

HIV/AIDS

What Providers Need
to Know



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**

Helpful Websites

BSAS:

www.mass.gov/dph/bsas

Helpline: www.helpline-online.com

Careers of Substance:

www.careersofsubstance.org

HIV/AIDS Timeline

1981

CDC Reports 1st 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. Ryan White is not allowed to return to school after his AIDS diagnosis.

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

1996 The last showing of the AIDS Quilt in its entirety. After this showing, there was no place in the continental U.S. large enough to host it.



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

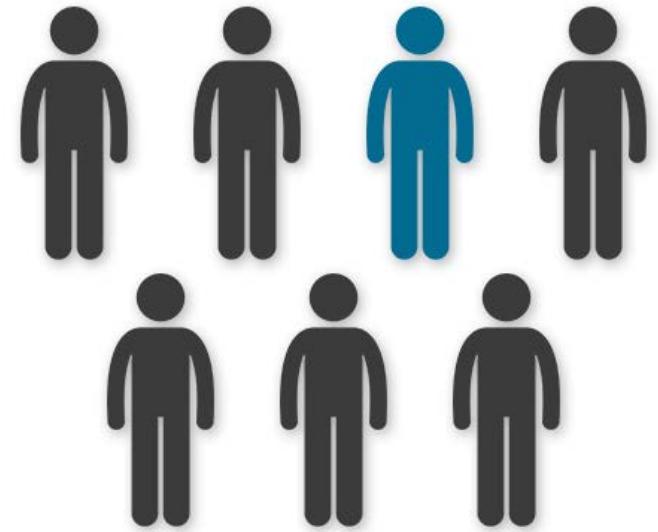
AIDS becomes the leading cause of death in the U.S. among men 25 to 44.

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**.

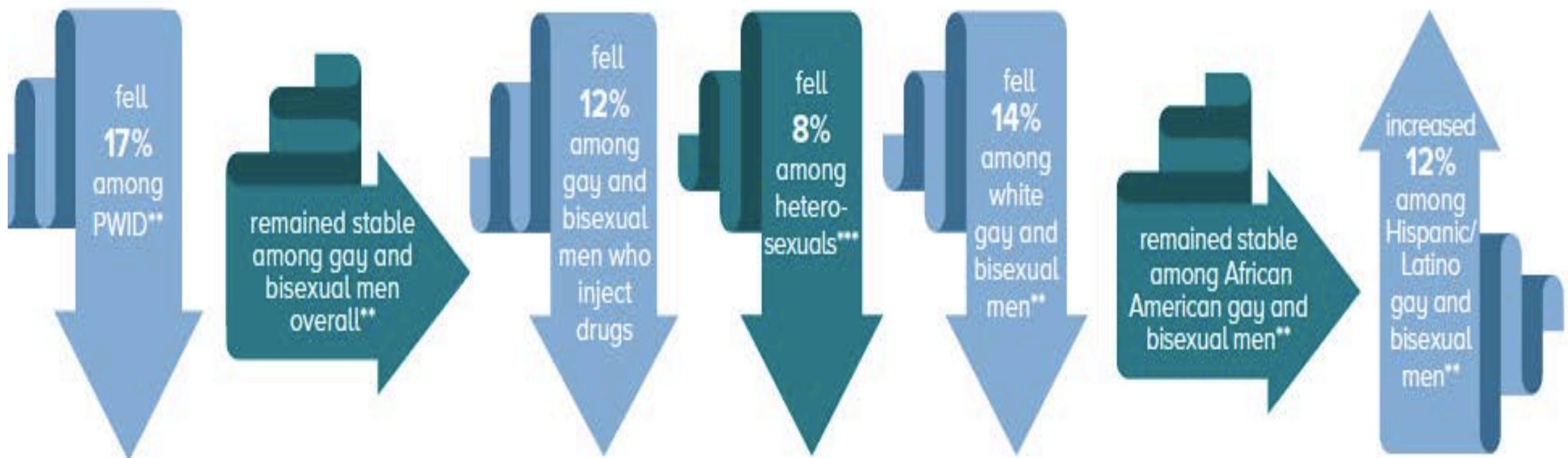
The Importance of Screening

1 in 7 living with HIV



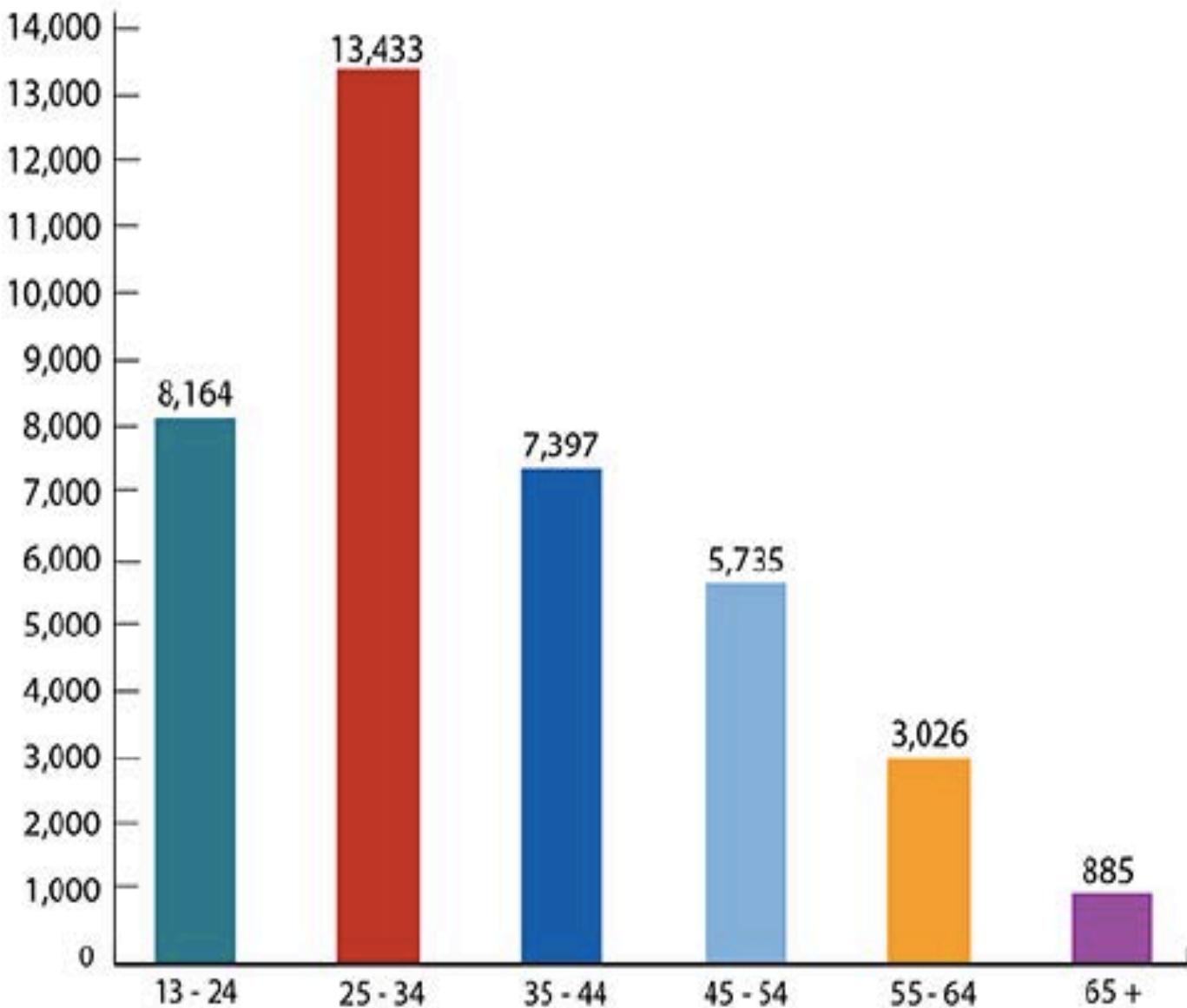
are **unaware** of their infection.

