HIV Basics for Health Educators and other Non-Clinical Providers

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HIV Webinar Series for Health Educators

April 28, 2021 11:00am-12:00pm

- Part I: HIV Basics for Non-Clinical Providers with Dr. Daniela DiMarco

May 5, 2021 11:00am-12:00pm

- Part II: HIV Prevention Strategies for Young People with Dr. Erica Bostick

Part I Objectives

1. Define HIV and AIDS
2. Describe ways in which HIV can be transmitted
3. Describe the epidemiology and risk factors for HIV in young people
4. List testing options for HIV
5. Understand the principle behind U=U

Note on Data Limitations

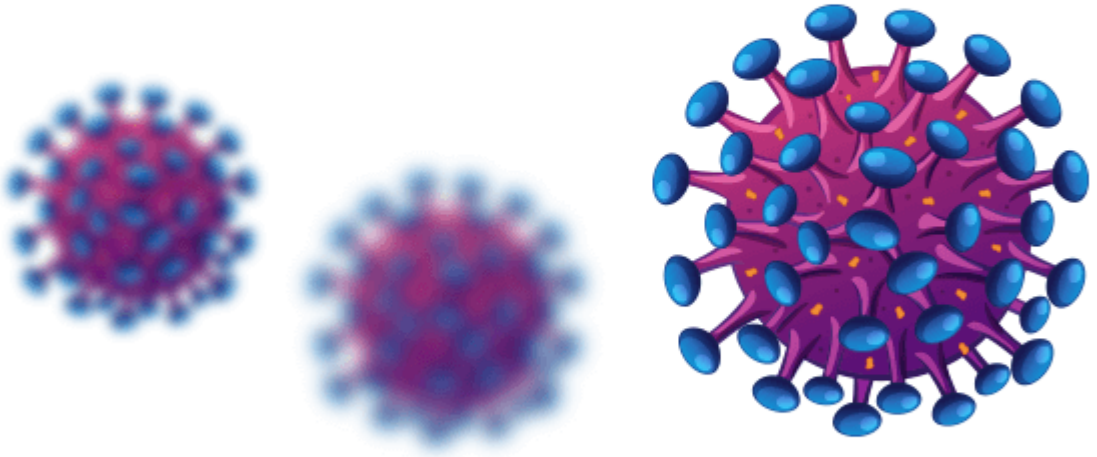
HIV/STI data and reporting has historically been based on sex assigned at birth

- In NYS, data is now being collected/reported with attention to gender with regard to HIV and STIs

Release of 2019 surveillance data from CDC and NYS has been delayed due to the pandemic

WHAT IS HIV?

Human Immunodeficiency Virus (HIV) is a virus that attacks cells that help the body fight infection.

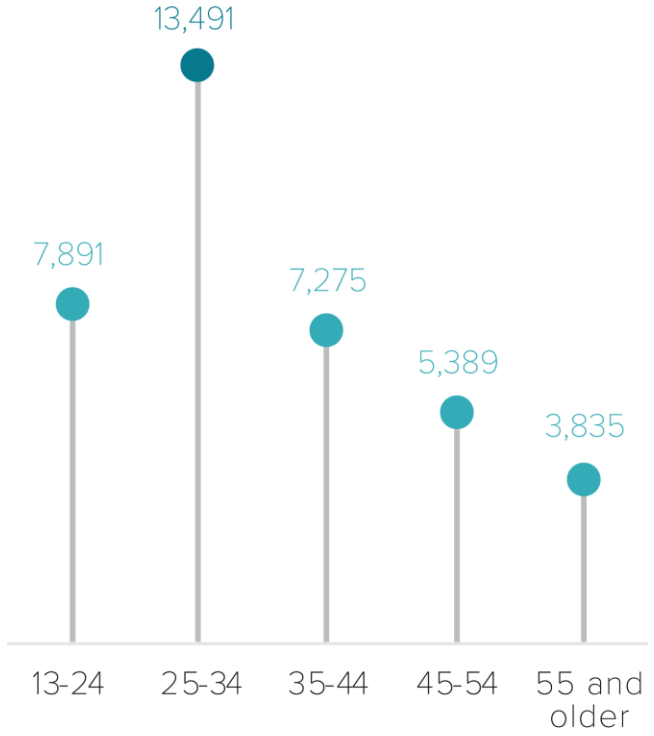


There's no cure, but it is **treatable** with medicine.

HIV.gov

New HIV Diagnoses in the US and Dependent Areas by Age, 2018

The number of new HIV diagnoses was highest among people aged 25 to 34.



Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2018 (updated). *HIV Surveillance Report* 2020;31.

Definitions

HIV – Human Immunodeficiency Virus

AIDS – Acquired Immunodeficiency Syndrome

OI – Opportunistic infection

Viral load – Number of copies of a virus detectable in the blood stream

CD4 T-Cell – A subtype of white blood cell impacted by HIV infection

DNA – Deoxyribonucleic acid; Double strand of genetic code that makes up the body's chromosomes or "genes"

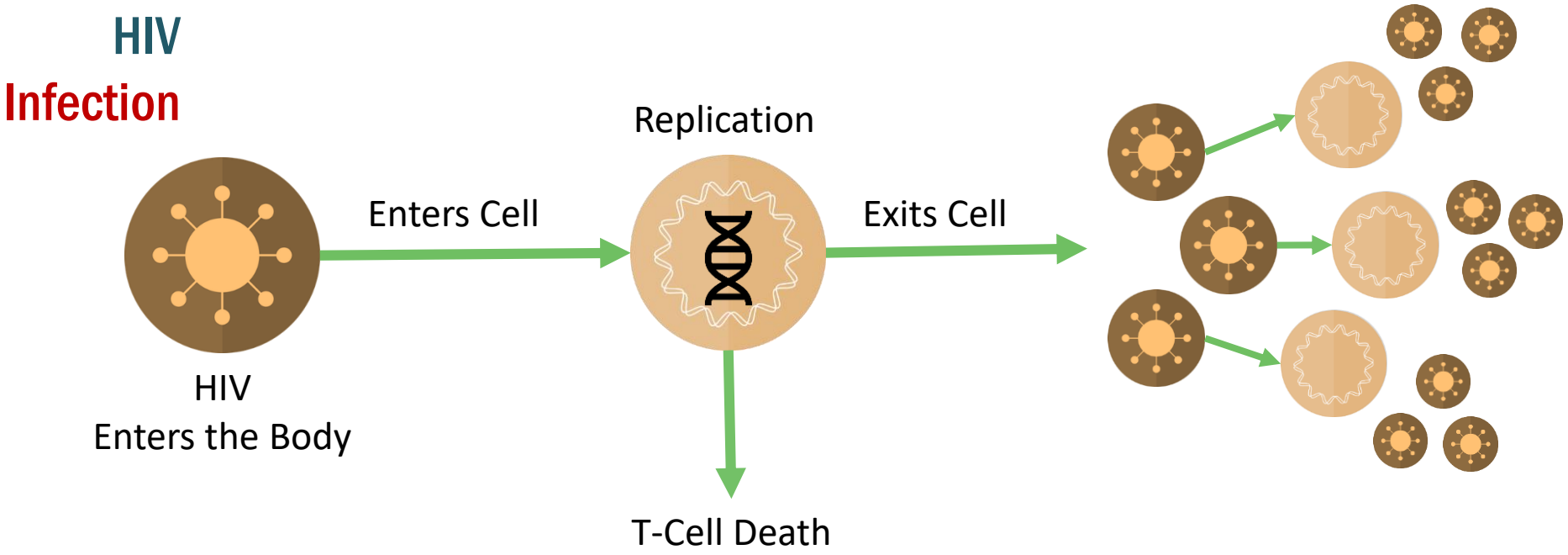
RNA – Ribonucleic acid; Single strand of genetic code made by DNA

PrEP – Medication used to prevent HIV before and during potential exposure

PEP – Medication used to prevent HIV after a potential exposure

What exactly is HIV?

- Single stranded RNA retrovirus (copies itself)
- Attacks the immune system lowering CD4 T-cells that are important for fighting off infections



How does this all work?

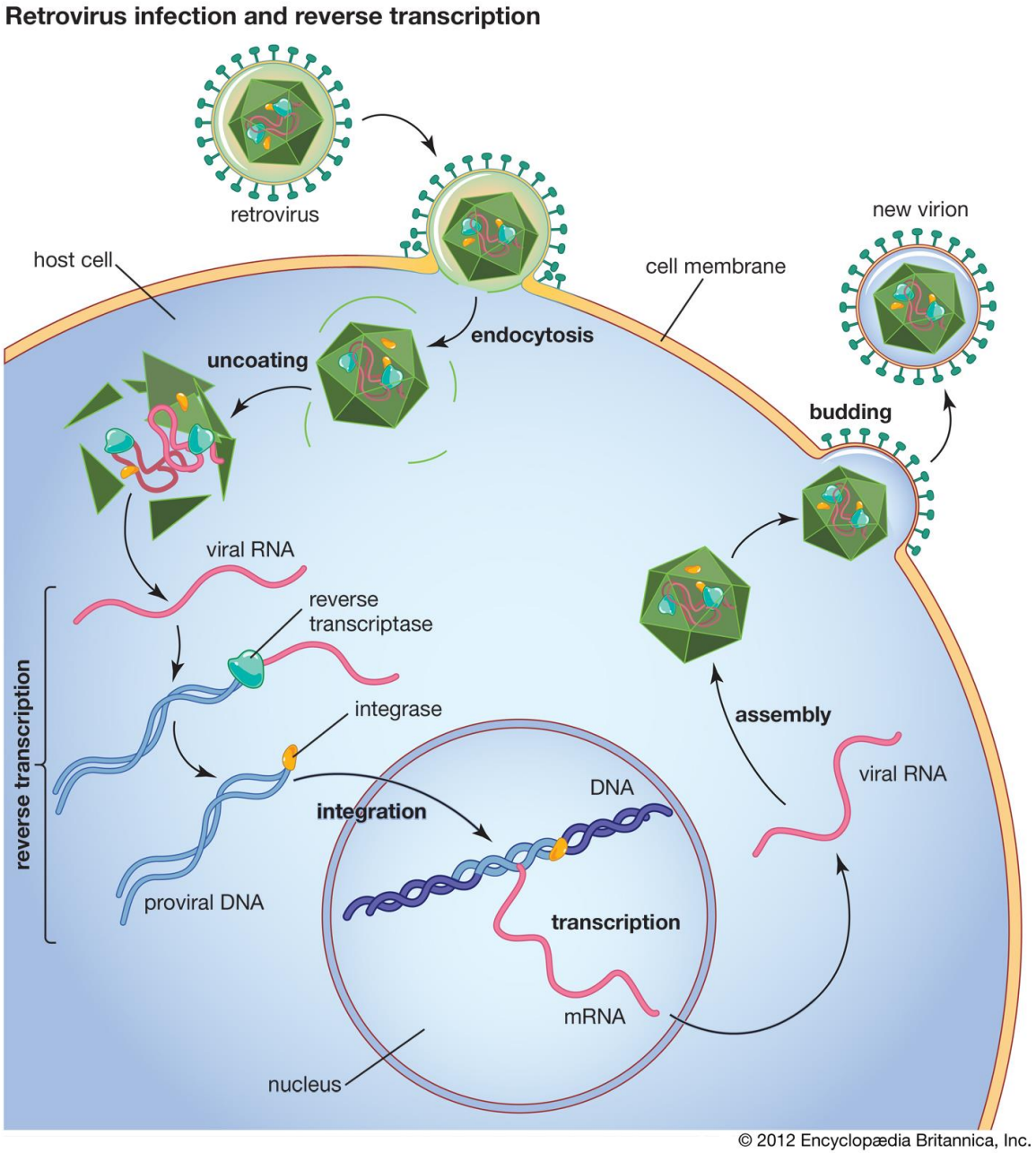


Image Source: Encyclopaedia Britannica. Accessed 2021. https://www.britannica.com/science/reverse-transcriptase#/media/1/500460/124682

Where did HIV come from?

HIV Origins

- Central African chimpanzees with SIV
- Chimps were hunted for food by humans, who came in contact with their blood and tissues
- Likely present in humans in Africa dating back to the late 1800s
- Since that time, HIV spread across Africa and the rest of the world
- Present in the US since at least the 1970s

Image Source: CDC.gov

HIV vs. AIDS

HIV refers to the infection itself

AIDS refers to advanced HIV infection when the CD4 count <200; this usually takes several years

