS

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- People living with HIV who have a CD4+ T cell count of 200 or less (cells/mL blood)
- HIV+ and 1 or more Opportunistic Infections
- Tuberculosis, recurrent bacterial pneumonia, and invasive cervical cancer
- Wasting syndrome, severe bacterial infections, chronic herpes infections, chronic diarrhea, neuropathy (numbness and tingling of hands and feet) and Dementia



# End-Stage Disease

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- Untreated HIV infection overwhelms the immune system
- Sometimes combinations of medicines are ineffective or side effects are intolerable
- When all else fails and all options have been exhausted, hospice care is available. Hospice care has seen significant advancements by caring for folks with end stage AIDS. Death is far less frequent today.



# How is **HIV** Transmitted?

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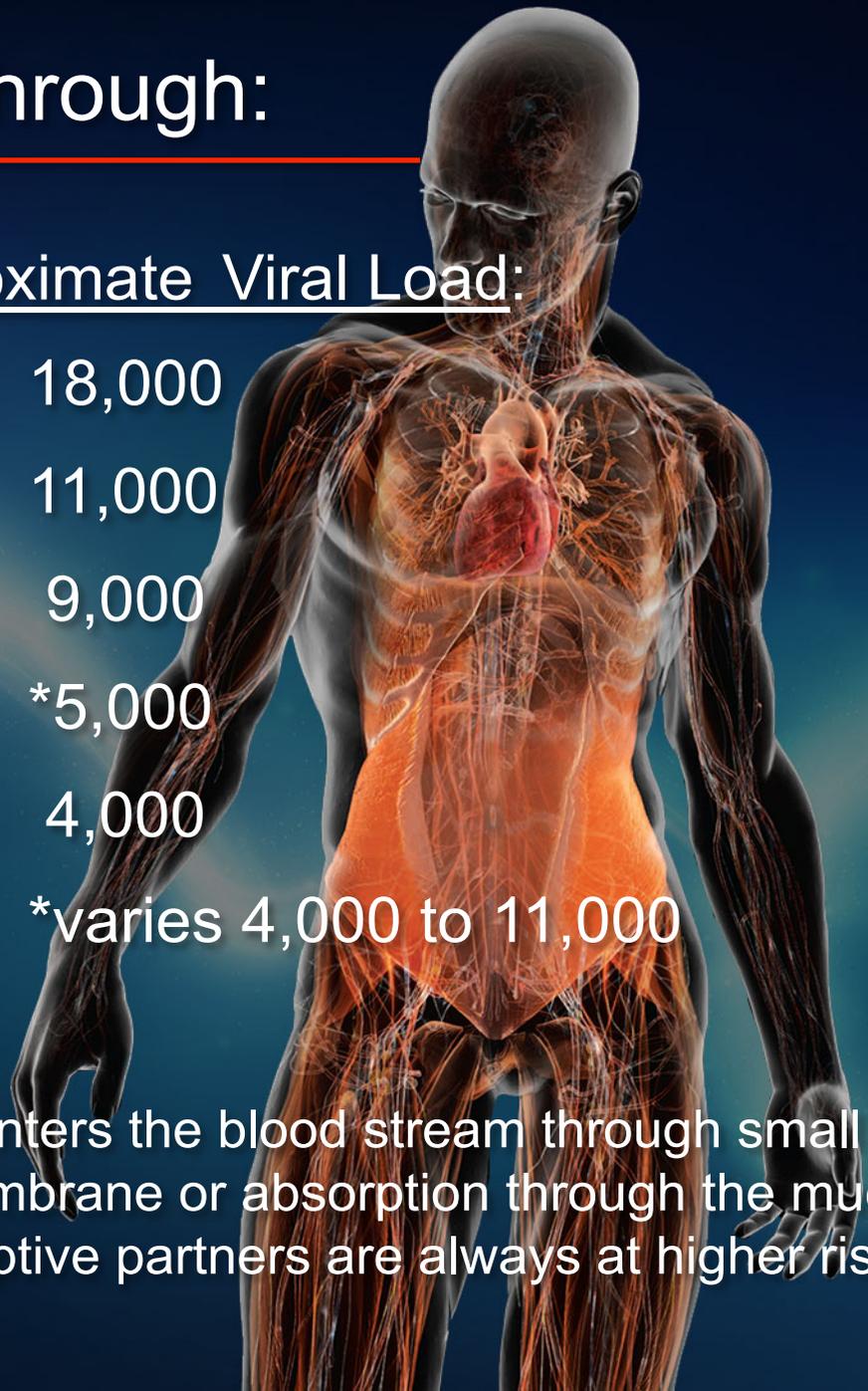


# HIV is transmitted through:

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<u>Body fluids:</u>	<u>Approximate Viral Load:</u>
– Blood	18,000
– Semen	11,000
– Vaginal fluids	9,000
– *Pre-ejaculate	*5,000
– Breast milk	4,000
– *Rectal fluids	*varies 4,000 to 11,000

One or more of these fluids enters the blood stream through small cuts in the skin or mucus membrane or absorption through the mucus membrane. This is why receptive partners are always at higher risk.