From 2012 to 2017, HIV diagnoses:



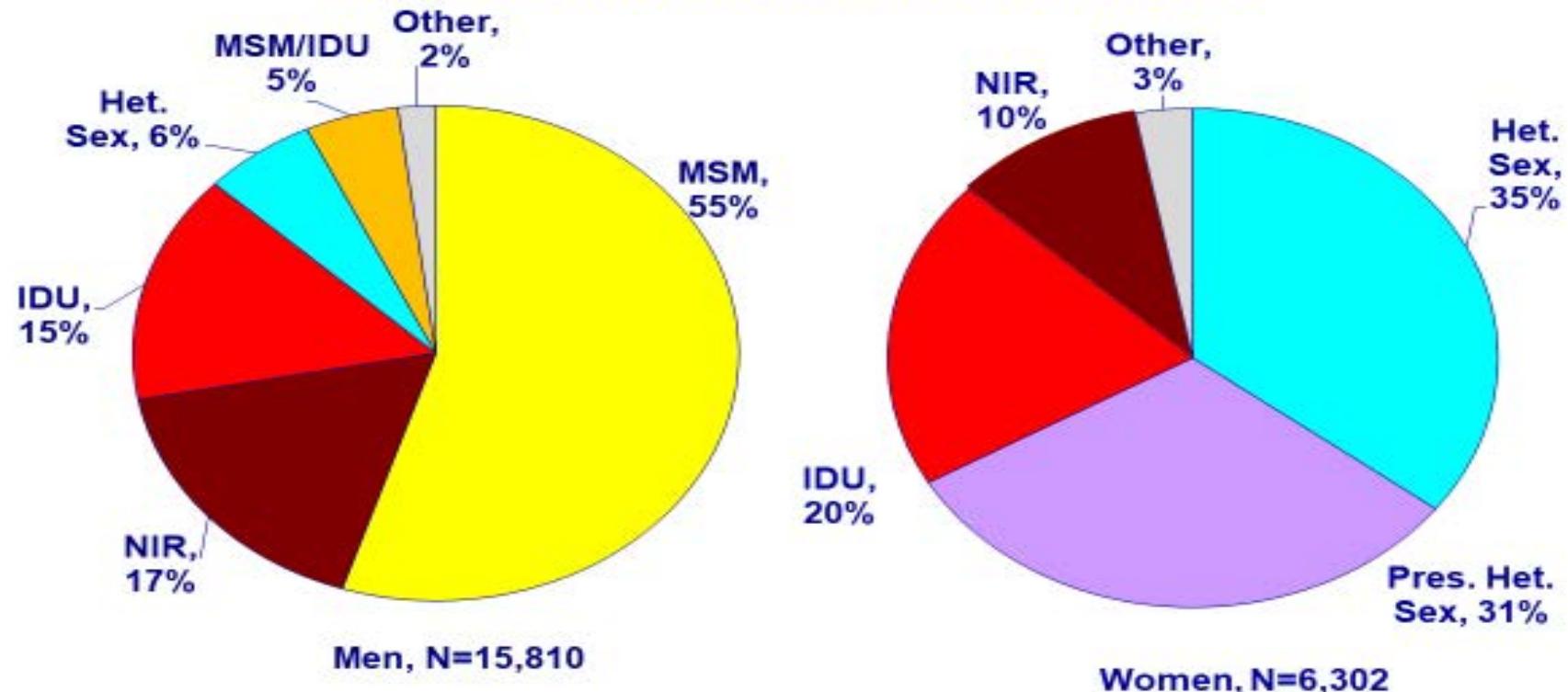
New HIV
Diagnoses in
the United
States by
age, 2017

New HIV Diagnoses in the US and Dependent Areas by Age, 2017



HIV Diagnoses by Transmission Category in MA. 2018

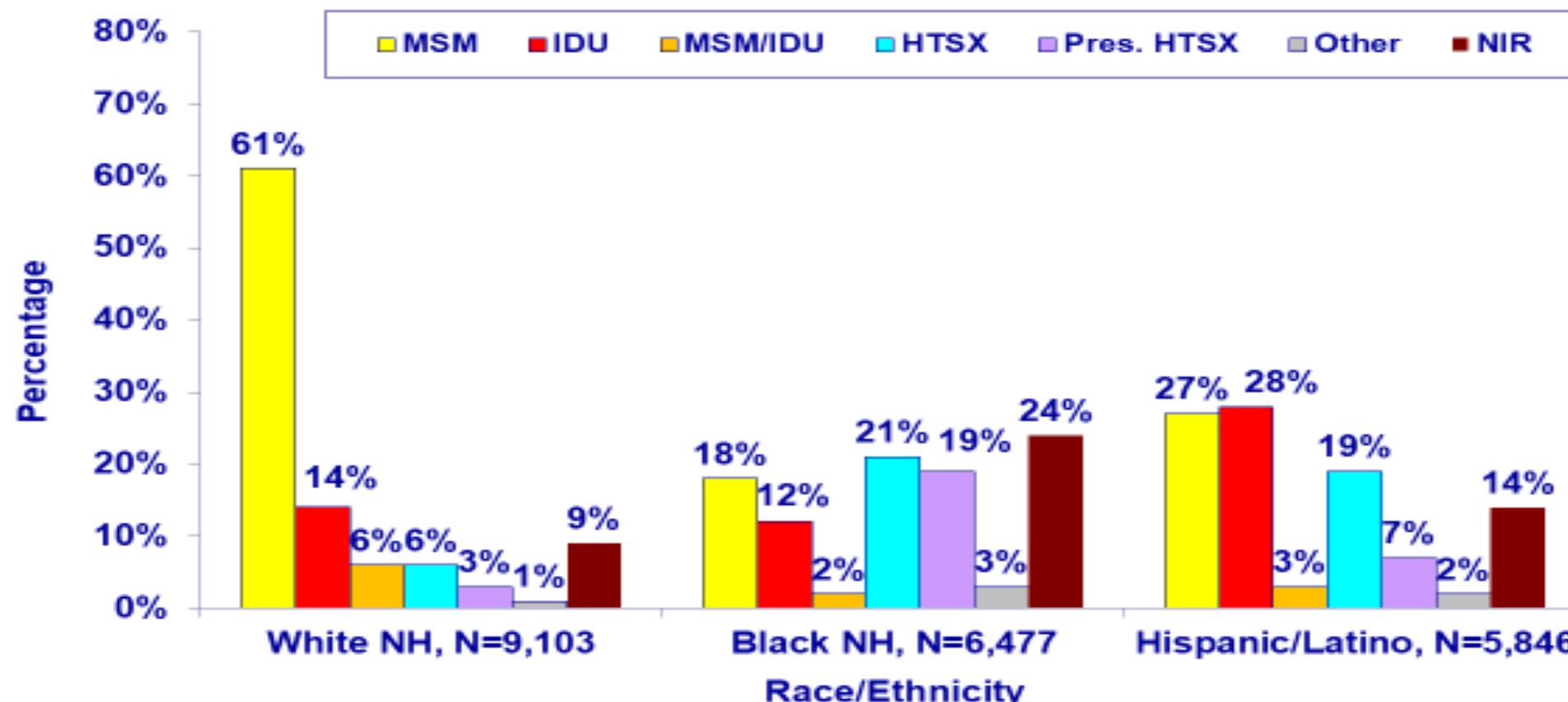
Figure 2. Percentage Distribution of Individuals Living with HIV Infection on January 1, 2018 by Sex at Birth and Exposure Mode: Massachusetts