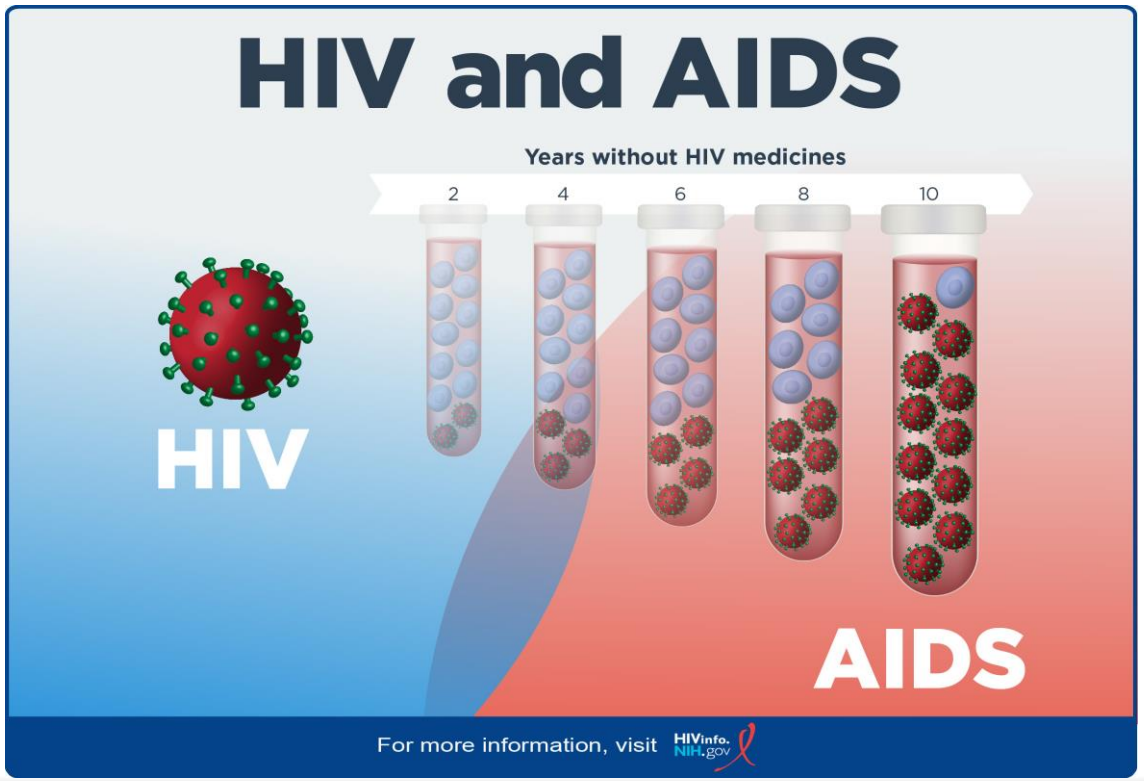
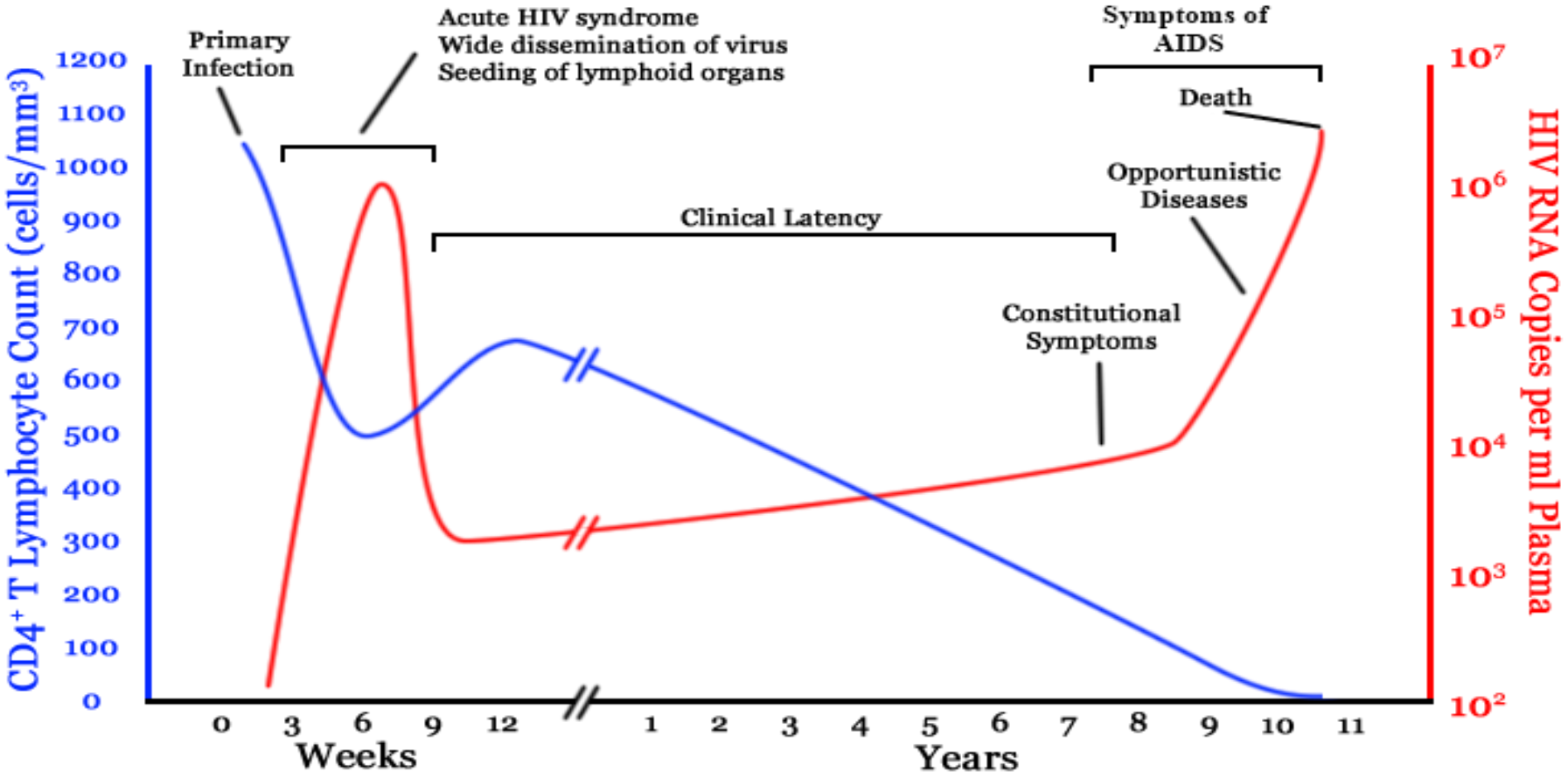


Image Source:
hivinfo.nih.gov

HIV Time Course



Based on Figure 1 in Pantaleo, G *et al.* (February 1993). "New concepts in the immunopathogenesis of human immunodeficiency virus infection". *New England Journal of Medicine* **328** (5): 327-335. PMID 8093551.

HIV vs. AIDS

Why the distinction?

- People living with AIDS are at risk for opportunistic infections (OIs) due to the destruction of CD4 white blood cells that fight off infections
  - Fungal, bacterial, parasitic
  - OIs are considered an "AIDS-defining illness"
  - Some OIs can be prevented with medications when the CD4 count is low
  - Often, the CD4 count improves with effective treatment of HIV
- Risk of other infections that are not OIs also increased

Symptoms of Acute HIV

Fever

Rash

Muscle aches

Oral ulcers

Sore throat

Swollen lymph nodes

Drenching sweats

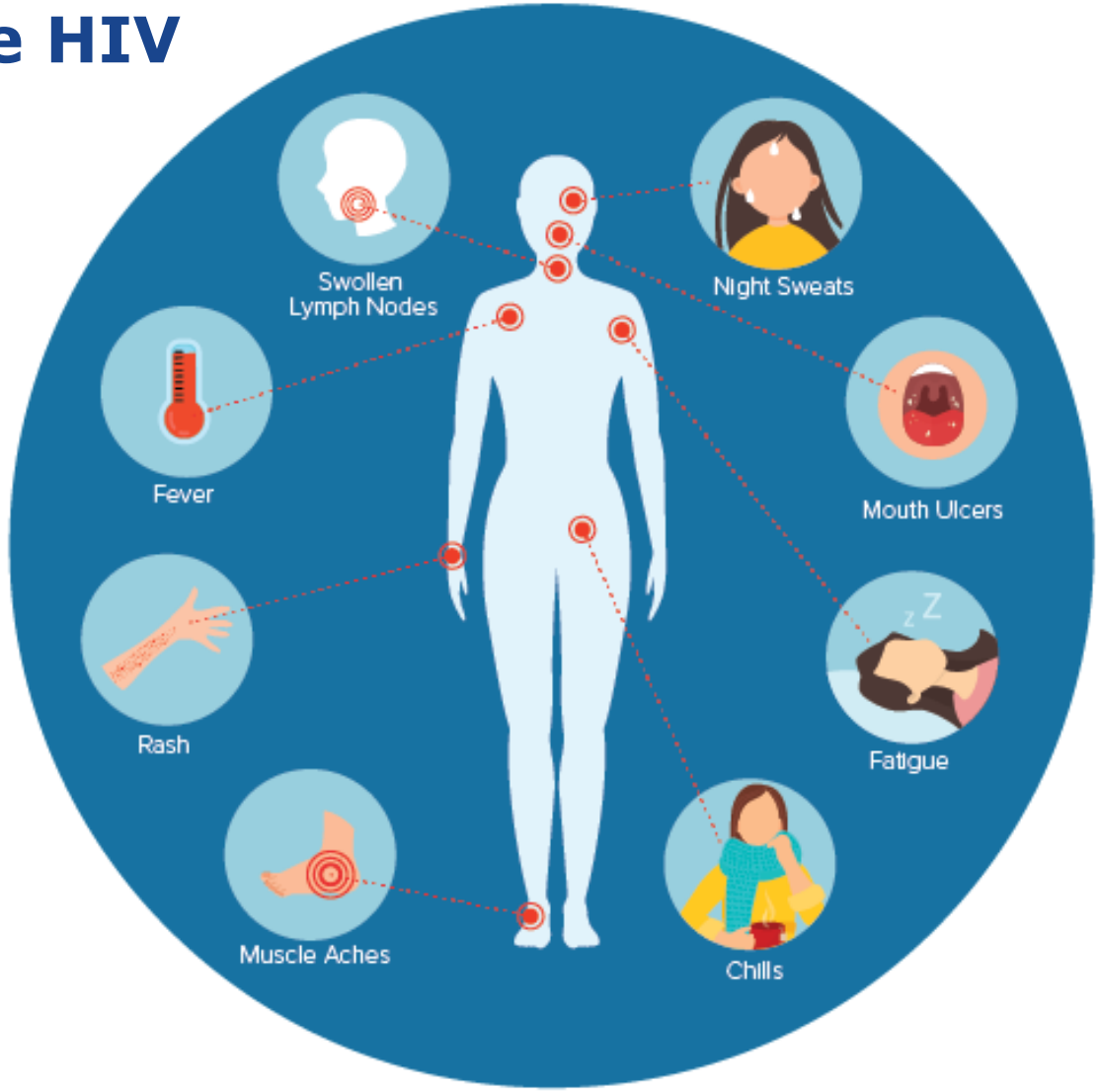


Image Source: CDC.gov

Chronic HIV Infection (without AIDS)

No symptoms, though HIV is still active

- Can be transmitted if viral load not suppressed
- Can lower CD4 count over time to cause AIDS

Chronic health issues can develop later in life similar to individuals without HIV

- Cardiovascular disease
- Diabetes
- COPD
- Osteoporosis
- Kidney disease

Progression to AIDS

Weight loss

Rash, wounds

Encephalopathy

Frequent or bacterial infections

Invasive viral infections (CMV, HSV)

Oral thrush

Some other AIDS Defining Illnesses:

- Certain cancers (lymphoma, cervical, Kaposi sarcoma
- PML
- CNS Toxoplasmosis
- Pneumocystis pneumonia
- Disseminated Mycobacterium avium complex
- CMV retinitis or colitis
- Disseminated histoplasmosis

HIV CAN BE TRANSMITTED BY

Sexual Contact

Sharing Needles to Inject Drugs

Mother to Baby During Pregnancy, Birth, or Breastfeeding

HIV IS NOT TRANSMITTED BY

Air or Water

Saliva, Sweat, Tears, or Closed-Mouth Kissing

Insects or Pets

Sharing Toilets, Food, or Drinks

Body Fluids and HIV Transmission

Associated:

- Blood
- Semen, vaginal/cervical secretions
- Breast milk
- Internal body fluids/tissues:
  - Spinal fluid
  - Heart, Lungs, abdominal organs
  - Joints
  - Amniotic fluid

No Association:

- Tears
- Nasal secretions
- Saliva
- Sputum
- Sweat
- Urine
- Vomit

Estimated Per-Act Probability of HIV Transmission by Exposure

Exposure/Activity		Risk of Transmission (per 10,000 Exposures)
Sex	Receptive Anal	138
	Insertive Anal	11
	Receptive Vaginal	8
	Insertive Vaginal	4
	Receptive Oral	Low
	Insertive Oral	Low
Parenteral	Blood Transfusion	9250
	Needle Sharing	63
	Needle Stick	23
Other	Biting	Negligible
	Spitting	Negligible
	Sharing Sex Toys	Negligible

Table Adapted from CDC.gov

Patel P, Borkowf CB, Brooks JT. Et al. Estimating per-act HIV transmission risk: a systematic review. AIDS. 2014. doi: 10.1097/QAD.0000000000000298.
Pretty LA, Anderson GS, Sweet DJ. Human bites and the risk of human immunodeficiency virus transmission. Am J Forensic Med Pathol 1999;20(3):232-239.

Additional Factors that Increase HIV Transmission Risk

Activities:

- Condomless sex
- Multiple partners
- Anonymous partners
- Having sex while under the influence of drugs or alcohol

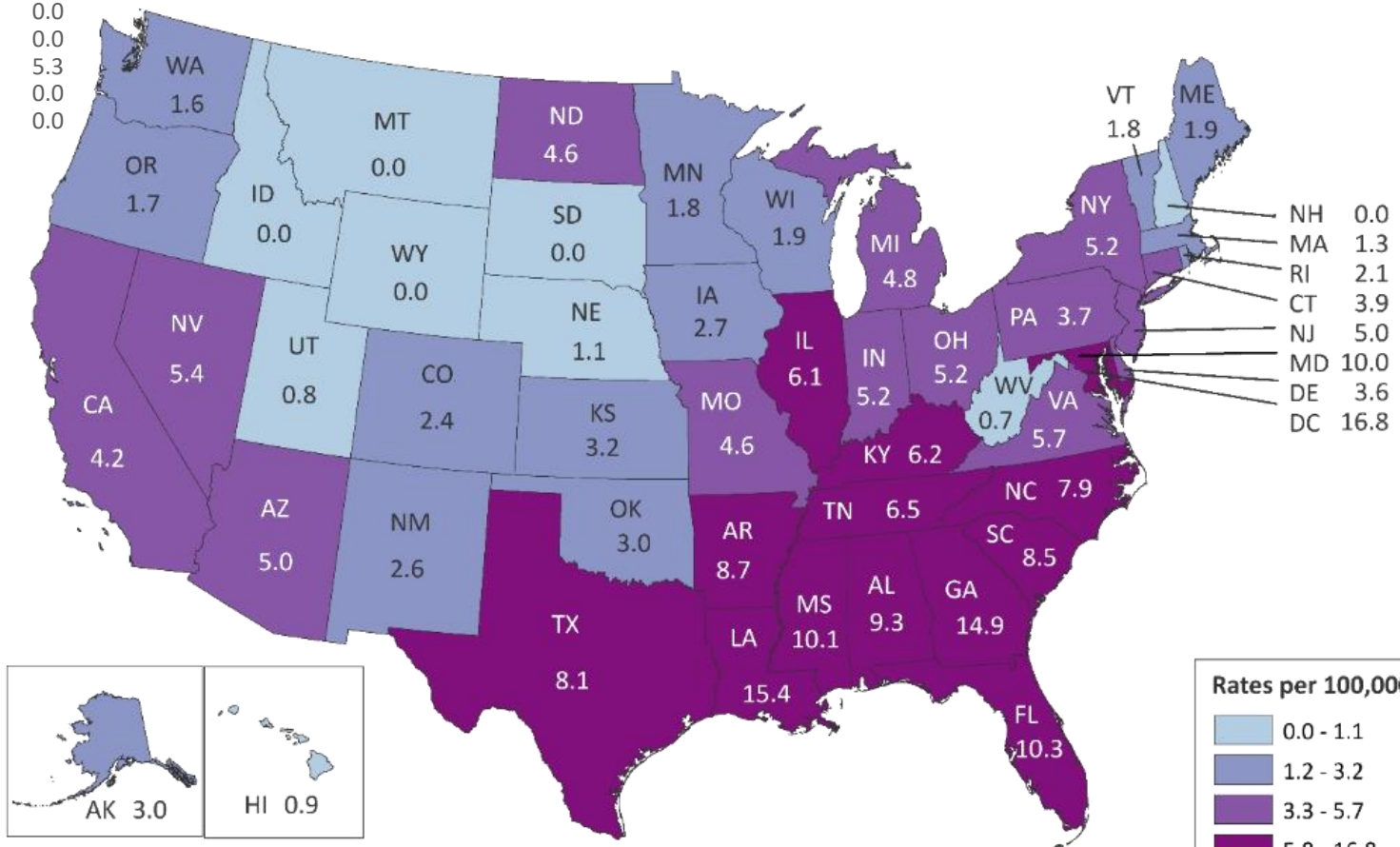
Sexually transmitted infections (STIs) including:

- Syphilis
- Gonorrhea
- Chlamydia
- Herpes
- Many others…

Rates of Diagnoses of HIV Infection among Adolescents Aged 13–19 Years 2018—United States and 6 Dependent Areas

N = 1,722 **Total Rate = 5.8**

American Samoa	0.0
Guam	0.0
Northern Mariana Islands	0.0
Puerto Rico	5.3
Republic of Palau	0.0
U.S. Virgin Islands	0.0