# HIV is transmitted through:

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- Behaviors:
  - Unprotected Anal, Vaginal and Oral (less often) Sex
  - Sharing needles
  - Using needles and blades others have used and not cleaned
- Condition:
  - Mother-to-child (vertical) transmission



**Enough Talk!!!**

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**Let's roll up our sleeves and get down to some Risky Behaviors already!!!**

# Continuum of Risk – Activity

In small groups please:

1. Order the behaviors from lowest risk to highest risk
2. Be clear why you are ranking one behavior as more risky than another



**Highest Risk**

**Lowest/ No Risk**

Unpr. Receptive  
Anal Sex

Unpr. Receptive  
Vaginal Sex

Unpr. Insertive  
Anal Sex

Unpr. Insertive  
Vaginal Sex

Performing Oral  
Sex

Receiving Oral  
Sex

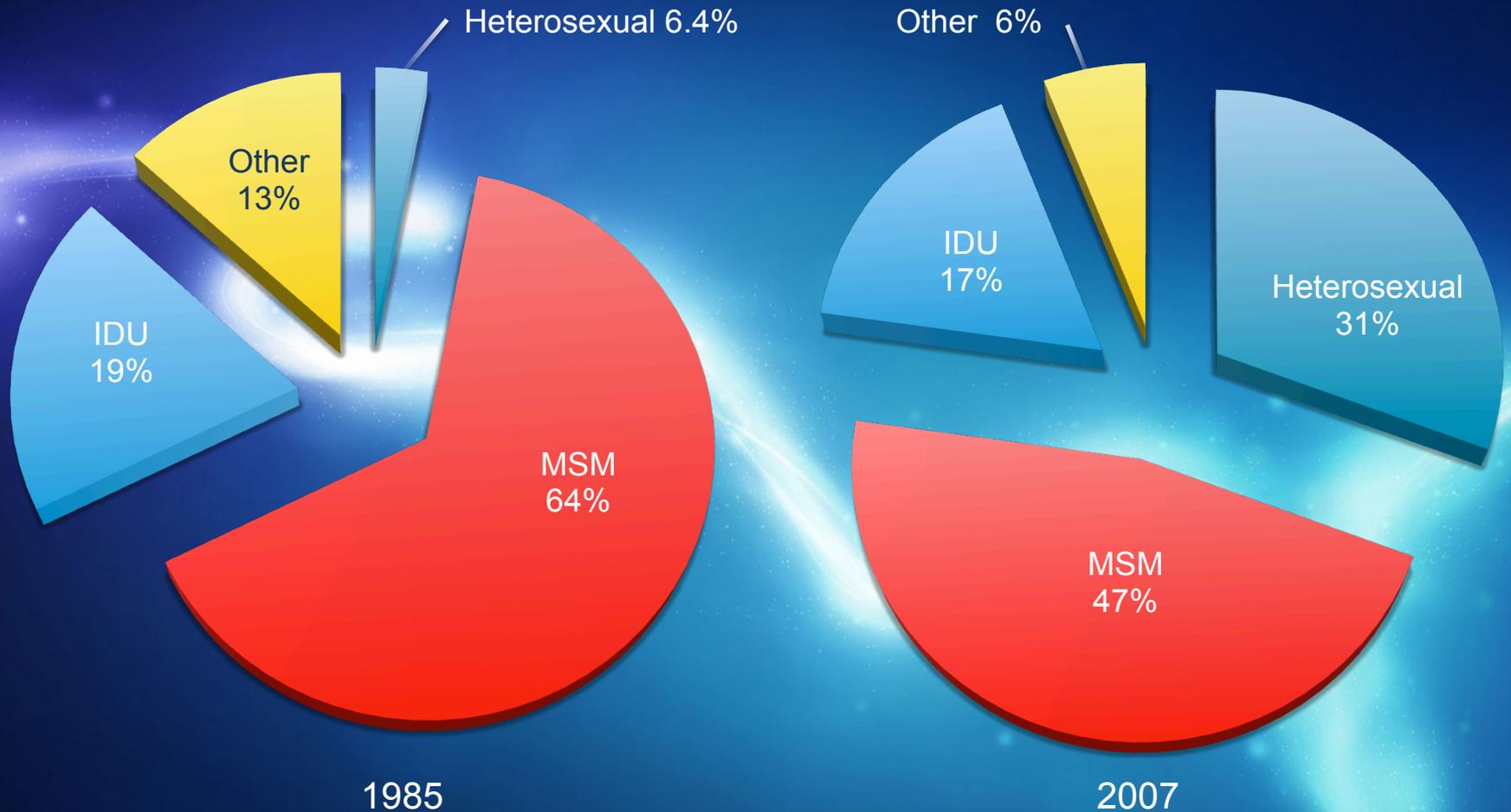
Analingus/  
Rimming

Sharing Sex Toys

Kissing

Masturbation/  
Abstinence

# AIDS Diagnoses by Transmission Category: USA

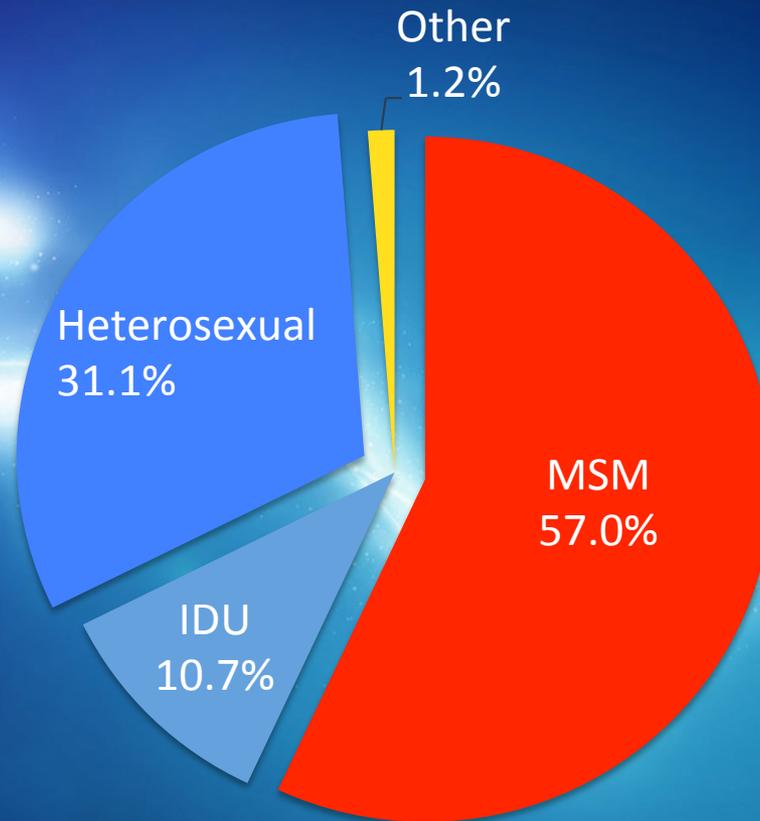