MSM=Male-to-Male Sex, IDU=Injection Drug Use, Pres.=Presumed, Het. Sex=Heterosexual Sex, NIR.=No Identified Risk
Data Source: MDPH Bureau of Infectious Disease and Laboratory Sciences, Data as of 1/1/18

Race and Gender Disparities in MA. 2018

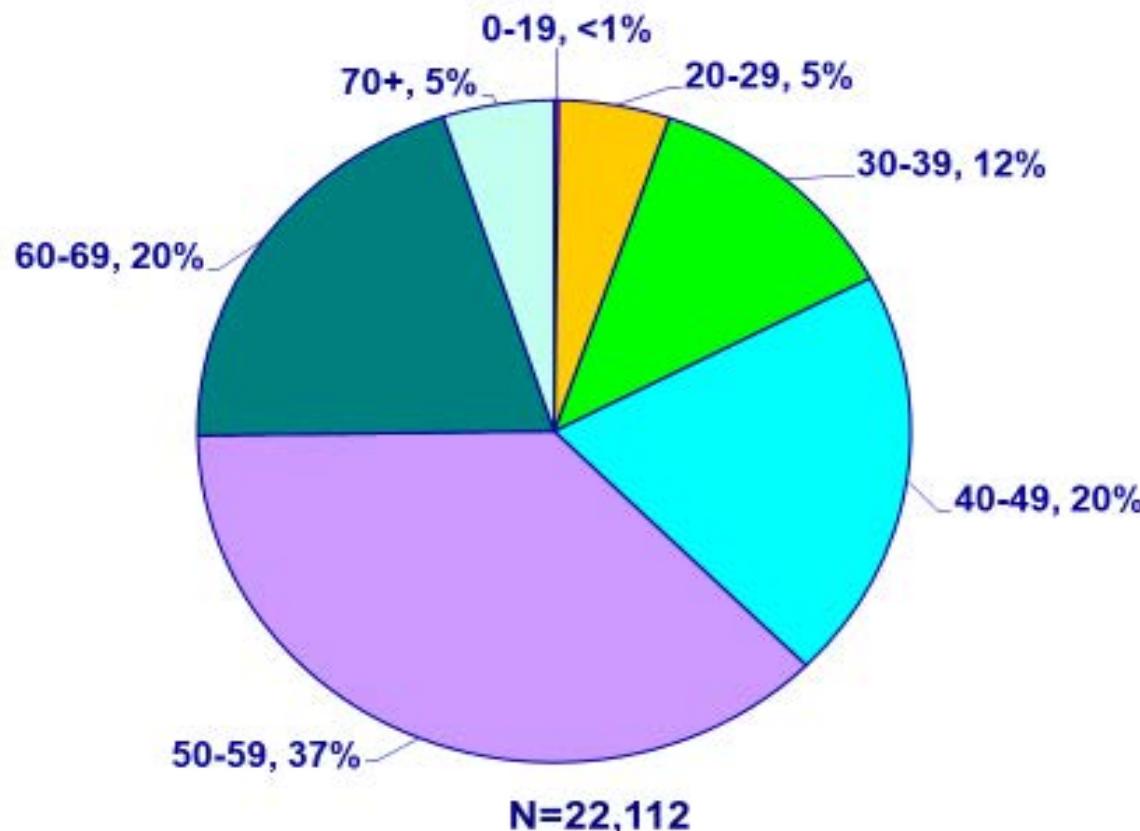
Figure 4. Percentage Distribution of Individuals Living with HIV Infection on January 1, 2018 by Exposure Mode and Race/Ethnicity: Massachusetts



MSM=Male-to-Male Sex, IDU=Injection Drug Use, Pres.=Presumed, Het. Sex=Heterosexual Sex, NIR.=No Identified Risk, NH= Non-Hispanic, Data Source: MDPH Bureau of Infectious Disease and Laboratory Sciences, Data as of 1/1/18

People living
with HIV in
MA. By age

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



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.
- The rate of diagnosed HIV among inmates in state and federal prisons was 5-6x greater than among people outside.
- Most inmates with HIV acquired it in their communities before they are incarcerated.

HIV and Correctional Facilities

- Among jail populations, Black men are 5x 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.



Prevention Challenges in Correctional Settings

- Lack of awareness about HIV and lack of resources for testing/treatment in home communities
- Lack of resources for HIV testing and treatment in correctional facilities
- Lack of updated data regarding HIV and Corrections
- Rapid turnover among jail populations
- Inmate concerns about privacy and fear of stigma



Lighting the Shadows

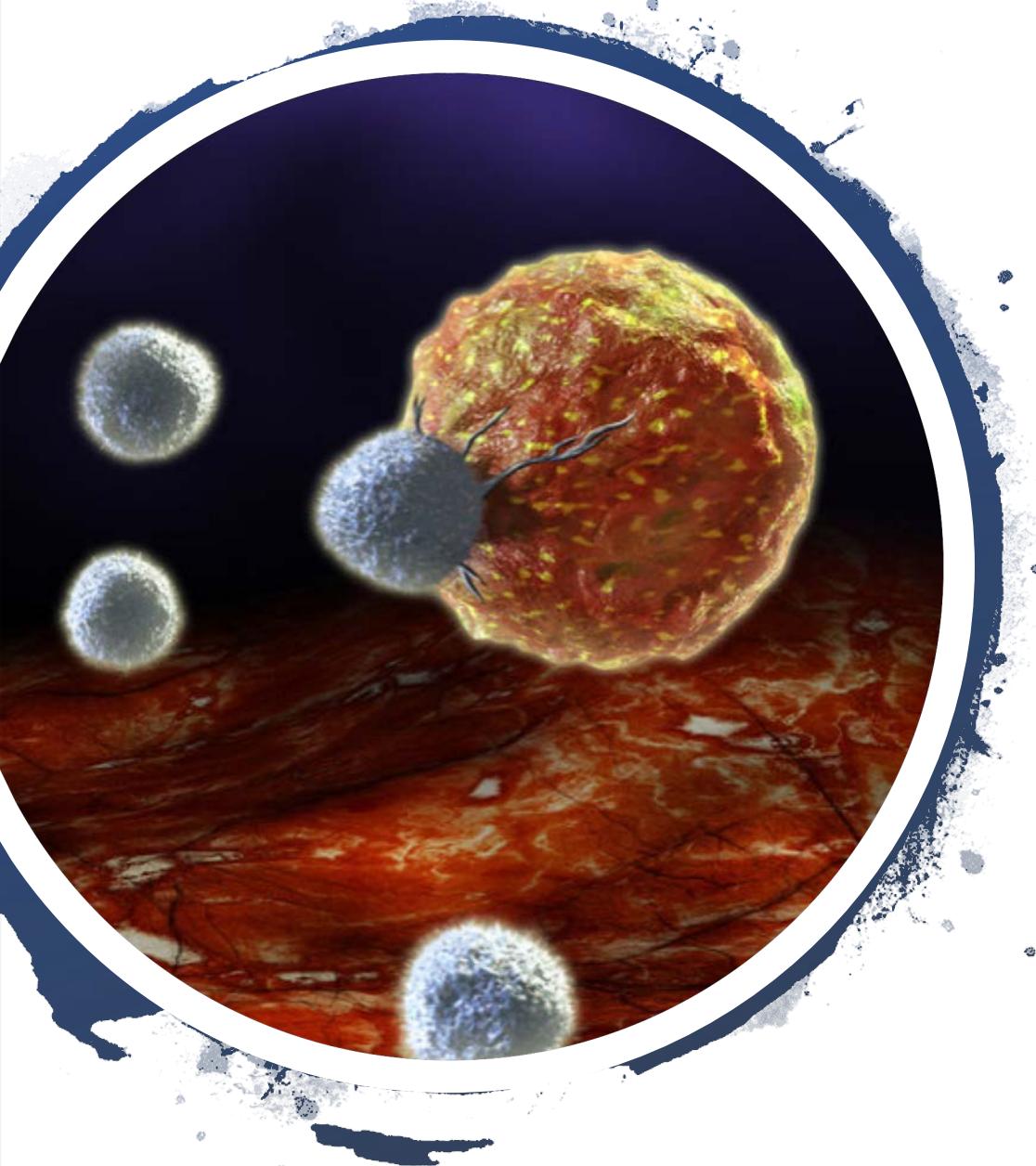
- Disparities thrive when they are left in darkness and go unnamed.
- Communities of Color have been massively impacted by HIV and we do not have a clear understanding of how and why.
- Disparities highlighted by HIV are directly connected to disparities seen in other co-factor issues.