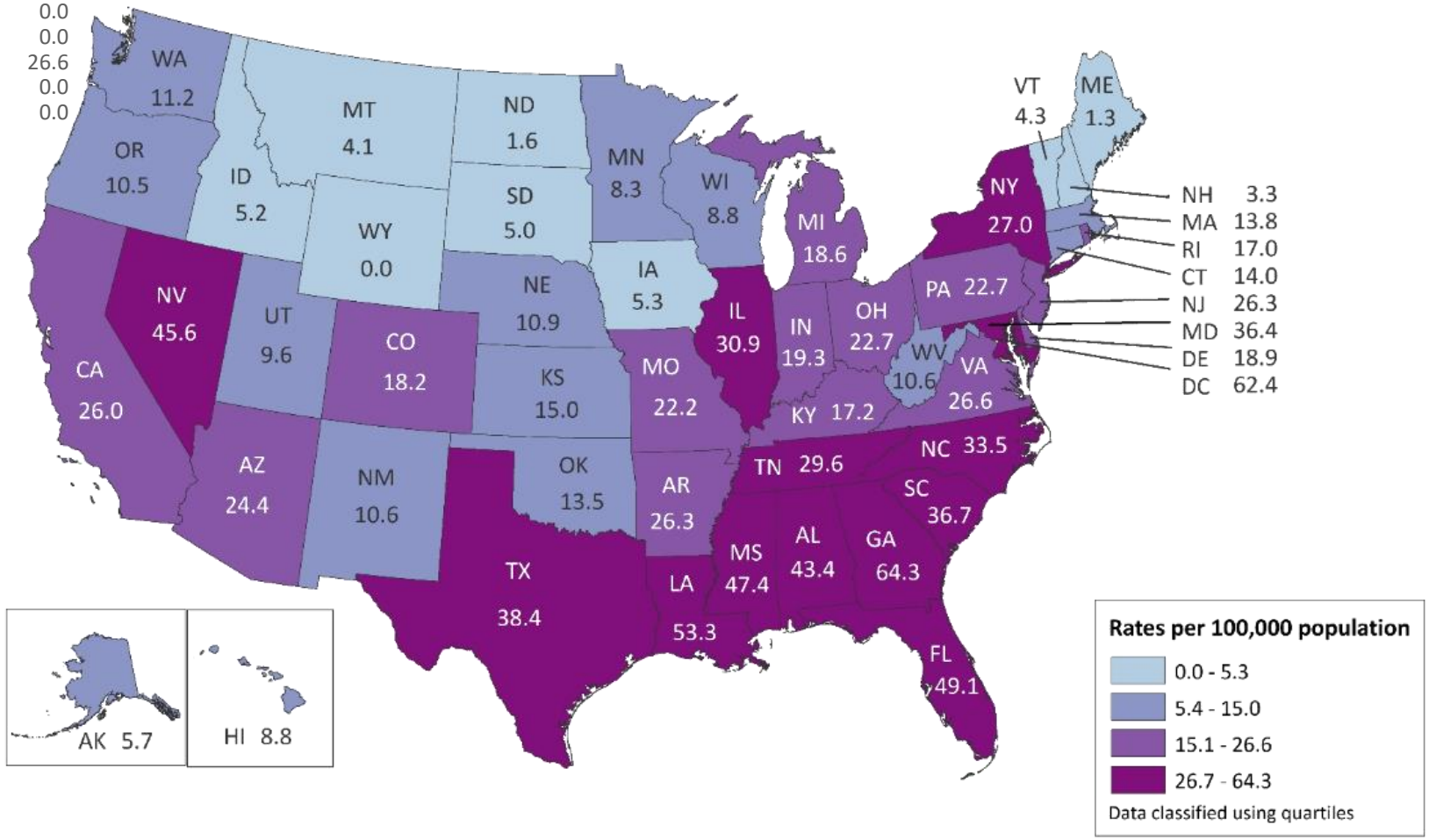


Note. Data for the year 2018 are considered preliminary and based on 6 months reporting delay.

Rates of Diagnoses of HIV Infection among Young Adults Aged 20–24 Years 2018—United States and 6 Dependent Areas

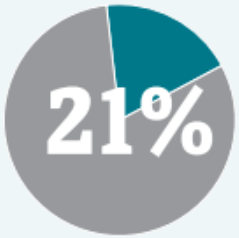
N = 6,085 **Total Rate = 27.5**

American Samoa	0.0
Guam	0.0
Northern Mariana Islands	0.0
Puerto Rico	26.6
Republic of Palau	0.0
U.S. Virgin Islands	0.0



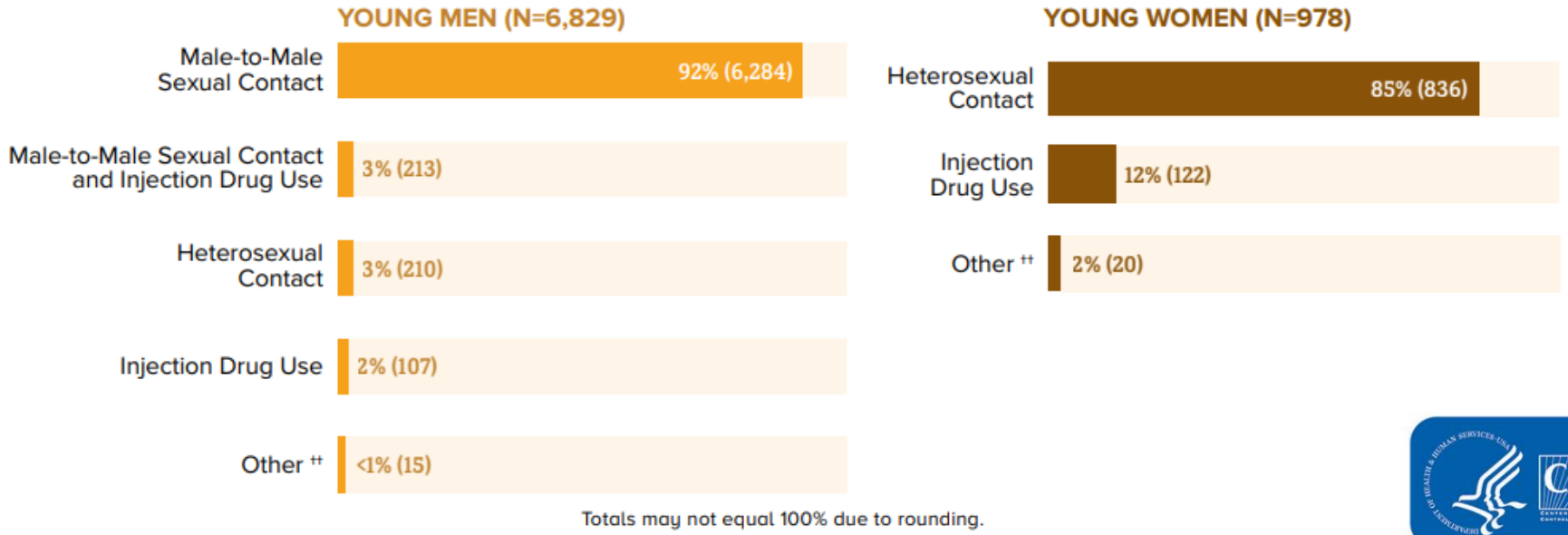
Note. Data for the year 2018 are considered preliminary and based on 6 months reporting delay.

HIV and Youth



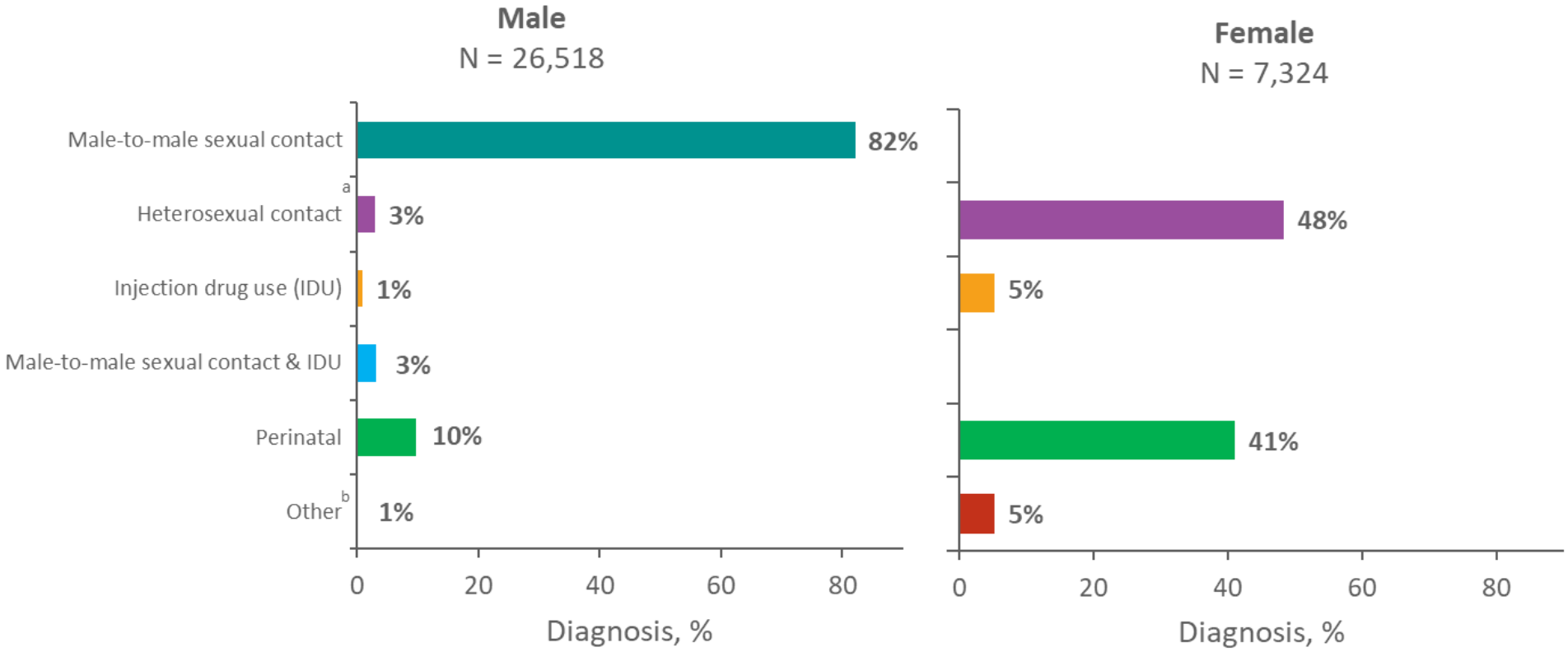
Of the **37,832 NEW HIV DIAGNOSES** in the US and dependent areas* in 2018, 21% were among youth. †

Most new HIV diagnoses among youth were among young gay and bisexual men. ‡ **



Totals may not equal 100% due to rounding.

Adolescents and Young Adults Aged 13–24 Years Living with Diagnosed HIV Infection by Sex and Transmission Category, Year-end 2017—United States and 6 Dependent Areas

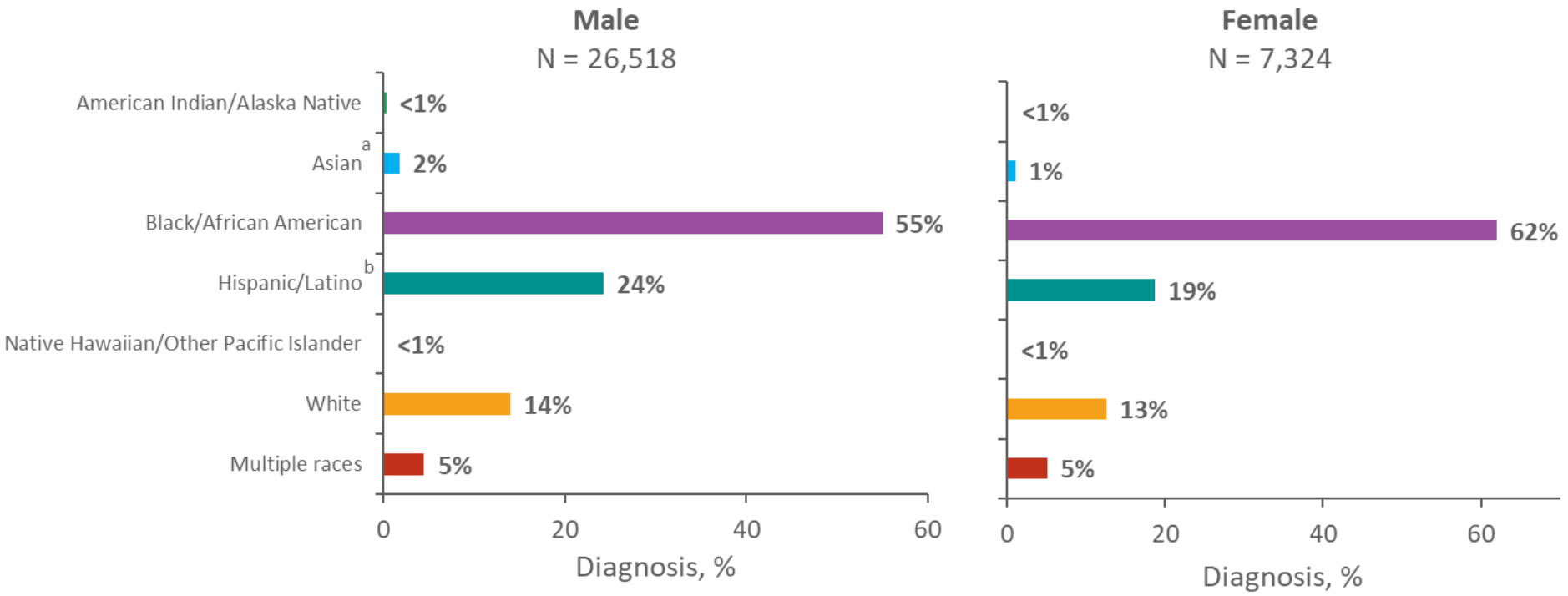


Note. Data have been statistically adjusted to account for missing transmission category. "Other" transmission category not displayed as it comprises 1% or less of cases.