MSM = Men who have sex with men; IDU = Injection drug use.

NOTE: Data are estimates. SOURCE: Kaiser Family Foundation, based on CDC, Presentation by Dr. Harold Jaffe, "HIV/AIDS in America Today", National HIV Prevention Conference, 2003; CDC, *HIV/AIDS Surveillance Report*, Vol. 19, 2009.

# HIV Diagnoses by Transmission Category: USA

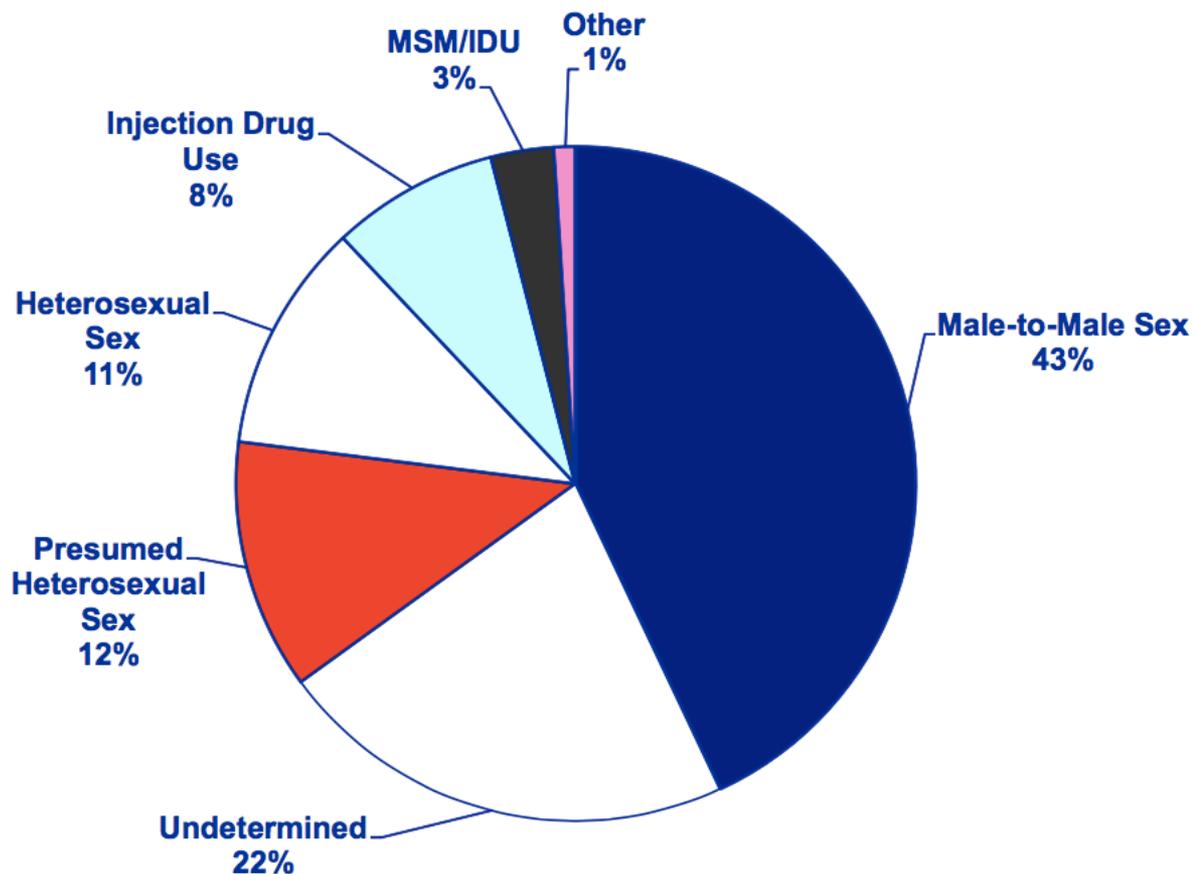
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2013

# HIV Diagnoses by Transmission Category: MA

**Figure 3. People Diagnosed with HIV Infection Within the Years 2010–2012 by Exposure Mode: Massachusetts**



# PEP and PrEP

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- PEP: Post-Exposure prophylaxis, taking anti-HIV medications after possible exposure to reduce risk of infection . Must be started within 72 hours after exposure, and is taken for 28 days. Has been the protocol for medical providers for decades.
- PrEP: Pre-Exposure Prophylaxis. HIV negative people can take an oral pill (Truvada) once per day before coming into contact with HIV to reduce risk of infection.