Lighting the Shadows

- Prisons are clearinghouses for people at very high risk for HIV, and prevention efforts must focus on the communities from which inmates come.
- Disparities are often a reflection of **inequities** in understanding of and funding for appropriate services in communities of color.



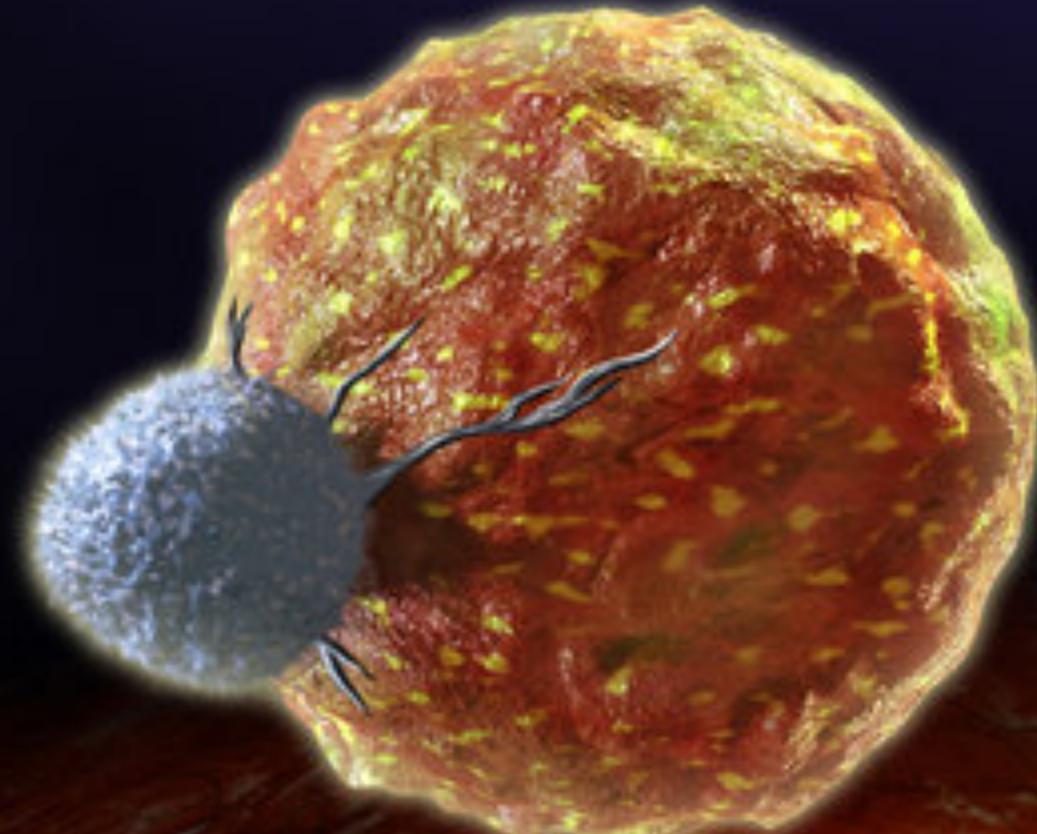


The Immune System

- White blood cells (CD4 cells) are on constant patrol and looking for pathogens.
- When they find a target, they begin to multiply and send signals out to other cells to destroy the pathogen

The Immune System

- People have approximately 1200 white blood cells per ml of blood.
- Once HIV enters the body it uses these cells to replicate.
- Once HIV leaves a white blood cell, it dies
- The fewer white blood cells a person has, the less likely they can fight off common infections