[a] Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

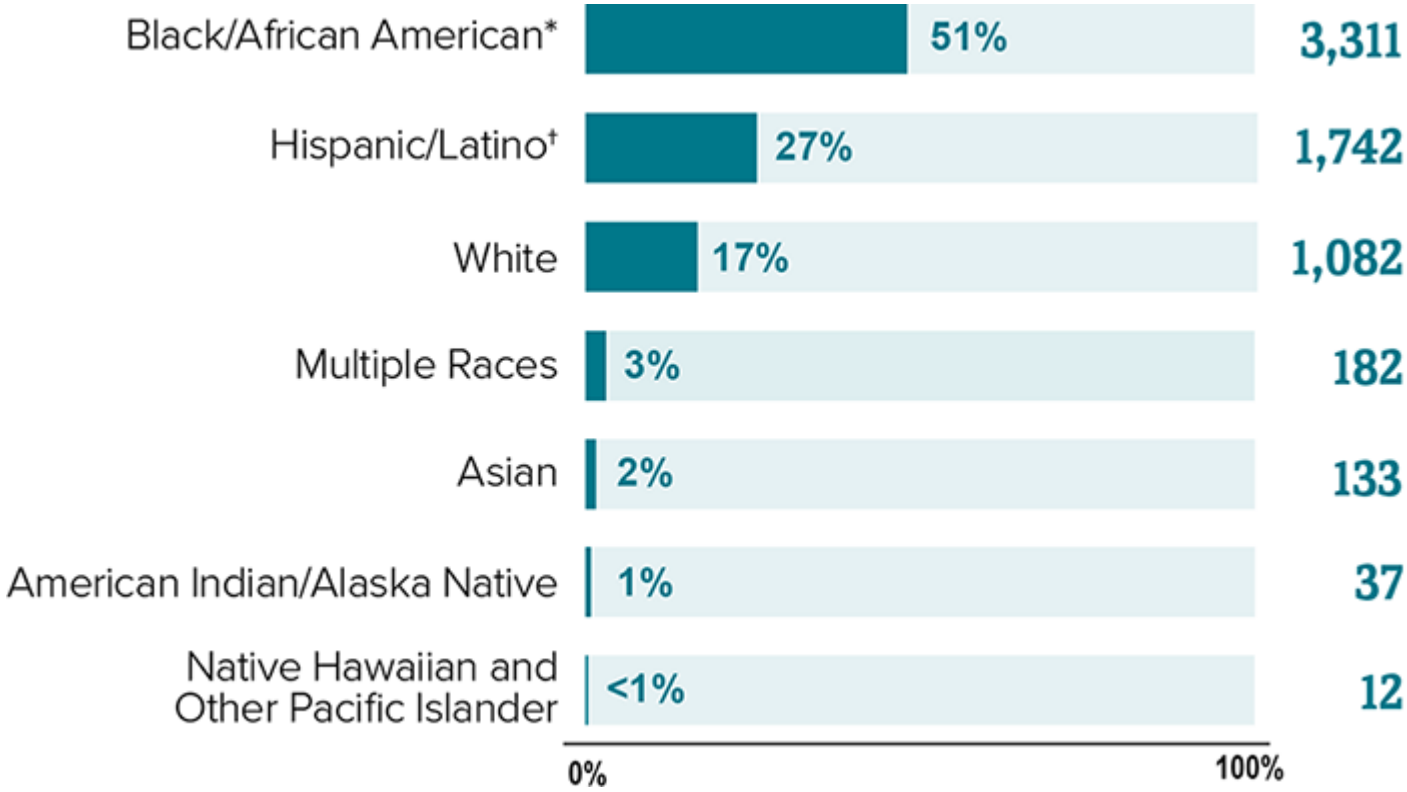
[b] Includes hemophilia, blood transfusion, and risk factor not reported or not identified.

Adolescents and Young Adults Aged 13–24 Years Living with Diagnosed HIV Infection, by Sex and Race/Ethnicity, Year-end 2017—United States and 6 Dependent Areas



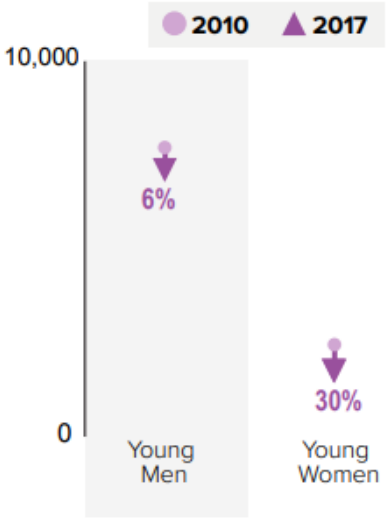
[a] Includes Asian/Pacific Islander legacy cases.
[b] Hispanics/Latinos can be of any race.

New HIV Diagnoses Among Young Gay, Bisexual, and Other Men Who Have Sex With Men by Race and Ethnicity in the US and Dependent Areas, 2018 [d,e]

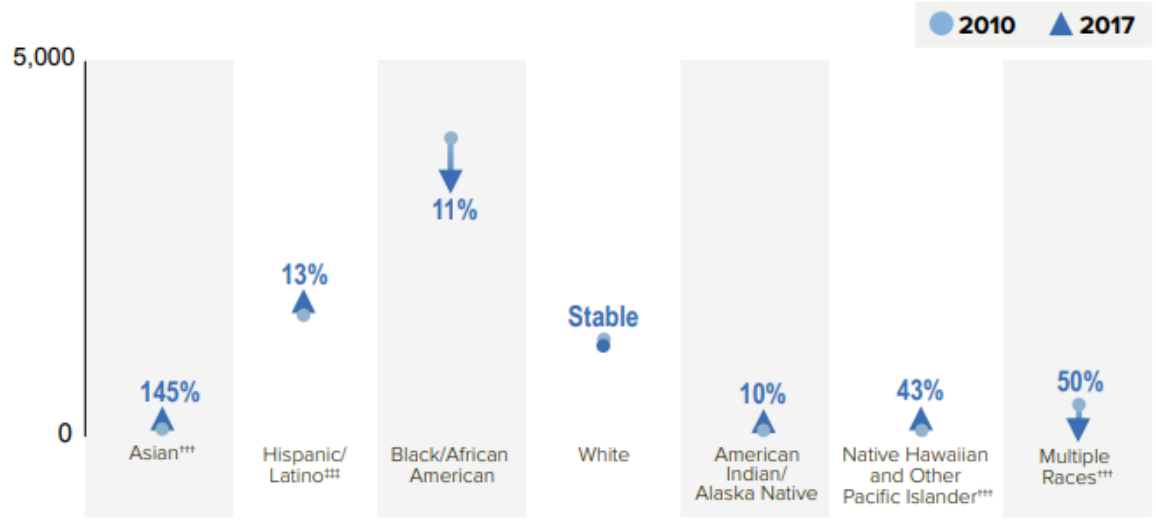


HIV diagnoses declined 10% among youth overall from 2010 to 2017.‡‡ Although trends varied for different groups of youth, HIV diagnoses declined for groups most affected by HIV, including young black/African American gay and bisexual men.***

Trends by Sex



Trends for Young Gay and Bisexual Men by Race and Ethnicity



* American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, the Republic of Palau, and the US Virgin Islands.
† Persons aged 13 to 24 are referred to as *youth* or *young* in this fact sheet.
‡ This fact sheet uses the term *gay and bisexual men* to represent gay, bisexual, and other men who have sex with men.
** Includes infections attributed to male-to-male sexual contact *and* injection drug use (men who reported both risk factors).
†† Includes hemophilia, blood transfusion, perinatal exposure, and risk factors not reported or not identified.
‡‡ In 50 states and the District of Columbia.
*** *Black* refers to people having origins in any of the black racial groups of Africa. *African American* is a term often used for Americans of African descent with ancestry in North America.
††† Changes in subpopulations with fewer HIV diagnoses can lead to a large percentage increase or decrease.
‡‡‡ Hispanics/Latinos can be of any race.

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

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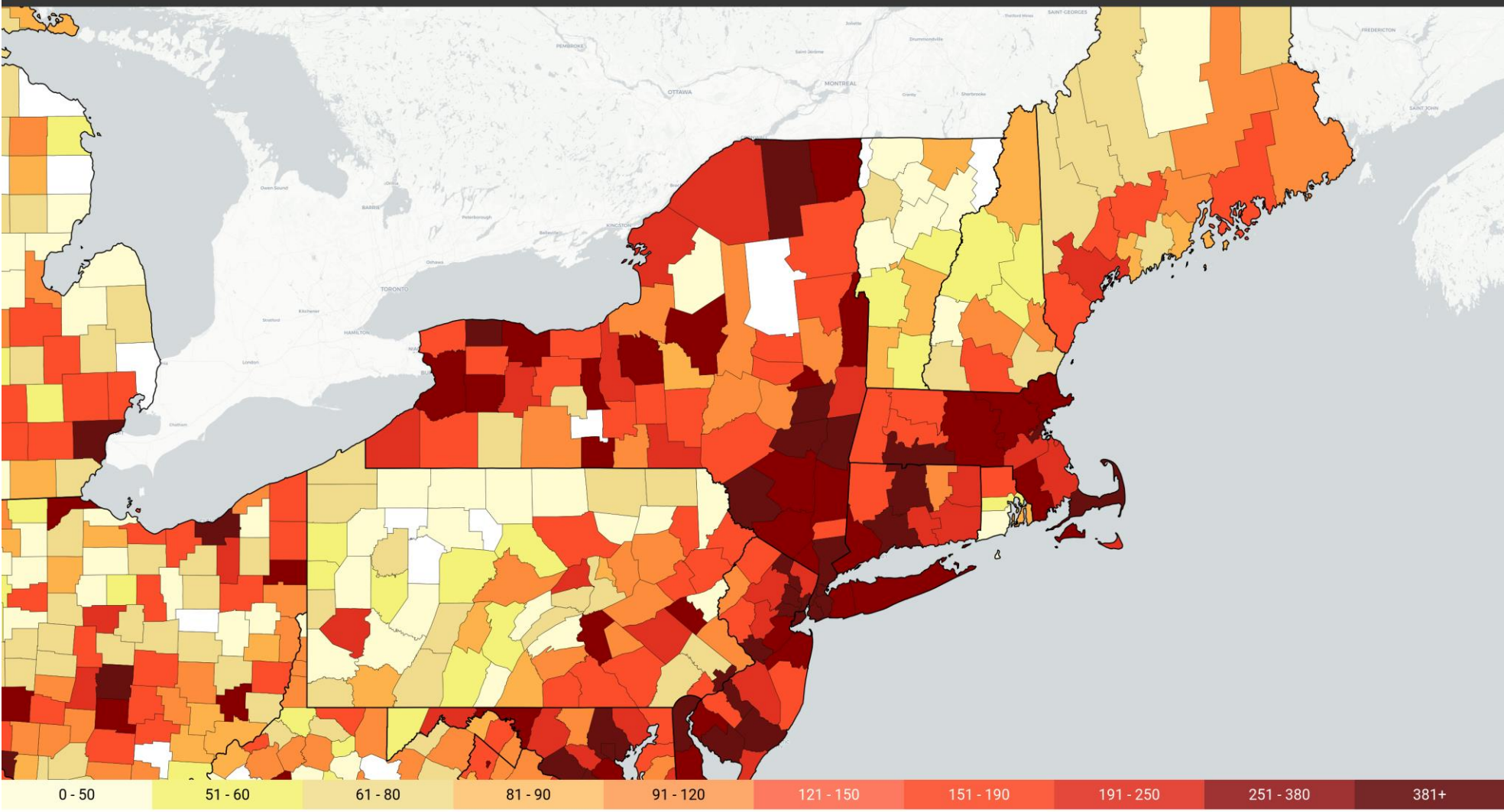
Rates of Persons Living with HIV, 2018



https://map.aidsvu.org/map

*DATA NOT SHOWN

**DATA NOT RELASED TO AIDSVU

* Data not shown to protect privacy because of a small number of cases and/or a small population.

** State health department, per its HIV data re-release agreement with CDC, requested not to release data to AIDSVu. See Data Methods for more information.

NOTE: There are no country-level maps for Alaska. District of Columbia, and Puerto Rico because there are no countries in these states.

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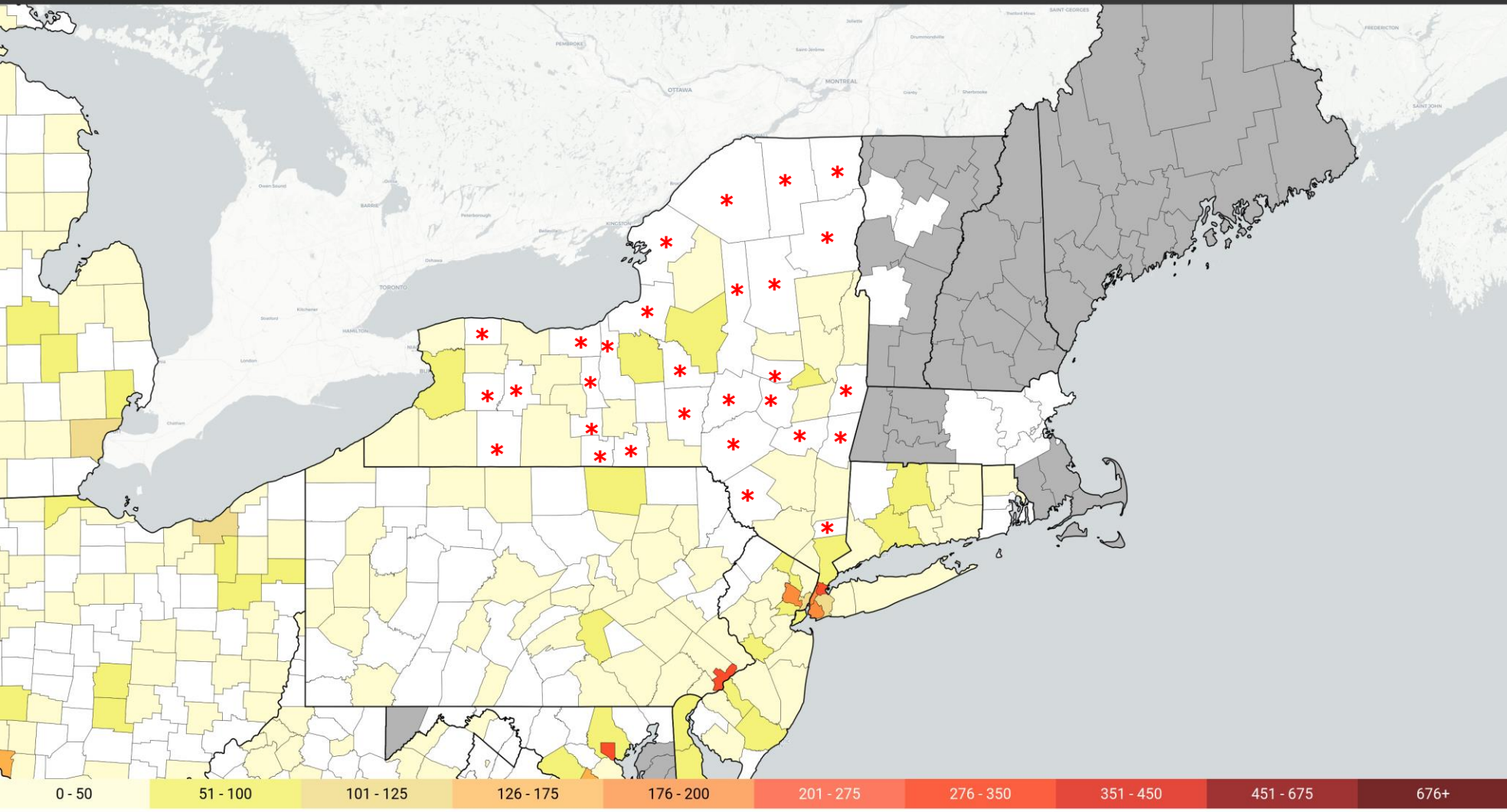
Rates of Persons, aged 13 to 24, Living with HIV, 2018



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Let's Focus on New Diagnoses NYS

New HIV Diagnoses

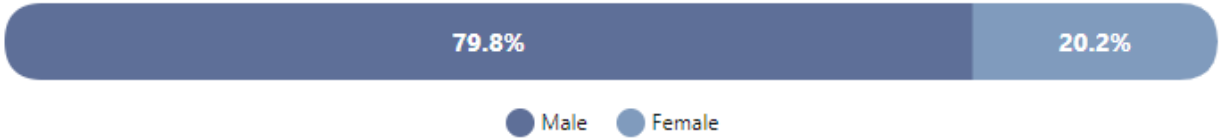
Number of new HIV diagnoses, 2018

2,456

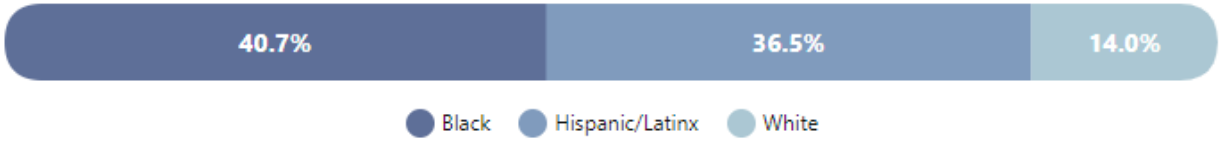
Rate of new HIV diagnoses per 100,000 population, 2018