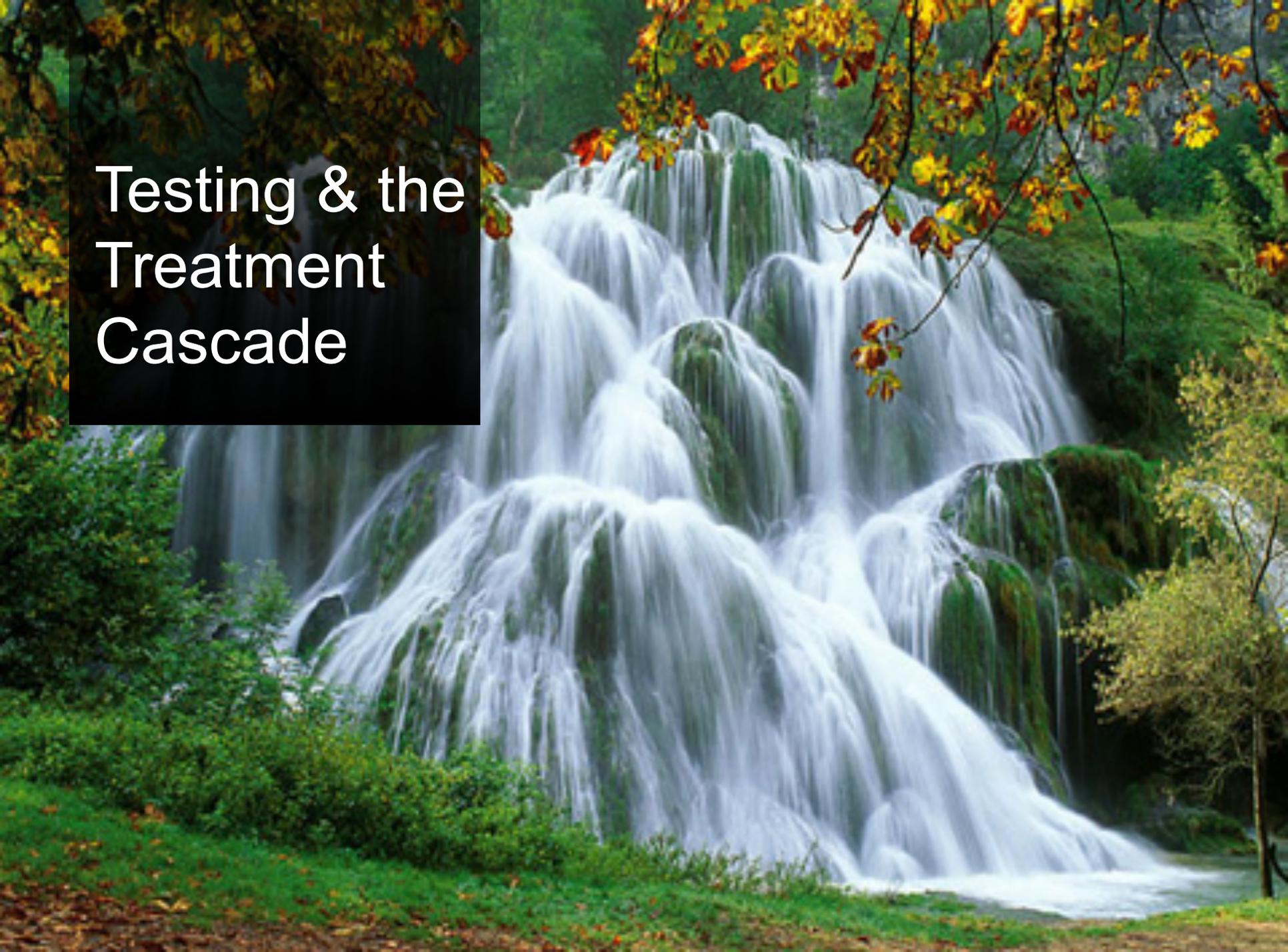
# Harm Reduction Strategies: Sexual Behaviors

- Abstaining from all or specific high-risk behaviors
- Reducing or limiting the number of partners including monogamy
- Condoms or other barriers
- Lower risk sexual behaviors including oral, digital and manual sex
- LUBE!!!
- Plan ahead – prepare for spontaneity
- Getting tested/knowing status
- Setting personal boundaries and communicating them with partners
- Remaining adherent to medication