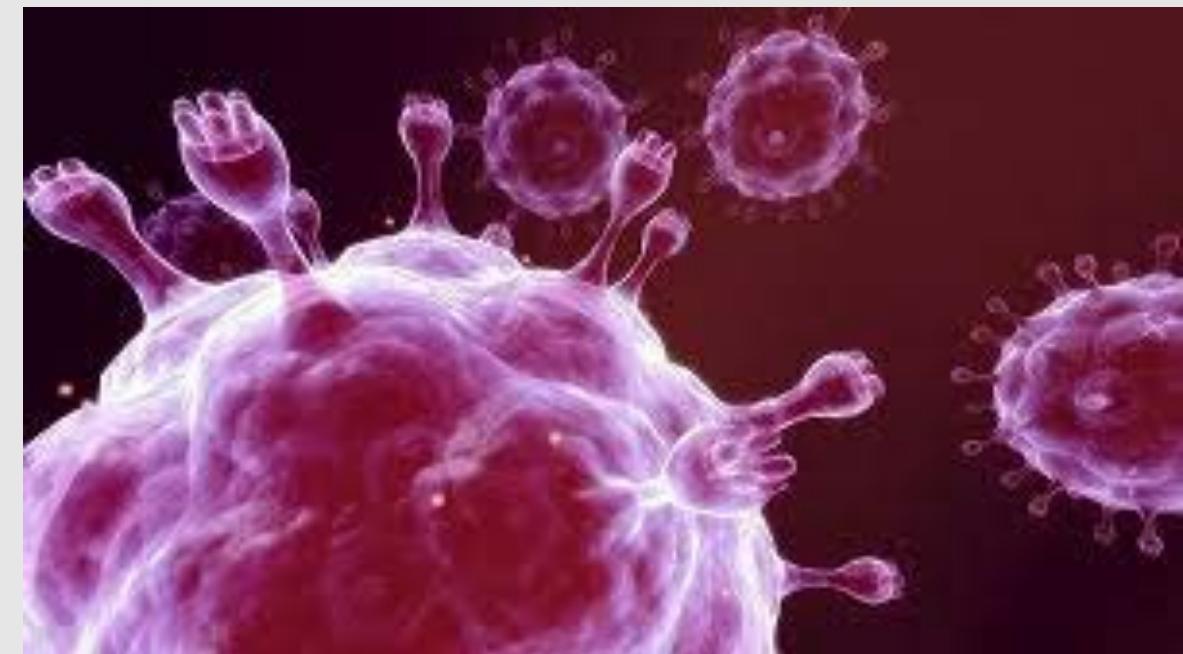




Human Immunodeficiency Virus

is the cause of

Acquired Immuno Deficiency Syndrome

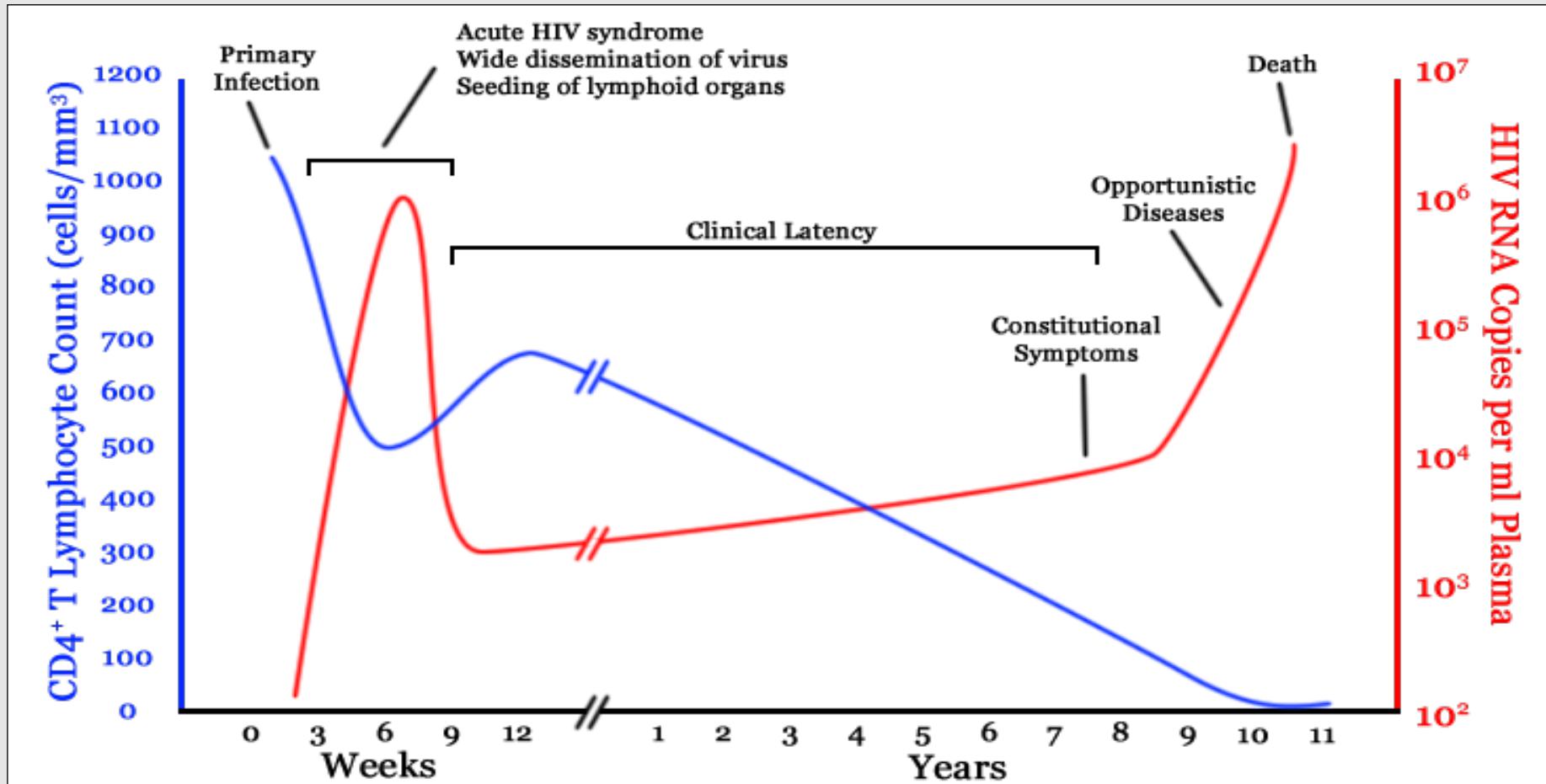


HIV Disease Progression

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

- 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 recovers to a functioning level
- Viral load is very high at this time
- During this time, person is most likely to transmit the virus and least likely to know status
- Identification of infection and treatment before the immune system is compromised is best

Clinically Asymptomatic Infection

Very few symptoms –
most common is
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

Recurrent
respiratory
infections

Shingles

Thrush

AIDS

- 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/ tingling of hands and feet) and Dementia

End-Stage Disease

- 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.

New Developments in ARVs

- Increasing numbers of medications in newer classes drugs – Fusion and Integrase Inhibitors
- Increasing number of single pill options/regiments
- Enhanced Protease Inhibitors which are even more effective than the original formulas (Atazanavir/Darunavir)
- Developing long-acting drugs (oral and injectable) Rilpivirine LA

HIV is transmitted through:

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.

Body Fluids	Approximate Viral Load
Blood	18,000
Semen	11,000
Vaginal fluids	9,000
*Pre-ejaculate	*5,000
Breast Milk	4,000

HIV is transmitted through:

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)**

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

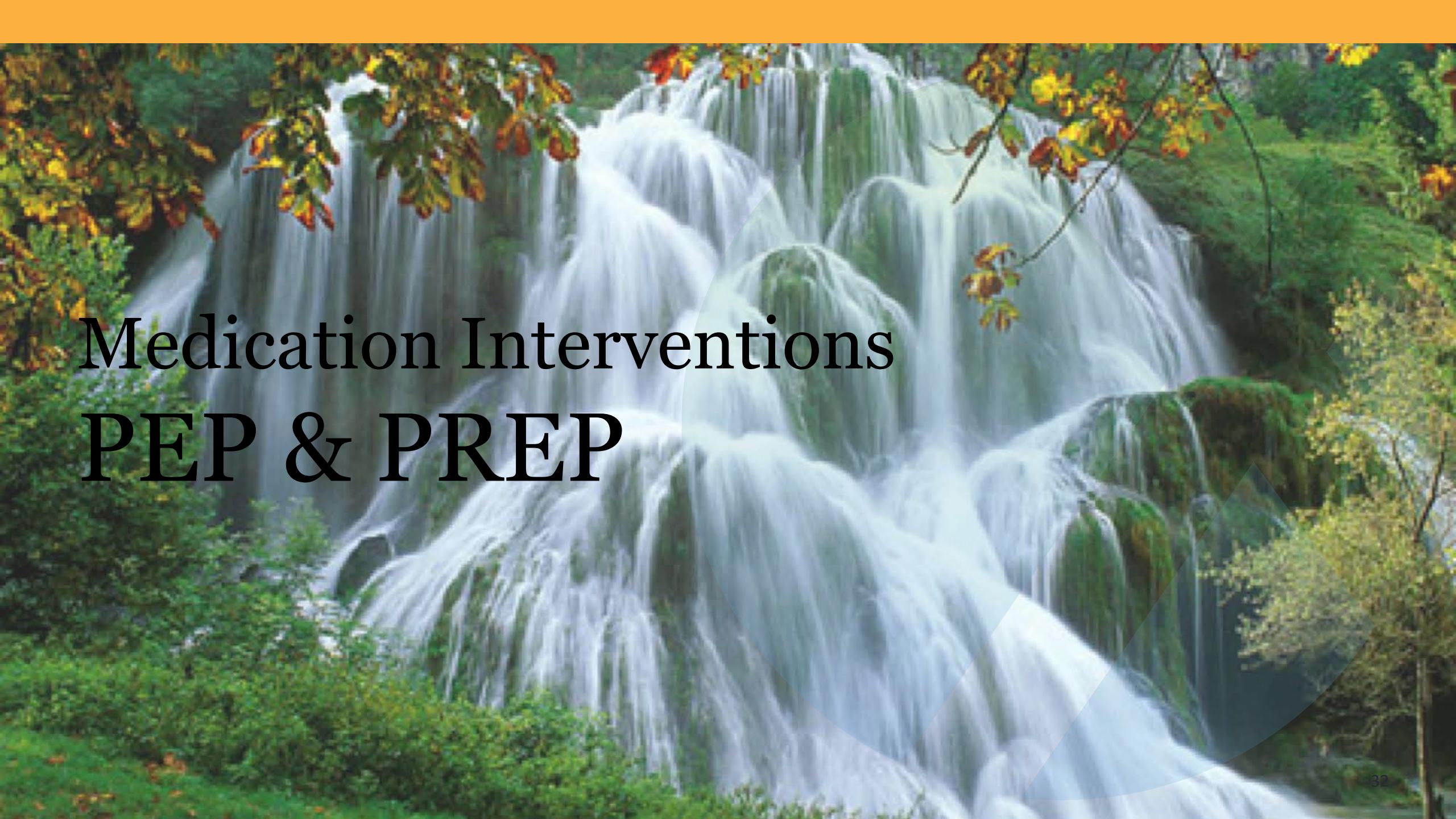
Analingus/Rimming

Sharing Sex Toys

Kissing

Masturbation/Abstinence

Blood Transfusion in the U.S. 2019



Medication Interventions PEP & PREP

Post Exposure Prophylaxis (PEP)

- PEP: taking anti-HIV medications after possible exposure to reduce the risk of infection.
- Must be started within 72 hours after exposure
- Exposure must be high risk (sharing needles, vag/anal sex)
- Available to any sexual assault survivor within 72 hours
- Is taken for 28 days
- Has been the protocol for medical providers for decades



A person is wearing a black gas mask and a bright yellow latex suit. They are holding the fabric of the suit open with both hands, creating a wide V-shape. The background is a plain, light color.