15

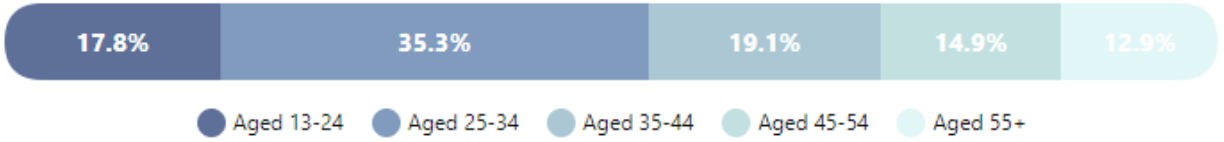
Percent of people newly diagnosed with HIV, by Sex, 2018



Percent of people newly diagnosed with HIV, by Race/Ethnicity, 2018



Percent of people newly diagnosed with HIV, by Age, 2018



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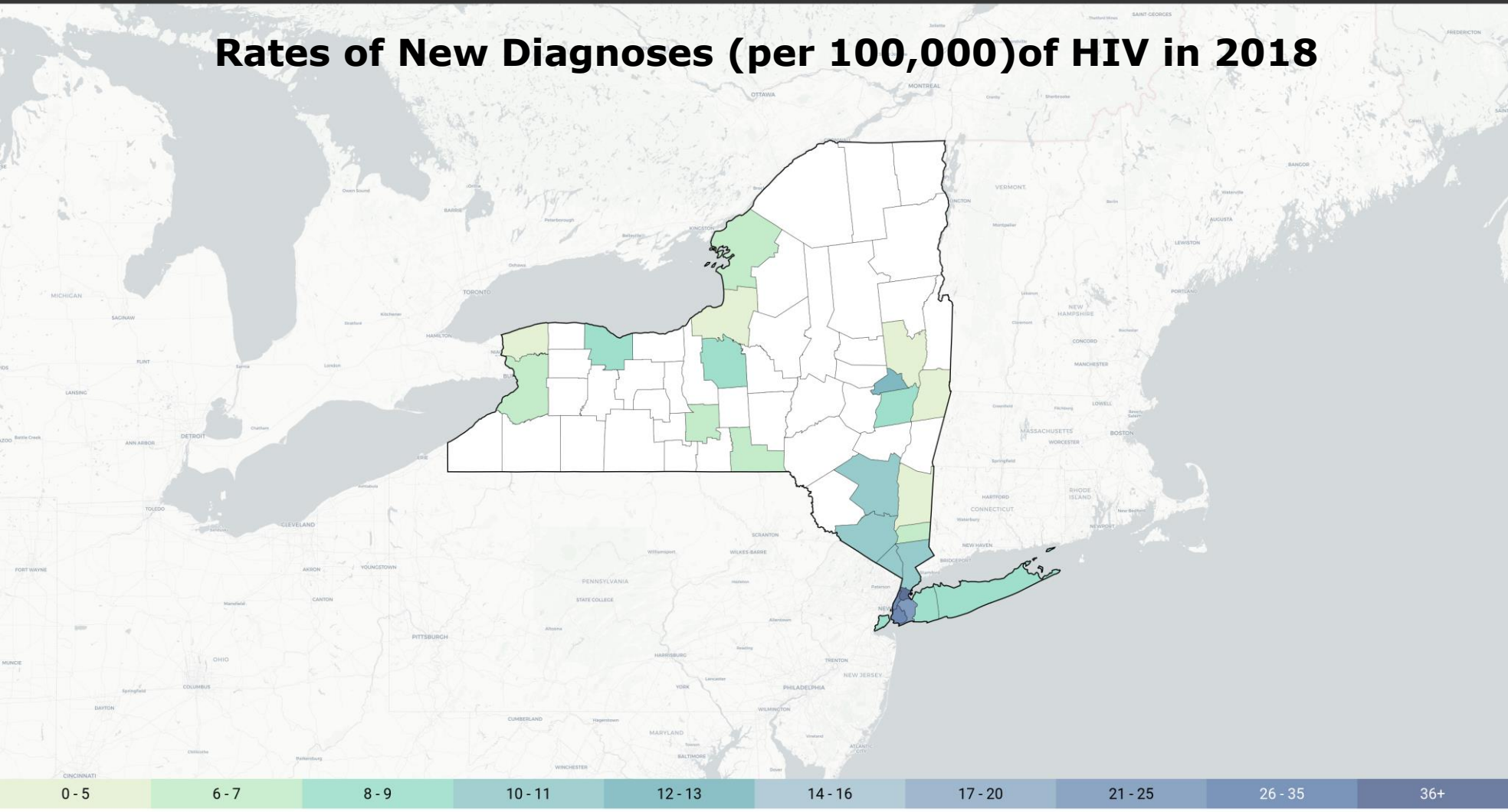
Rates of Persons Newly Diagnosed with HIV, 2018

Rates of New Diagnoses (per 100,000)of HIV in 2018



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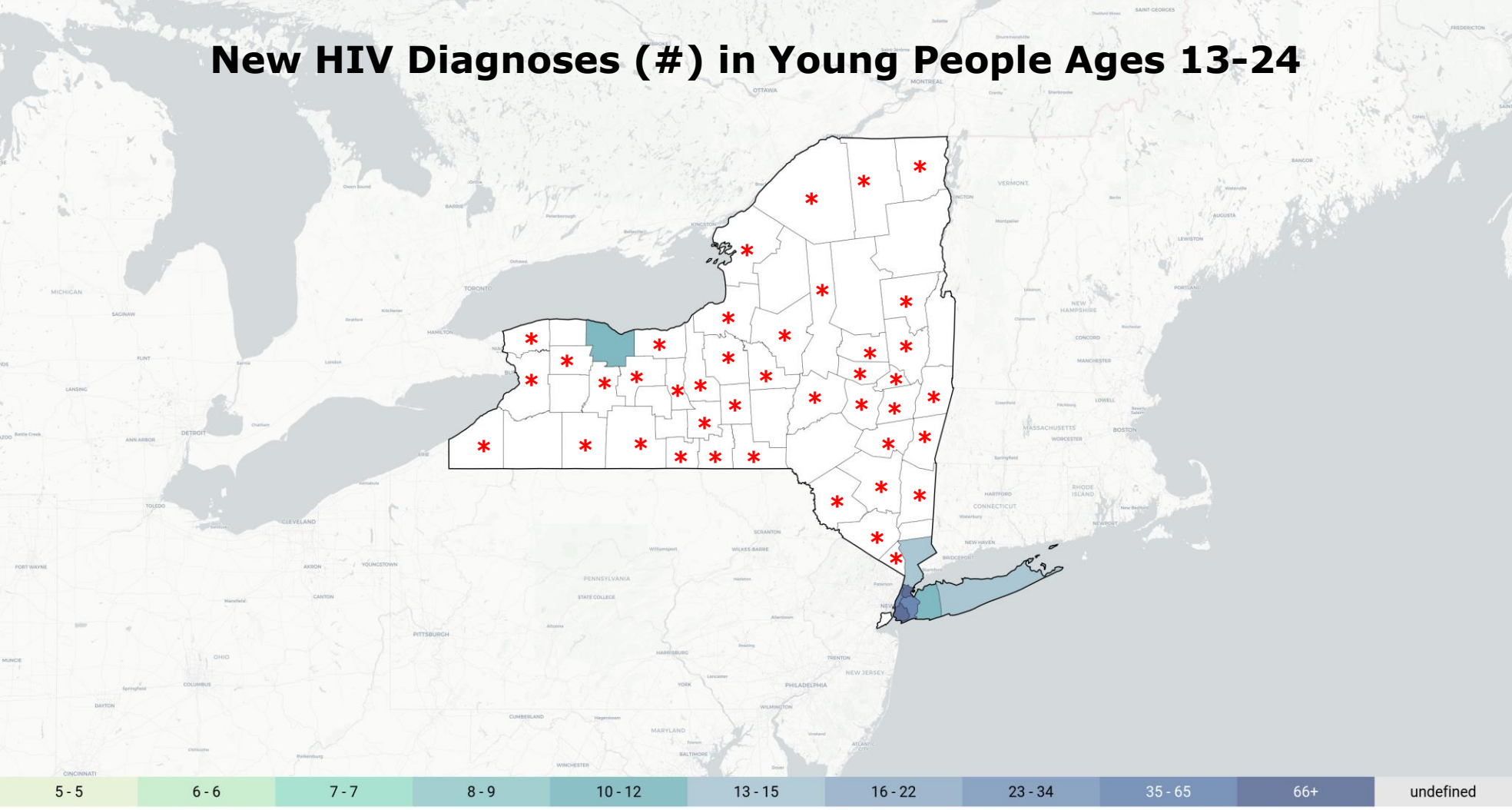
Number of Persons, aged 13 to 24, Newly Diagnosed with HIV, 2018

New HIV Diagnoses (#) in Young People Ages 13-24



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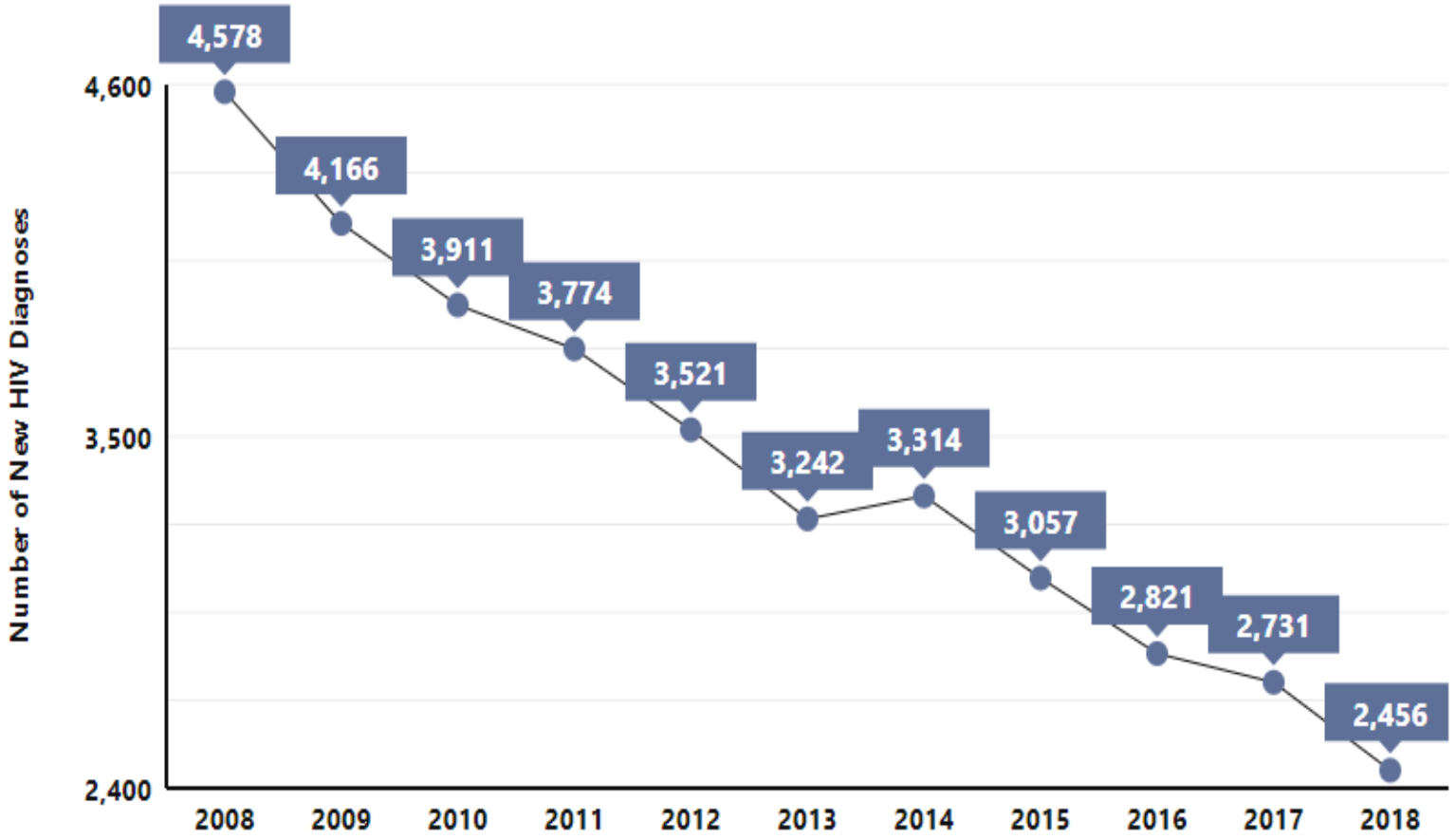
Number of New HIV Diagnoses, 2008-2018



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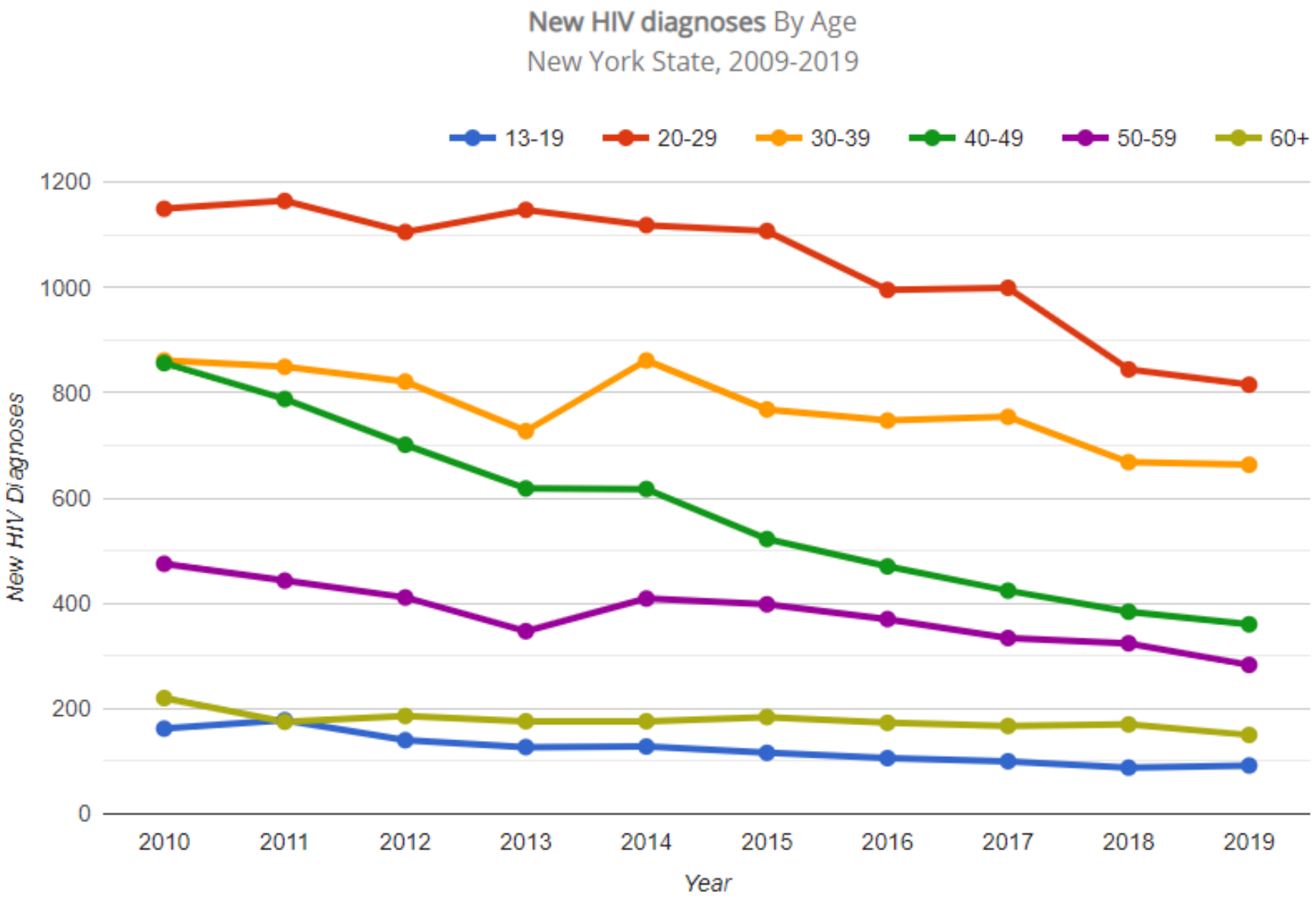