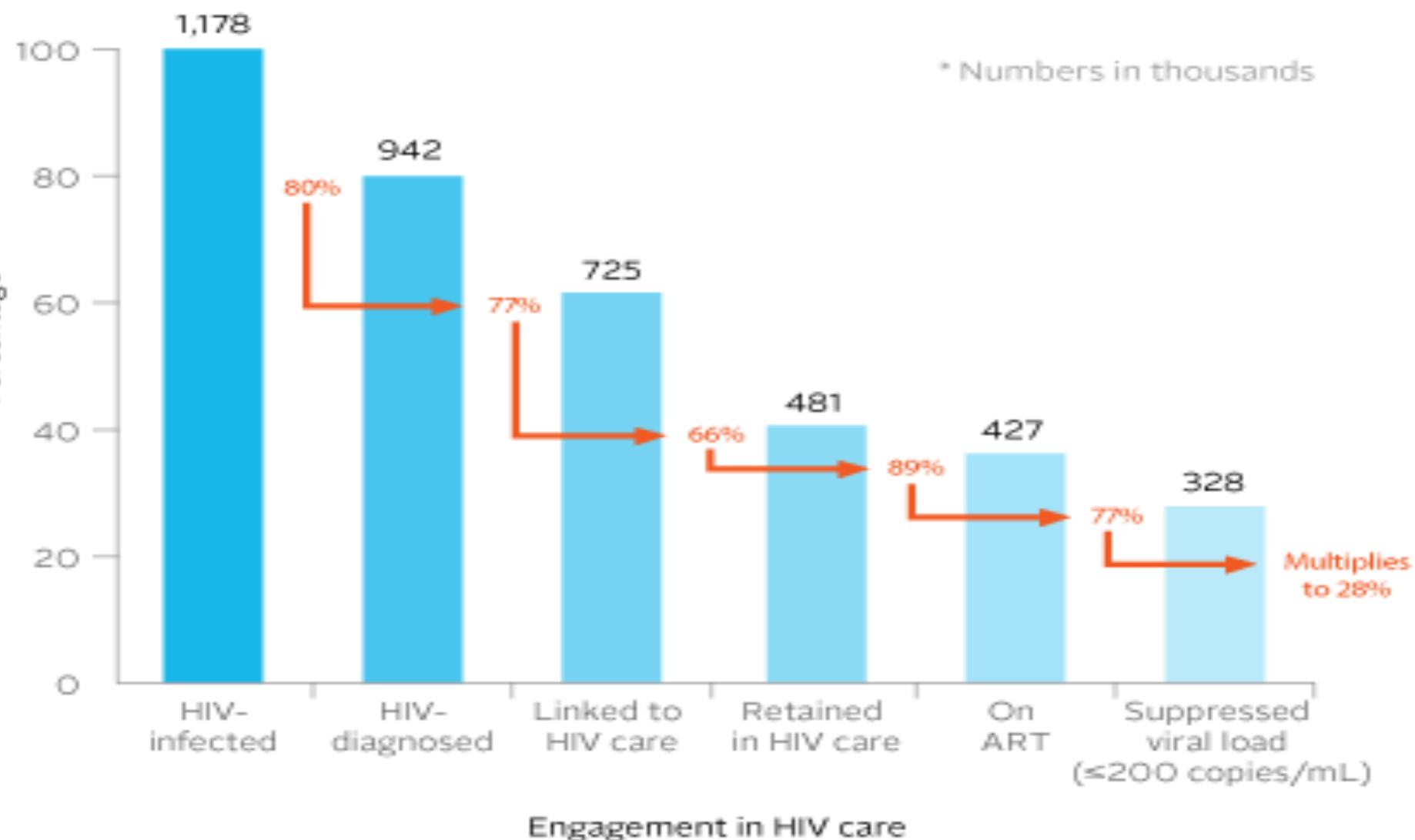
# Harm Reduction Strategies: Drug/ Alcohol Use

- New/clean works
- Cleaning/sterilizing used syringes (threat of Hep-C)
- Not sharing works (cottons, cookers etc.)
- If using/sharing with others, use first or early in line
- Less risky modes of use (smoking, snorting, skin-popping)
- Getting tested/knowing status
- Know the risks of Hep-C