What's the Definition of “Safer Sex”?

Pre-Exposure Prophylaxis (PrEP)

PrEP: 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.

- When taken properly can offer between 96% to 98% protection from infection from high risk exposures
- Studies show that risk compensation (engaging in higher risk behaviors based on less fear of infection) is not a high risk factor
- Accessed through PCP and Massachusetts HDAP

Candidates for PrEP



- The amount of HIV in body fluids is called viral load. Effective HIV treatment suppresses the amount of HIV in the body fluids to the point where standard tests are unable to detect any HIV.
- Doctors call this ‘virologic suppression’ but it is often known as ‘having an undetectable viral load’ or ‘being undetectable’.

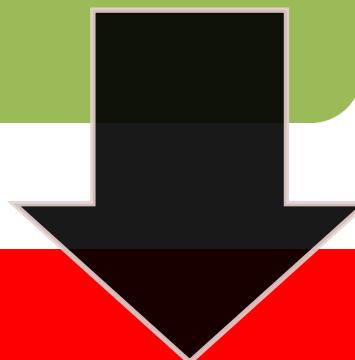


Treatment As Prevention

U=U

**What does
this mean ?**

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 your body fluids to pass HIV on during sex. In other words, the person is not infectious.
 - For as long as the viral load stays undetectable, your chance of passing on HIV to a sexual partner is zero. As the campaign slogan puts it, 'Undetectable equals Untransmittable' or 'U=U'.



What the Data Says

The first large scale study of 415 heterosexual couples in the year 2000 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%.



Why Wasn't it 100%?

The only reason it was not 100% is that one person in the trial did acquire HIV, but this 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.

Wait, there is
more

The Partner one and Partner two studies in 2016 and 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).



One
more.....

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.

Between the three studies, no transmission of HIV from a sexual partner with an undetectable viral load was seen in nearly 130,000 acts of unprotective penetrative sex.

This means the risk of transmission by a partner with an undetectable viral load is statistically equivalent to zero.

What About Other STI's

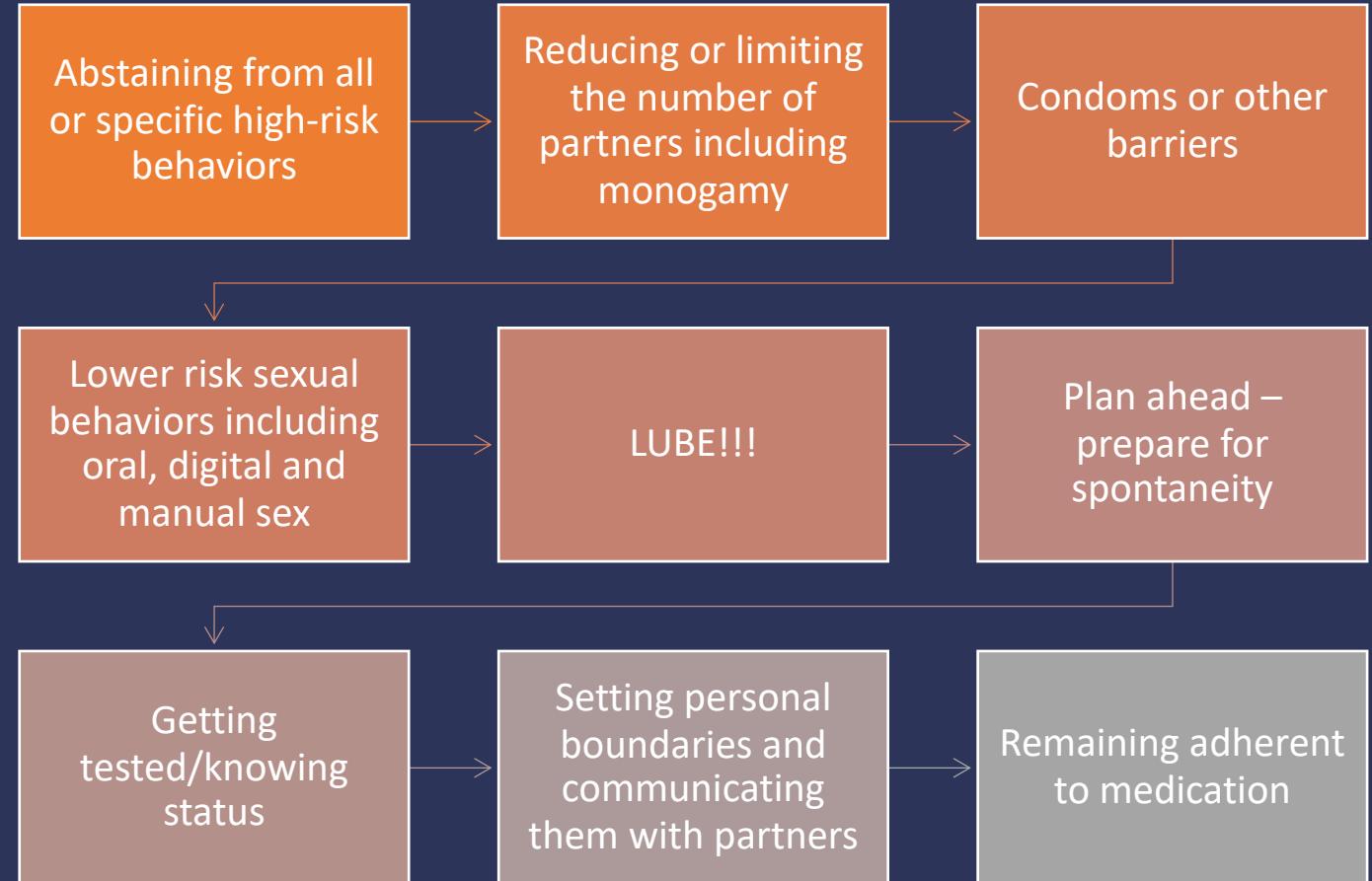
- HIV treatment will protect the partners from HIV.
- It does not protect either person from other sexually transmitted infections.
- Regular sexual health checkups are recommended.
- Using condoms will help prevent STIs.