Source: NYS ETE Metrics. https://etedashboardny.org

New Diagnoses of HIV NYS including NYC, 2019 Highlights

Sex at Birth

- 80% male

Gender

- Trans women 2.6%
- Trans men and non-conforming/non-binary each <1%

Transmission

- 54% MSM

Race/Ethnicity

- 42% non-Hispanic Black and 36% Hispanic

Age

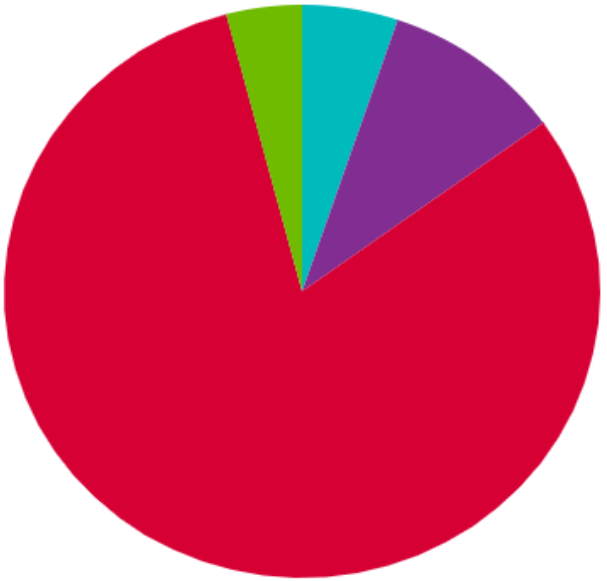
- 13-19: 92 cases (3.9% of all new dx)
- 20-24: 357 cases (15% of all new dx)

Source: NYS HIV/AIDS Surveillance Annual Report 2019. https://www.health.ny.gov/diseases/aids/general/statistics/annual/2019/2019_annual_surveillance_report.pdf

People Newly Diagnosed with HIV, by Transmission Category, 2018

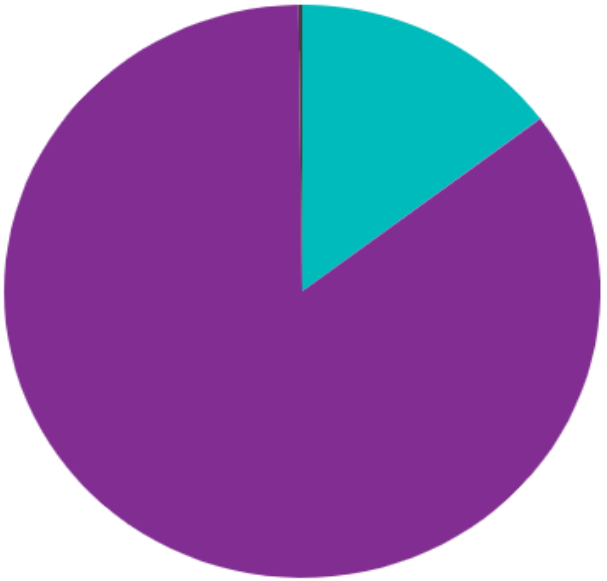
Percent of People Newly Diagnosed with HIV, by Transmission Category, 2018

Male Transmission Categories



- Injection Drug Use (5.2%)
- Heterosexual Contact (9.8%)
- Male-to-Male Sexual Contact (80.9%)
- Male-to-Male Sexual Contact & Injection Drug Use (4.1%)

Female Transmission Categories



- Injection Drug Use (14.7%)
- Heterosexual Contact (85.1%)
- Other* (0.2%)

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*Includes risk factor not reported or identified, along with hemophilia, blood transfusion, perinatal exposure, or missing/suppressed data.

Transgender Individuals: among the groups at highest risk for HIV infection

Lack of familial support

Violence

Stigma and discrimination

Limited health care access

Negative health care encounters

Higher rates of drug and alcohol abuse

Sex work

Incarceration

Homelessness

Untreated Mental Health Needs

Unemployment

HIV Prevalence Rate Ratios, by Race/Ethnicity, 2018

The rate of **Black males** living with an HIV diagnosis is 6.3 times that of **White males**.

The rate of **Hispanic/Latino males** living with an HIV diagnosis is 5.3 times that of **White males**.

The rate of **Black females** living with an HIV diagnosis is 21.7 times that of **White females**.

The rate of **Hispanic/Latina females** living with an HIV diagnosis is 12.7 times that of **White females**.

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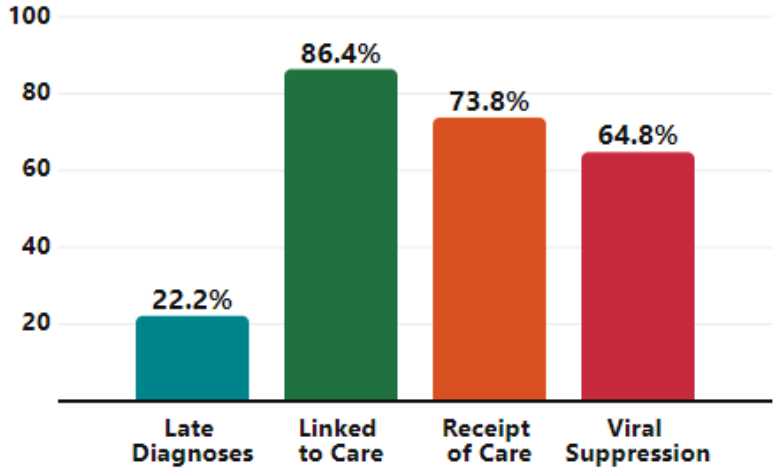
HIV Continuum of Care, 2018

Late Diagnoses and Linked to Care are among people newly diagnosed with HIV and Receipt of Care and Viral Suppression are among all people living with HIV.



Diagnoses-based HIV Continuum Care, 2018

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Youth who don't know they have HIV cannot get the care and treatment they need to stay healthy.

At the end of 2016, an estimated 1.1 MILLION PEOPLE had HIV.‡ Of those, 50,900 were young people.

Nearly 4 in 7
youth knew they had the virus.

Youth were the least likely to be aware of their infection compared to any other age group. It is important for youth to know their HIV status so they can take medicine to treat HIV if they have the virus. Taking HIV medicine every day can make the viral load undetectable. Youth who get and keep an undetectable viral load (or stay virally suppressed) have effectively no risk of transmitting HIV to HIV-negative sex partners.

Compared to all people with HIV, youth have the lowest rates of viral suppression. **For every 100 youth with HIV:** ††

43 received some HIV care

31 were retained in care

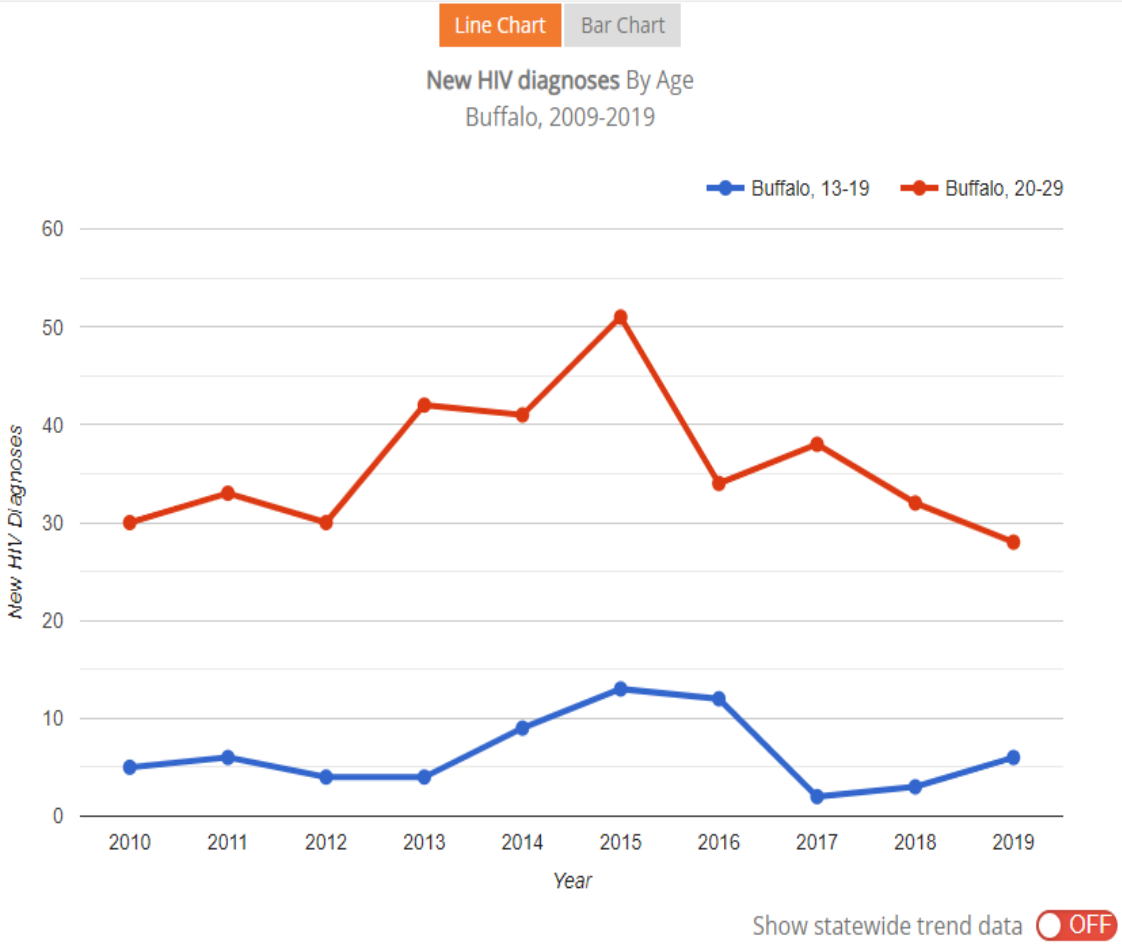
30 were virally suppressed

For comparison, for every **100 people overall** with HIV, **64 received some HIV care**, **49 were retained in care**, and **53 were virally suppressed**.

PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)



https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Data Source: NYS HIV Surveillance System

- Data reported as of June 2020.
- Data reported here for New York City are based on the New York State HIV Surveillance System. There may be slight differences between these numbers and the data reported by the New York City DOHMH HIV Surveillance Registry.
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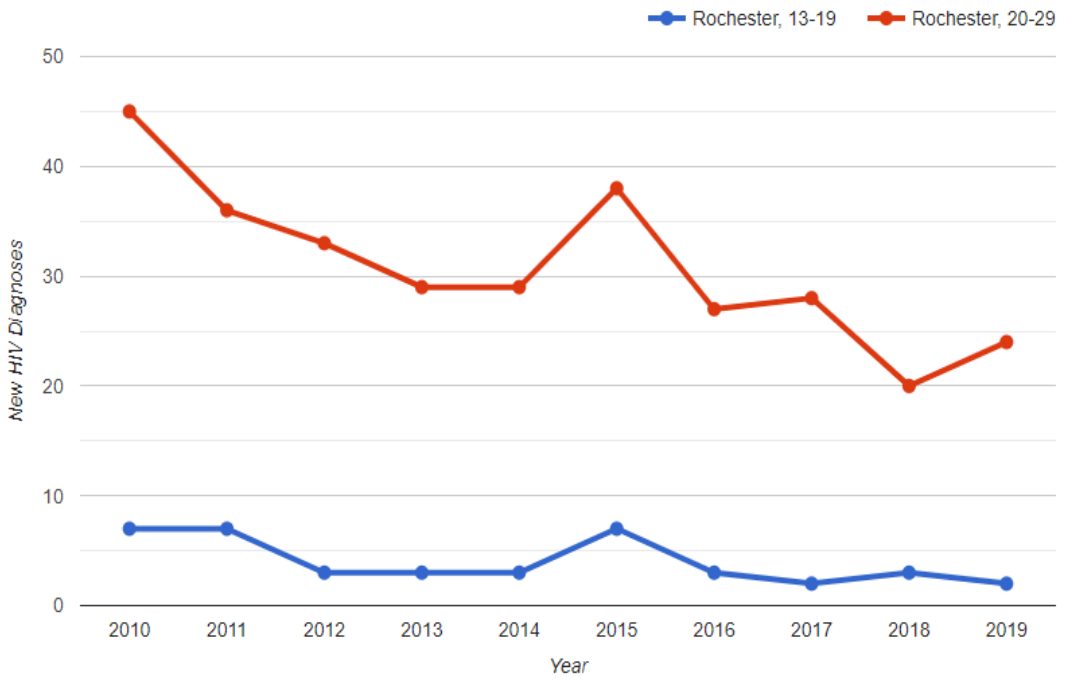
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Rochester, 2009-2019

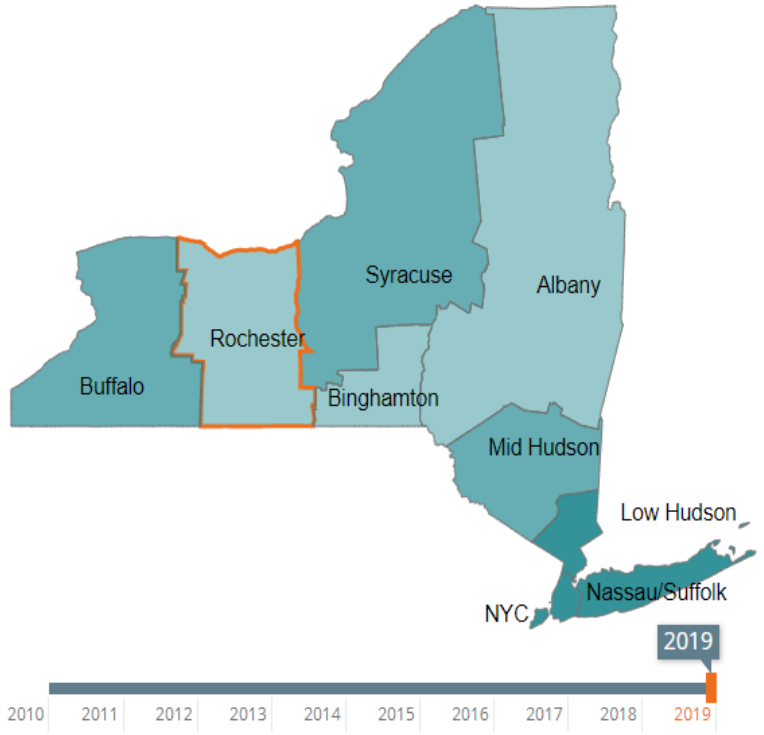


Show statewide trend data OFF

Select Map View
By Ryan White Region | By County

New HIV diagnoses
New York State, 2019

Reset Map



Terciles
9-63 | 64-87 | 88-1,739

Data Source: NYS HIV Surveillance System

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https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