# Testing & the Treatment Cascade

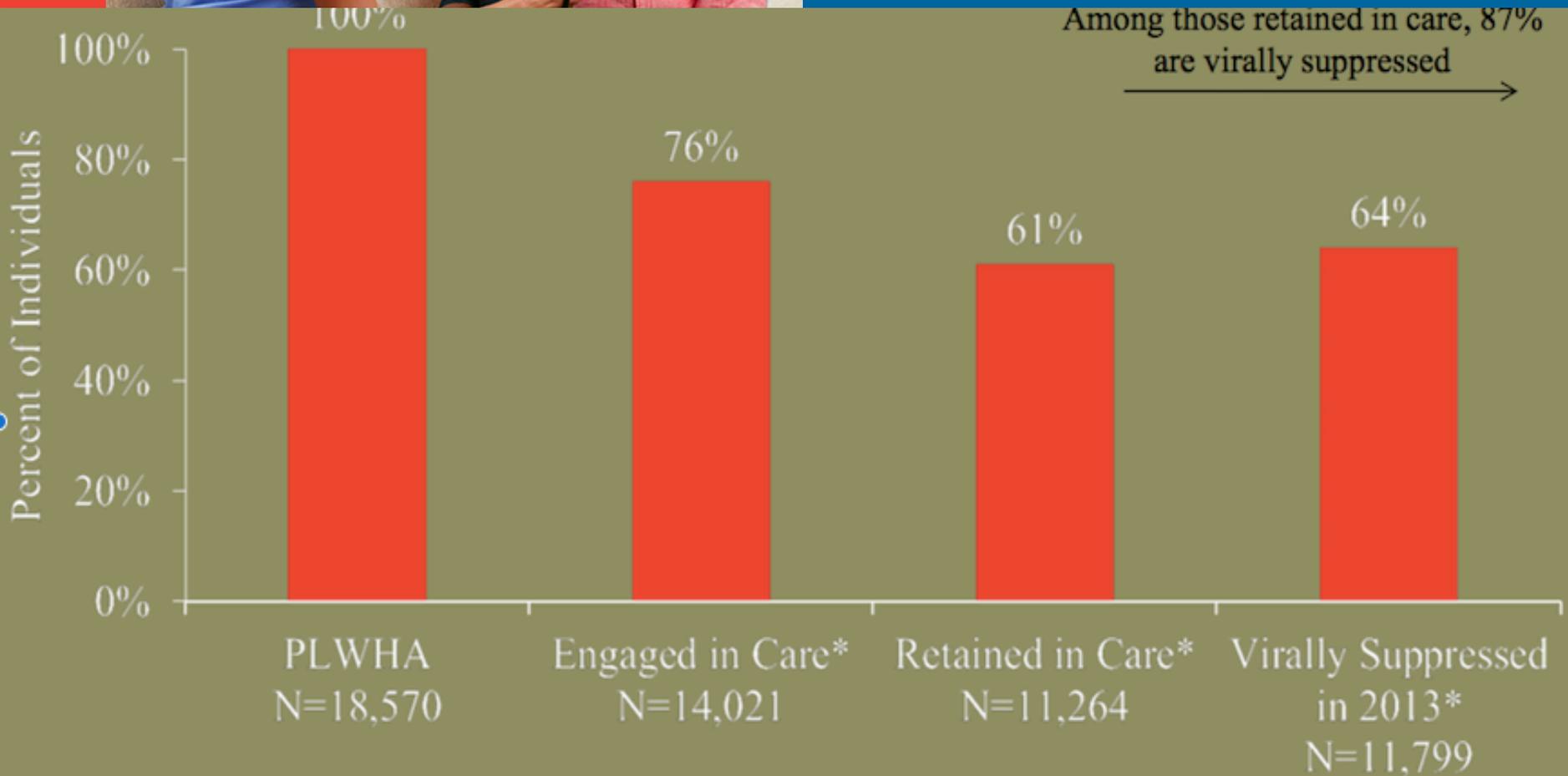


# HIV Treatment Cascade

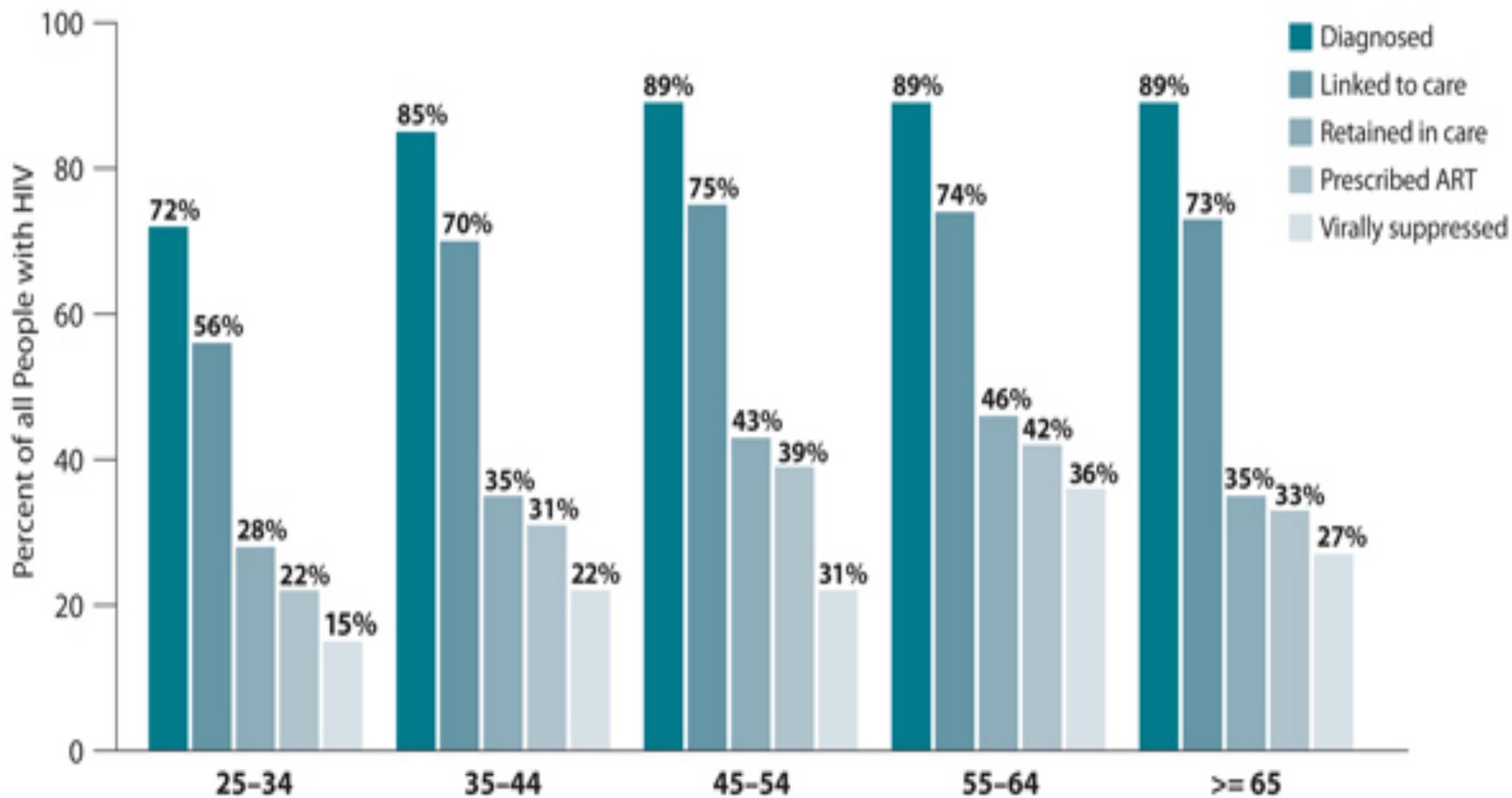




# Massachusetts Care Cascade



## BY AGE: Younger Americans are least likely to be retained in care or have their virus in check; HIV care and viral suppression improve with age, except among those aged 65 and older.