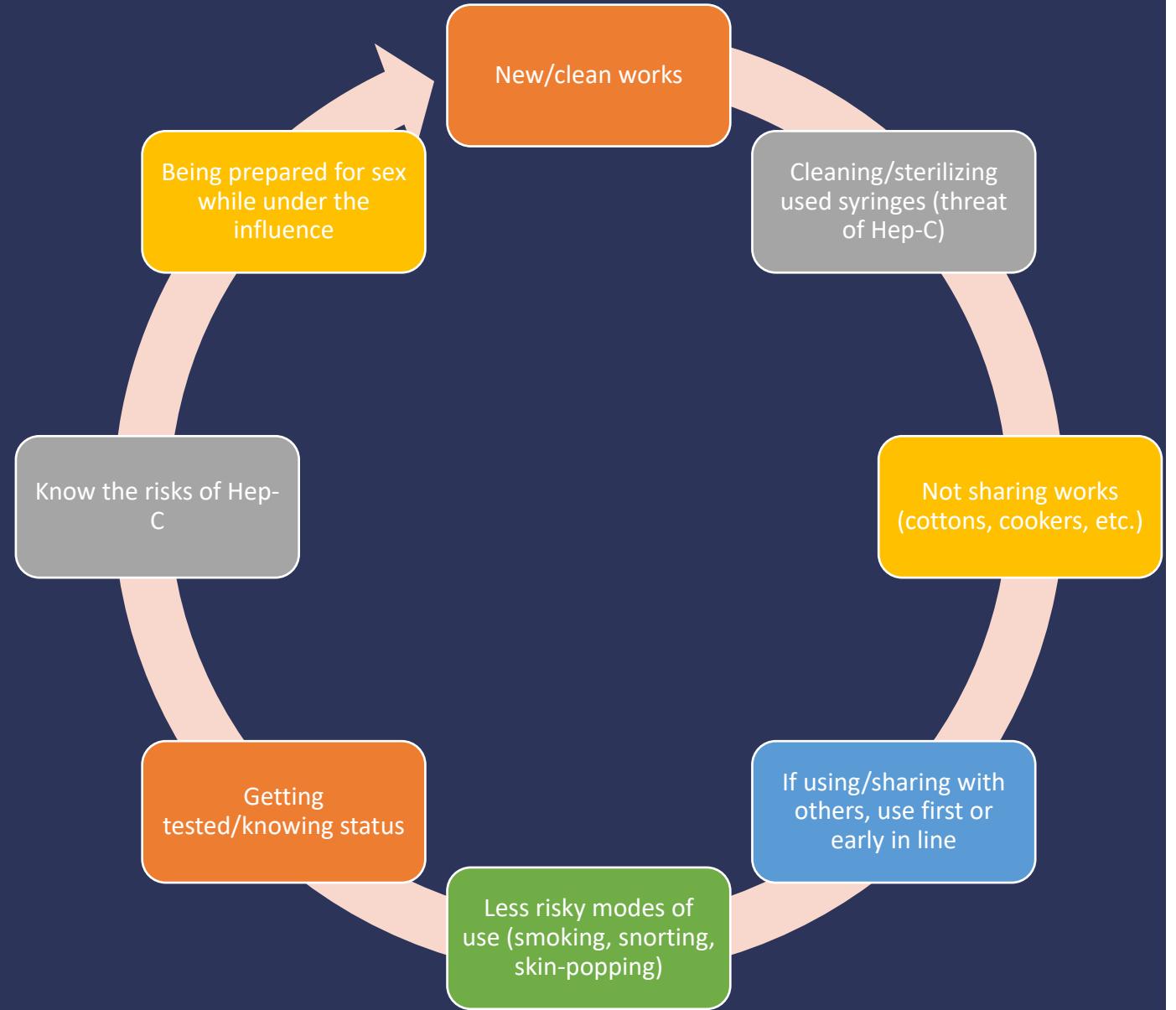
More Prevention Options

REDUCING HARM

Harm Reduction Strategies: Sexual Behaviors



Harm Reduction Strategies: Drug/Alcohol Use



CDC's Strategy for HIV Service Provision



Everyone at risk for HIV should be tested.

Those found to be HIV+ should be engaged in treatment.

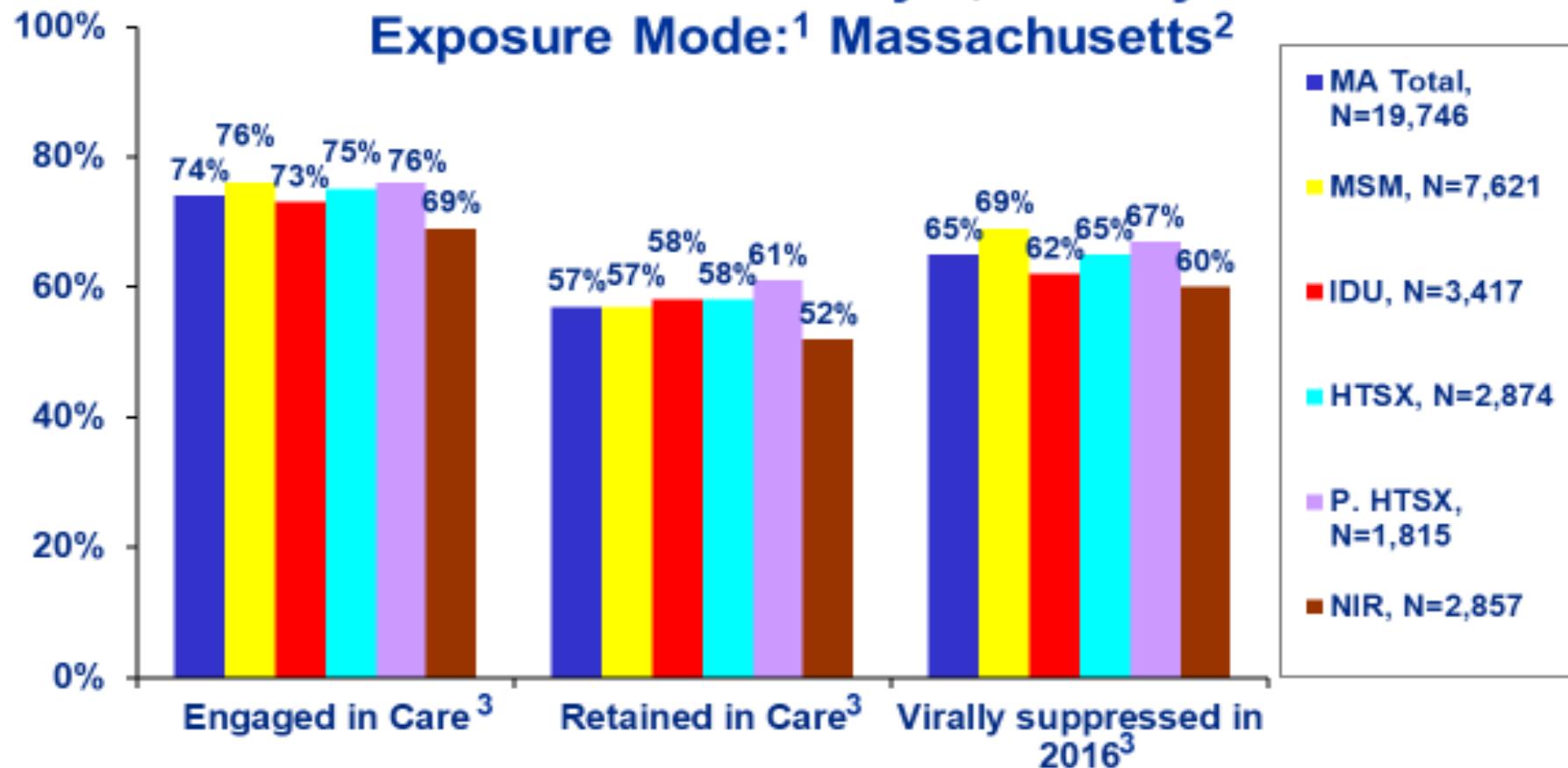
Those engaged in treatment should immediately explore options for Antiretroviral Medication.

People on medication should be supported and followed to achieve undetectable level of viral load.

People with undetectable viral load are highly unlikely to transmit the virus to others.

HIV Treatment Cascade in MA.