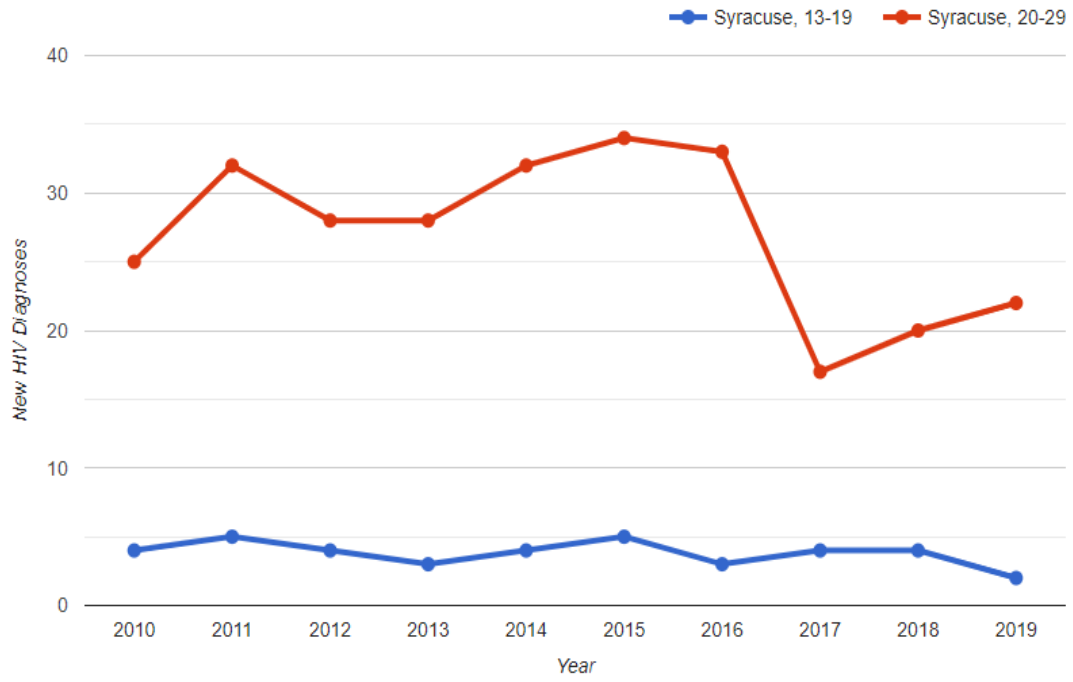
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Syracuse, 2009-2019



Show statewide trend data OFF

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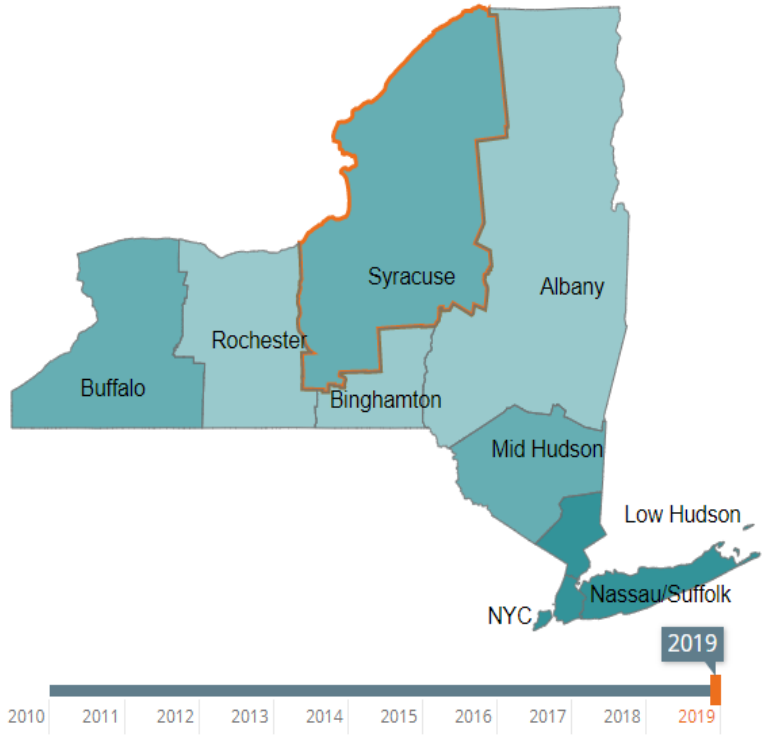
Select Map View

By Ryan White Region | By County

New HIV diagnoses
New York State, 2019

Reset Map



https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Terciles

9-63	64-87	88-1,739

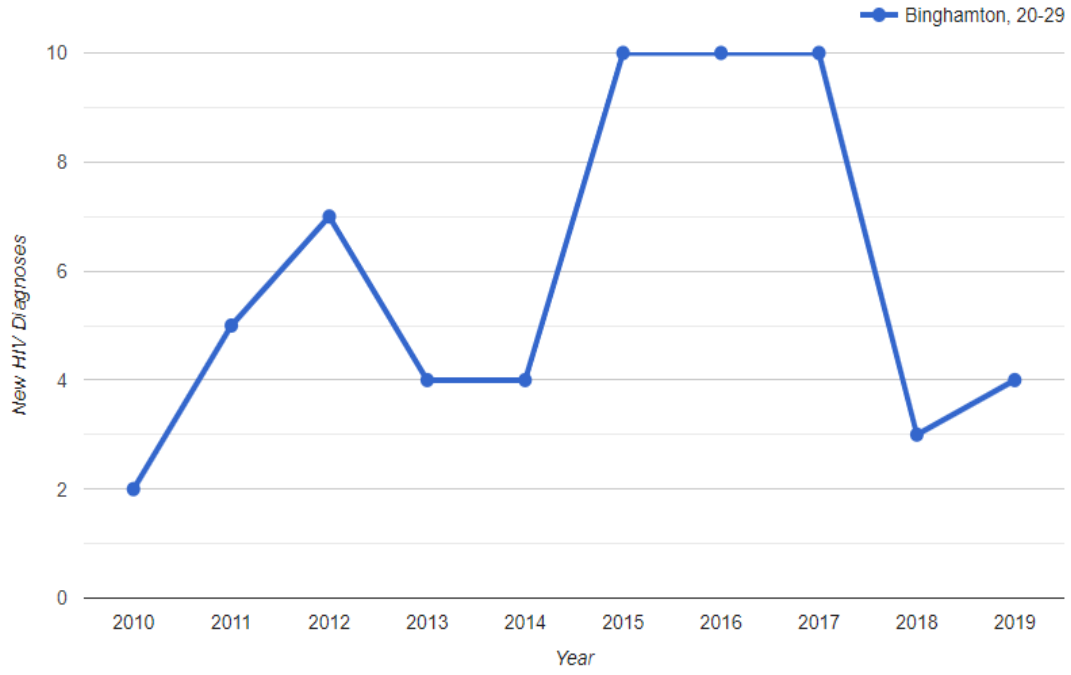
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Binghamton, 2009-2019



Show statewide trend data OFF

for that group is

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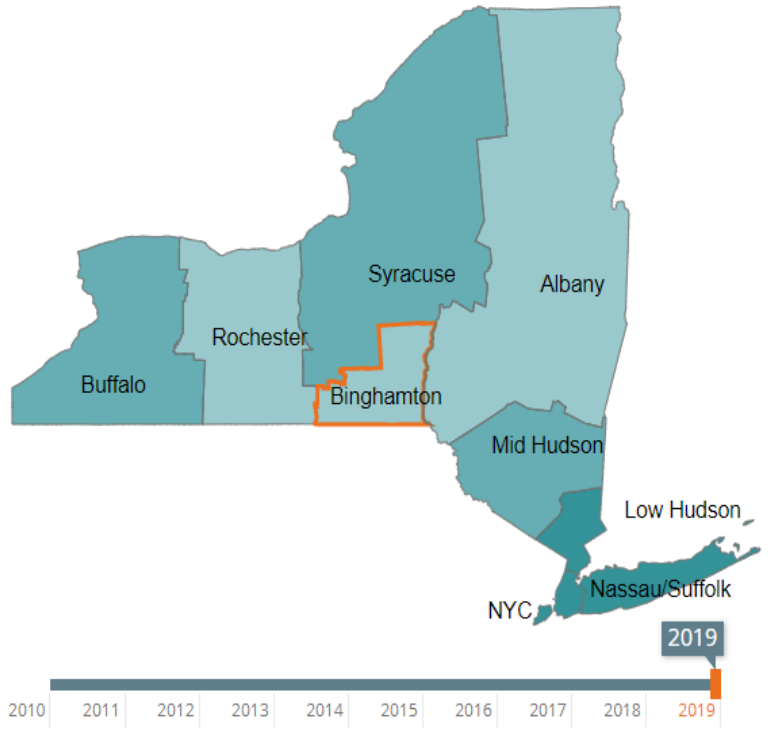
Select Map View

By Ryan White Region | By County

New HIV diagnoses
New York State, 2019

Reset Map



https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Terciles

9-63	64-87	88-1,739

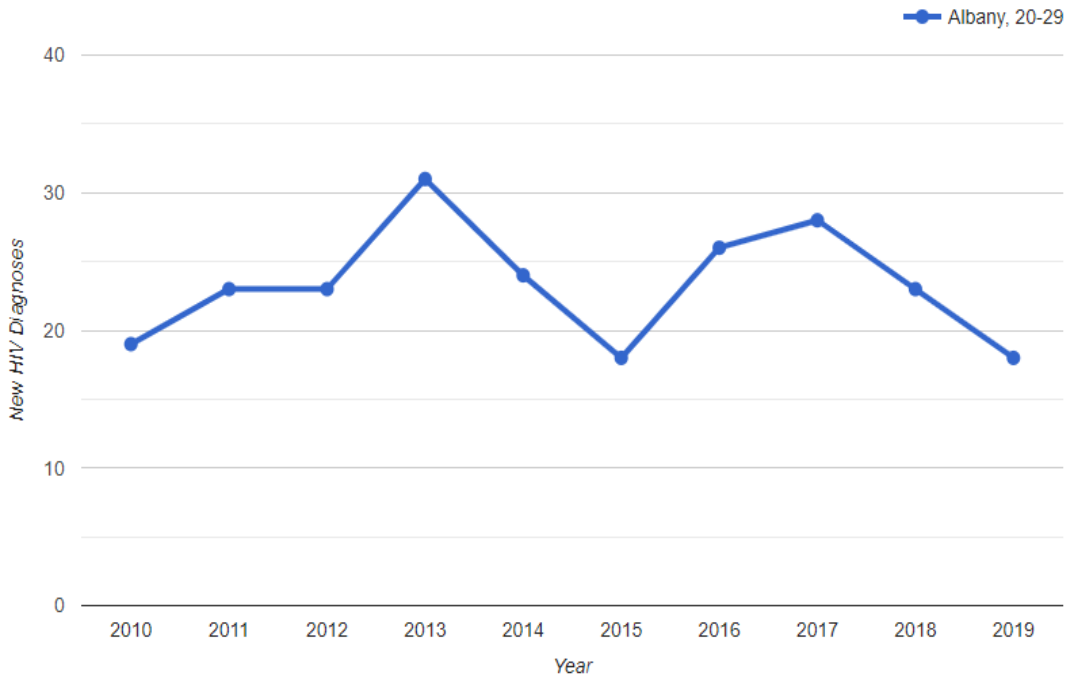
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Albany, 2009-2019



Show statewide trend data OFF

for that group is

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Select Map View

By Ryan White Region | By County

New HIV diagnoses

New York State, 2019

Reset Map

https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Terciles

9-63	64-87	88-1,739

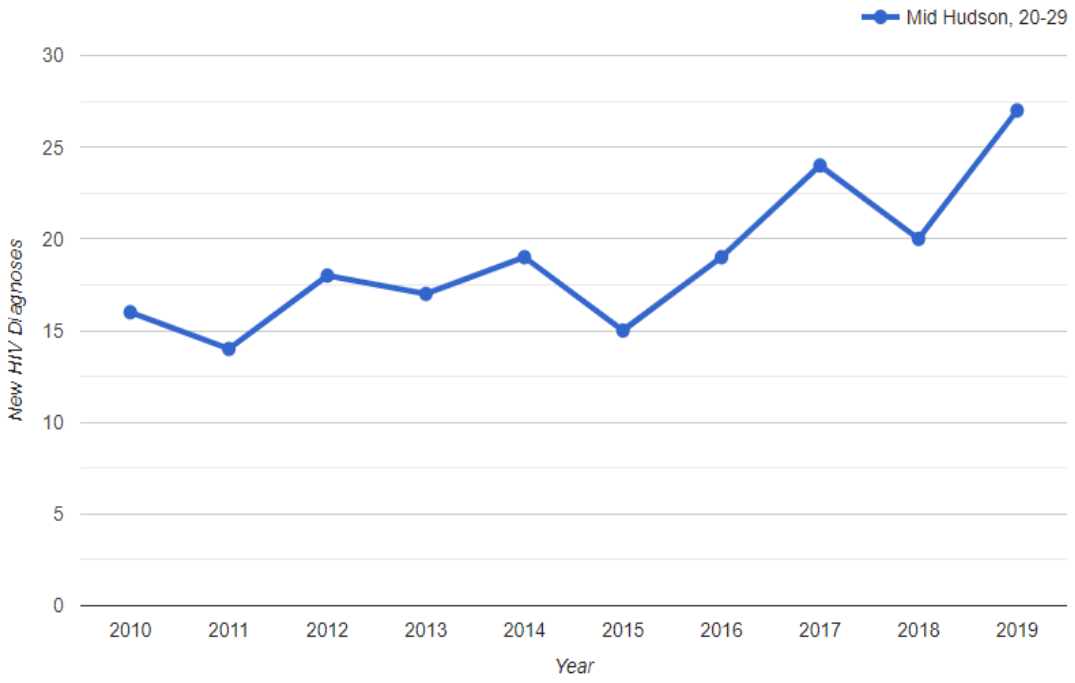
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Mid Hudson, 2009-2019



Show statewide trend data OFF

r for that group is

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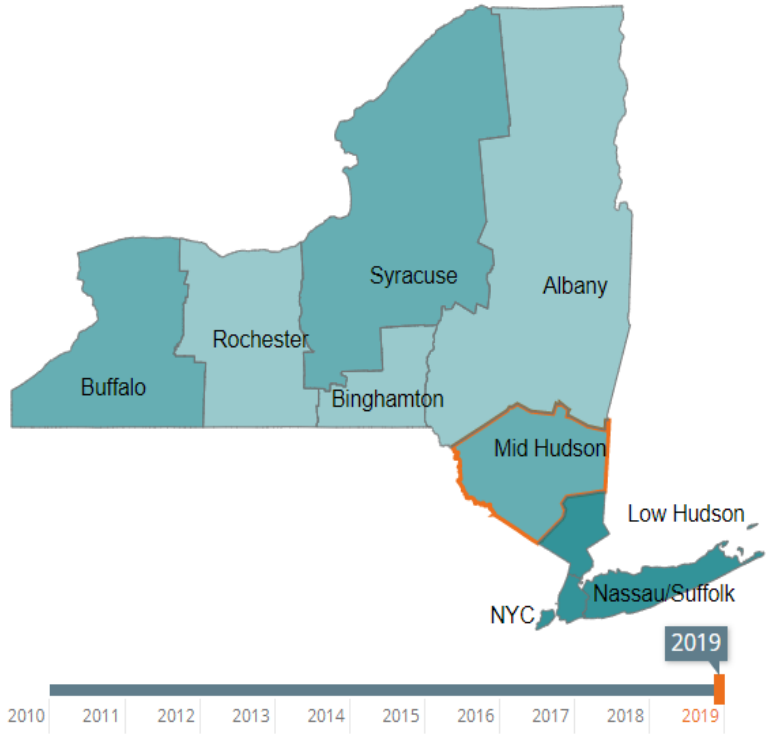
Select Map View