Note: Although national data were not available to provide estimates of viral suppression for those under the age of 25, the data show that 13-24 year-olds are substantially less likely to have been diagnosed with HIV than other age groups (only 41 percent versus more than 70% for all other age groups).

# Screening and Testing for HIV

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One in five of the estimated 1.2 million people in the U.S. who are HIV-positive are unaware of their infection, and the majority of new HIV infections transmitted by people who are unaware of their infection





Despite relatively high prevalence of HIV infection and the known, well-established link among substance use, sex risk behaviors, and HIV, fewer than half of U.S. drug treatment programs offer HIV testing on-site

## Testing for HIV

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The most common HIV test is the **antibody screening test** (*immunoassay*), which tests for the antibodies that your body makes against HIV. The immunoassay may be conducted in a lab or as a rapid test at the testing site or in the field



## Testing for HIV

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The **rapid test** is an immunoassay used for screening, and it produces quick results, in 20 to 30 minutes or less. Rapid tests use blood or oral mucosal fluid to look for antibodies to HIV. Can be conducted in non-clinical settings.



# 4<sup>th</sup> Generation Testing

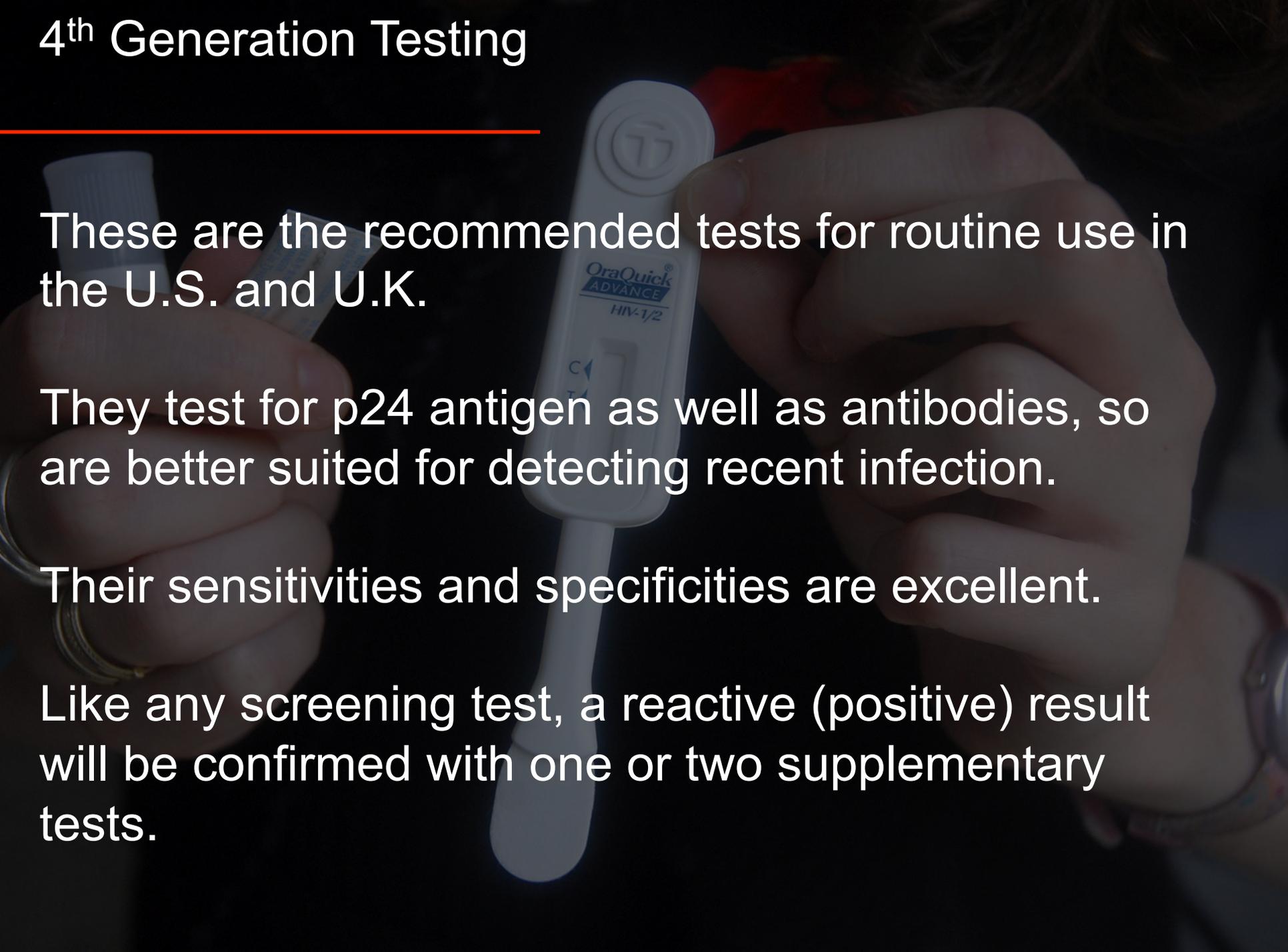
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These are the recommended tests for routine use in the U.S. and U.K.

They test for p24 antigen as well as antibodies, so are better suited for detecting recent infection.

Their sensitivities and specificities are excellent.

Like any screening test, a reactive (positive) result will be confirmed with one or two supplementary tests.