Figure 4. Stages of HIV Care Among Individuals Living with HIV Infection on January 1, 2017 by Selected Exposure Mode:¹ Massachusetts²



¹ MSM/IDU and Other exposure mode are not presented, MSM=Male-to-male sex, IDU=Injection drug use, HTSX=Heterosexual sex, P.=Presumed

² Includes individuals diagnosed through 2015 and living in MA as of 12/31/16, based on last known address, regardless of state of diagnosis; MSM=Male-to-male sex, IDU=Injection drug use, HTSX=Heterosexual sex, P.=Presumed, NIR=No identified risk

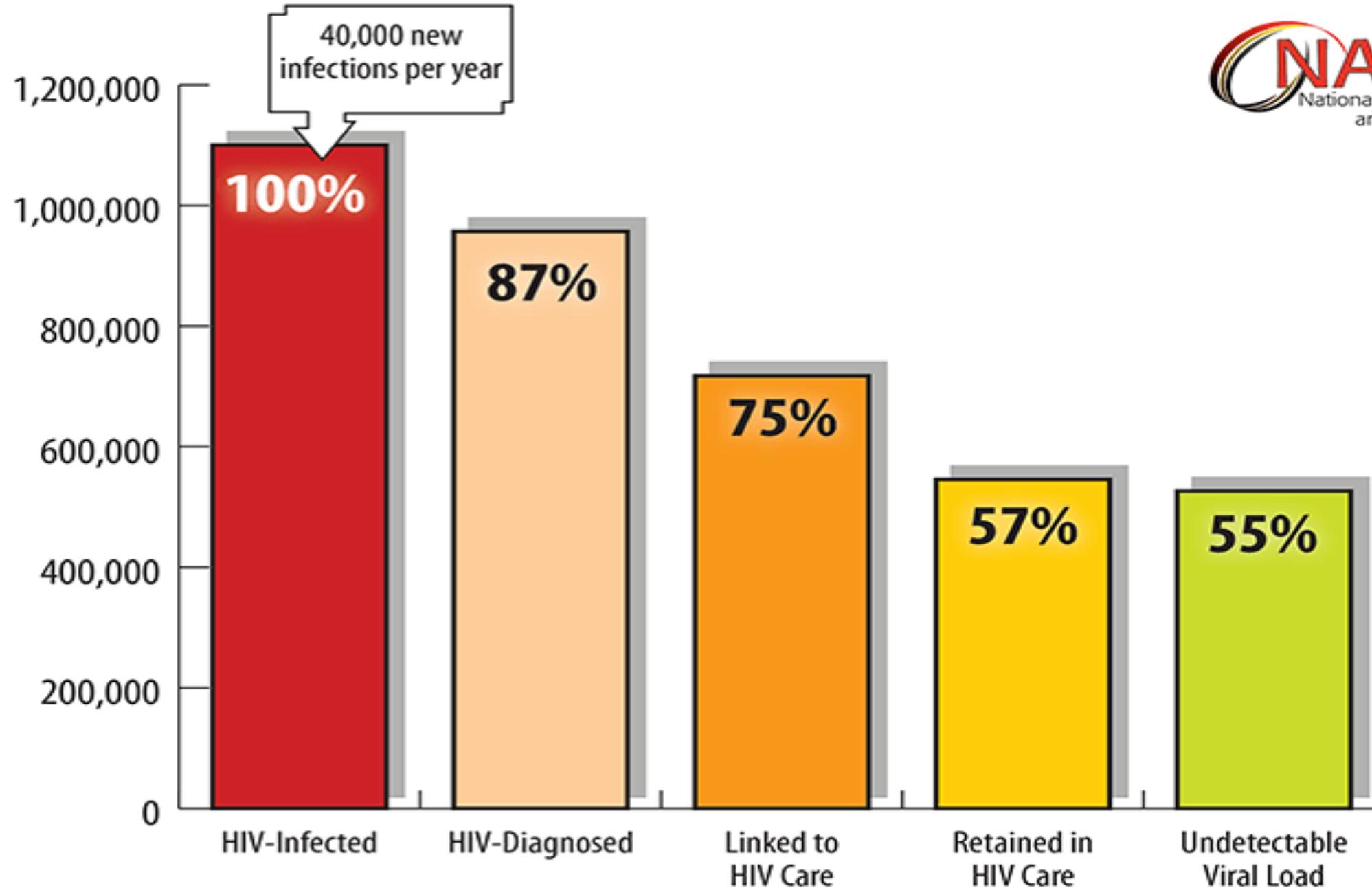
³ Lab received by Massachusetts Department of Public Health (MDPH)

Data Source: MDPH Bureau of Infectious Disease and Laboratory Sciences, cases reported through 1/1/18

The U.S. HIV Care Continuum¹



Number of Individuals



Screening and Testing for HIV

One in seven 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.

4th Generation Testing

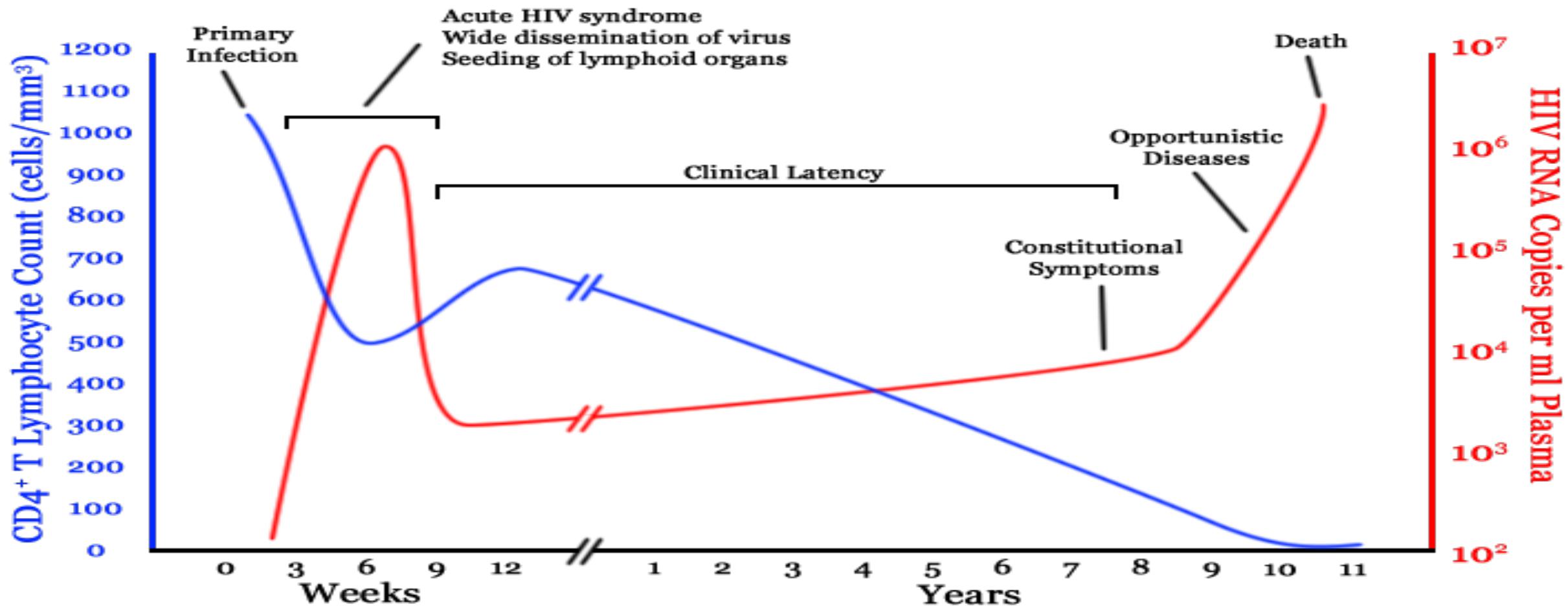
These are the recommended tests for routine use in the U.S. and U.K.

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 confirmation tests.

Infection Progression



Adapted from Pantaleo G, Graziosi C, Fauci AS.
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Co-Factors and Co-Infection

- 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 Hepatitis C infection in Massachusetts and the high number of people co-infected with both HIV and HCV, all HIV screenings conducted at state-funded sites, is also automatically tested for HCV and vice-versa



Supporting Clients Diagnosed with HIV

- **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.



Supporting Clients Diagnosed with HIV

- **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.



Thank You!



Community & Behavioral Health | Recovery | Social Change