## Counseling for HIV Testing

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- Is ideally provided before and after testing
- Involves providing information about testing
- Emphasize the voluntary nature of the testing (verbal informed consent is required)
- HIV prevention counseling is offered even if the person declines testing
- Is client-centered and utilizes a Harm Reduction approach



# HIV/AIDS Risk Assessment

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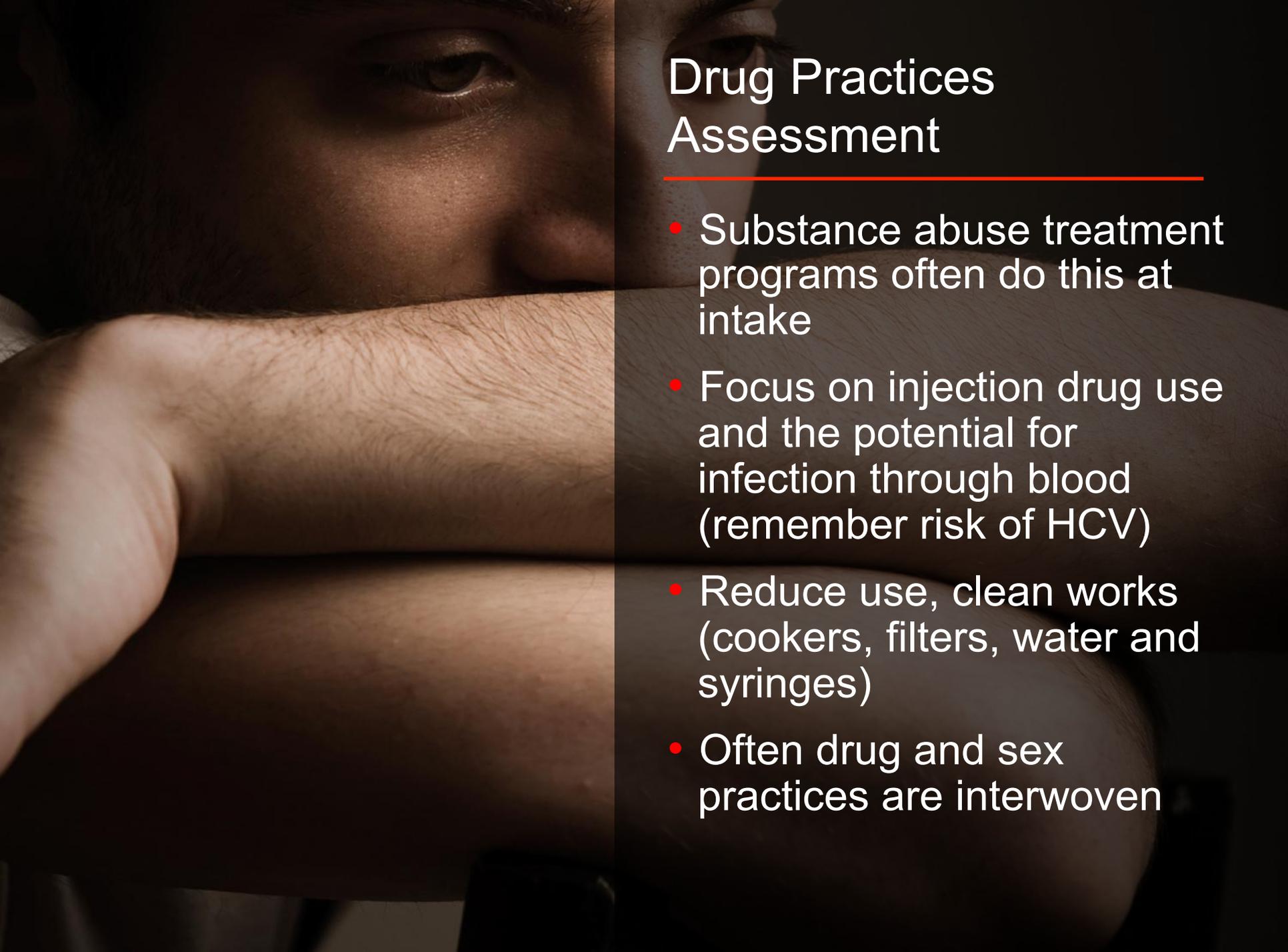
1. Sexual practices assessment with Harm Reduction counseling
2. Drug use assessment with Harm Reduction counseling



## Sexual Practices Assessment

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- Comprehensive sexual practices history including context for the behavior
- Critical to ask direct questions such as, “Have you had any unprotected sex?” “What kinds of sex?” “How many partners have you had in the past 3-6 months?”
- Listen carefully for clients’ attitudes and beliefs



# Drug Practices Assessment

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- Substance abuse treatment programs often do this at intake
- Focus on injection drug use and the potential for infection through blood (remember risk of HCV)
- Reduce use, clean works (cookers, filters, water and syringes)
- Often drug and sex practices are interwoven

# HIV Harm Reduction Counseling

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- Helps the client recognize the benefits to behavior change
- Provides support for behavior change without judgments
- Assists the client in developing the skills needed to sustain behavior change
- Considers environmental and personal factors including context



# Exercise: Challenging Questions



You got it dude.

90zKids.com

# In Conclusion

- HIV/AIDS has a sorted but important history in the US, which is founded in fear, stigma and shaming
- 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
- Early screening is highly promoted by the CDC with the expectation that people diagnosed are then engaged in care.
- Early detection and engagement in care not only allows for better outcomes for HIV+ individuals, but also benefits their greater communities



Thank You!

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Contact Information

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