By Ryan White Region | By County

New HIV diagnoses

New York State, 2019

Reset Map



https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Terciles

9-63	64-87	88-1,739

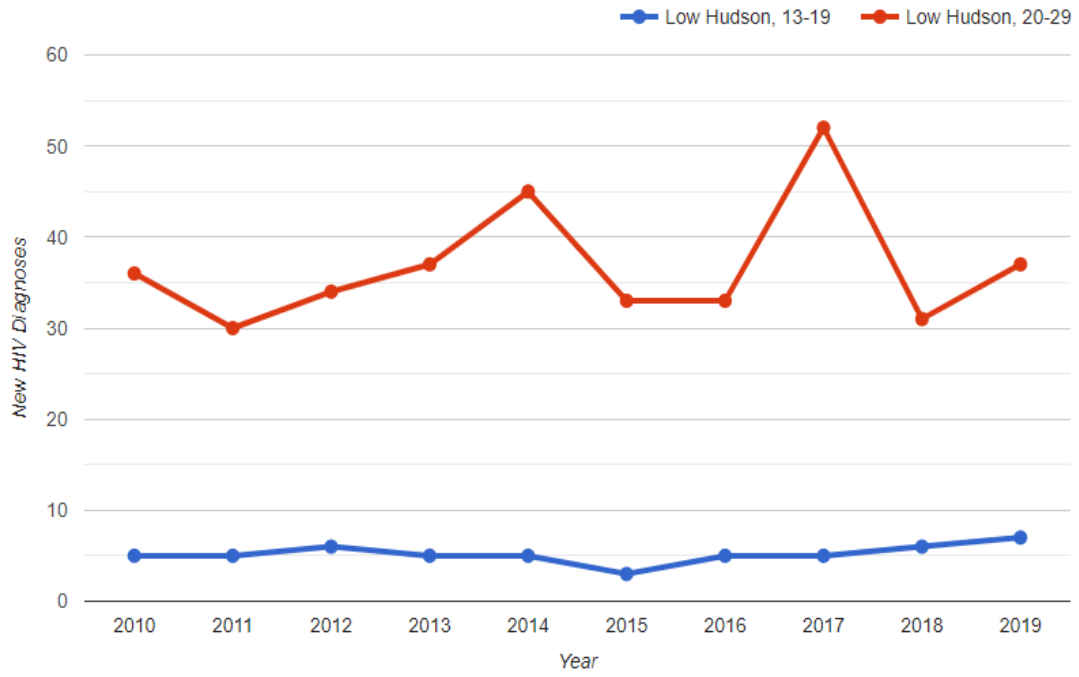
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Low Hudson, 2009-2019

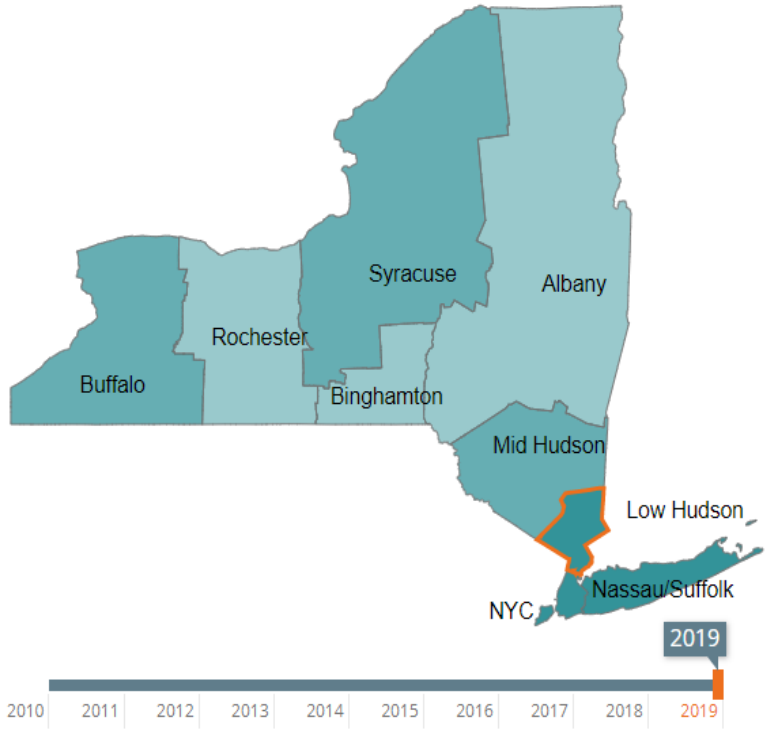


Show statewide trend data OFF

Select Map View
By Ryan White Region | By County

New HIV diagnoses
New York State, 2019

Reset Map



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https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

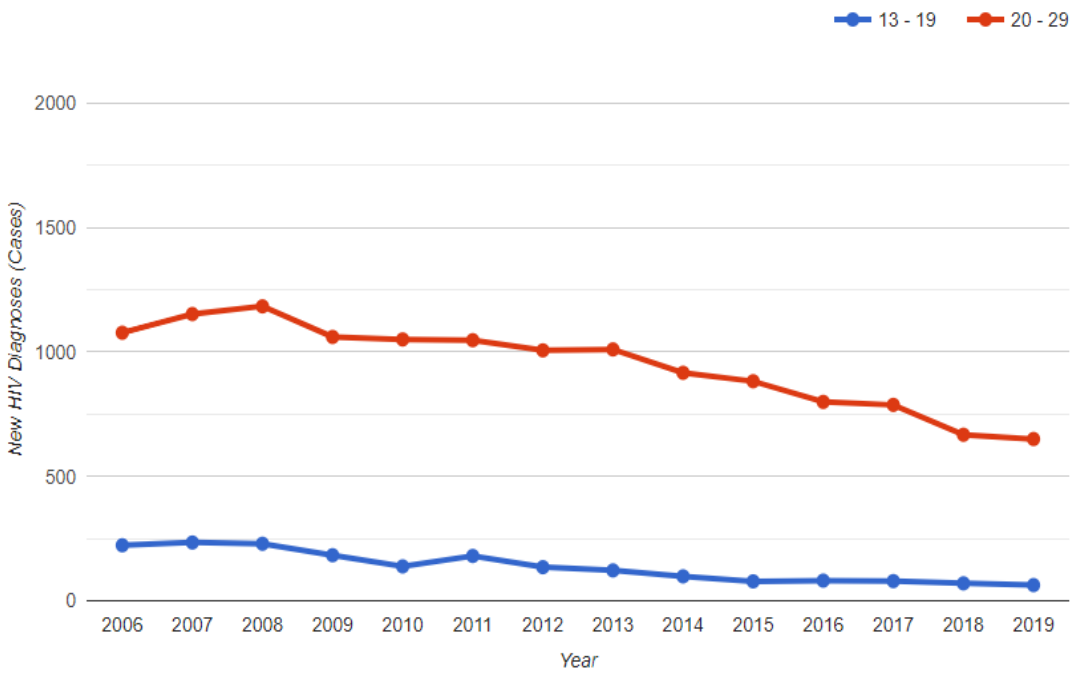
PEOPLE NEWLY DIAGNOSED WITH HIV

New York City (2006-2019)

The number of annual new HIV diagnoses in New York City declined **57%** between 2006-2019 (from 4,144 to 1,771)

Line Chart | Bar Chart

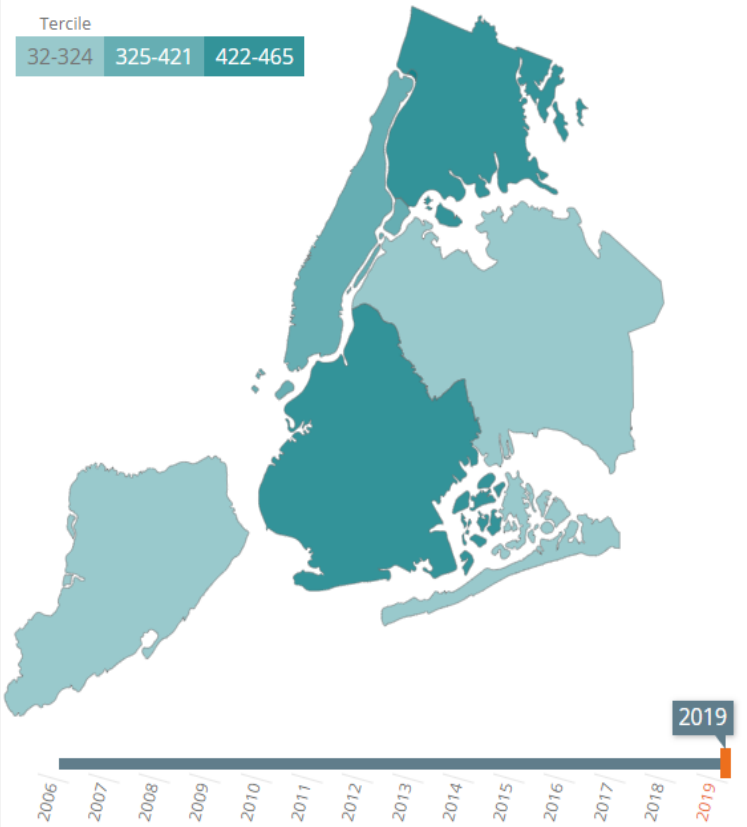
New HIV Diagnoses (Cases) By Age
New York City, 2006-2019



By Borough | By UHF Neighborhood

New HIV Diagnoses (Cases)
New York City, 2019

Reset Map



Data Source: NYC HIV Surveillance Registry, HIV Epidemiology and Field Services Program -- NYC DOHMH

- Data reported as of March 31, 2019. Data reflect 12-month periods from January 1 – December 31.
- Geographic residence refers to residence at HIV diagnosis.
- Borough-wide and citywide totals may include cases assigned to a borough with unknown UHF or assigned to NYC with an unknown borough, respectively. Therefore, UHF totals may not sum to borough totals and borough totals may not sum to citywide totals.
- Rates expressed per 100,000, from Census 2010 population.
- All data shown are for people ages 13 and older. "Age" refers to age at HIV diagnosis.
- Data collection regarding current gender identity for PLWH is conducted on an ongoing basis. Surveillance may have collected new information regarding a person's current gender identity between the time of their HIV diagnosis and publication of these data; those identified as transgender at any time are included as transgender.
- The Other race/ethnicity category includes Native American and multiracial people.

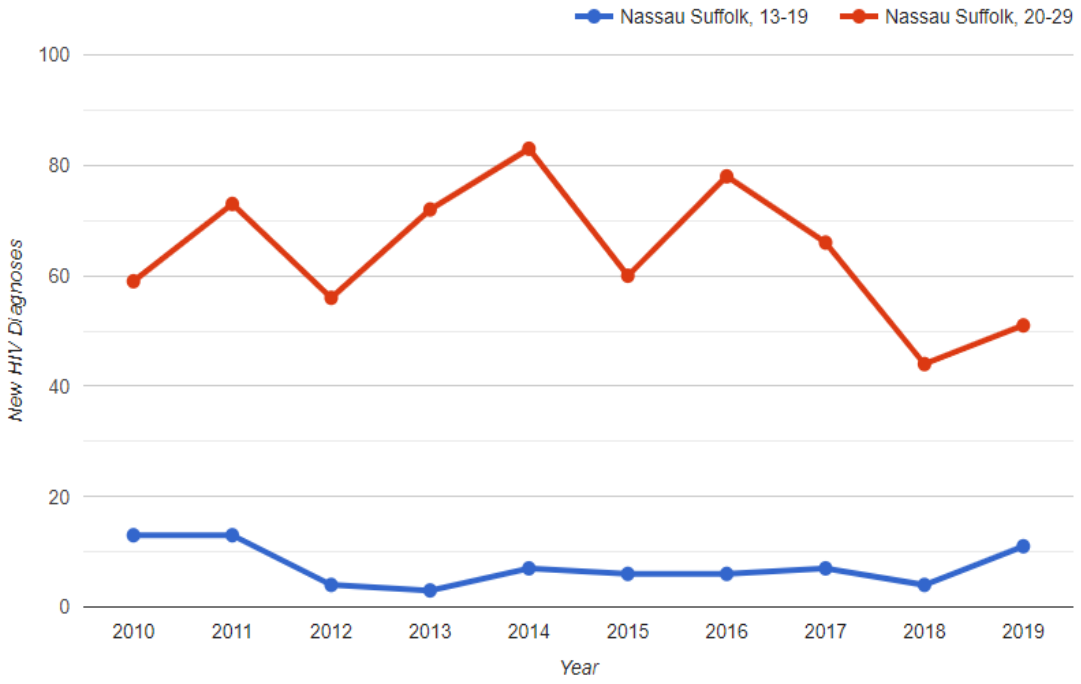
PEOPLE NEWLY DIAGNOSED WITH HIV

New York State (2010-2019)

The number of annual new HIV diagnoses in New York State declined 37% between 2010-2019 (from 3,723 to 2,363)

Line Chart | Bar Chart

New HIV diagnoses By Age
Nassau Suffolk, 2009-2019



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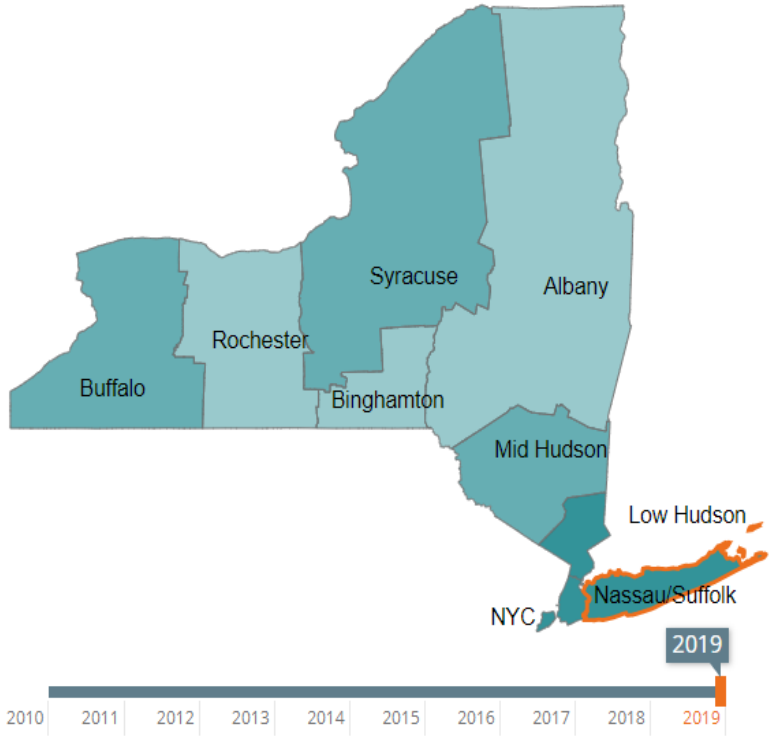
Select Map View

By Ryan White Region | By County

New HIV diagnoses
New York State, 2019

Reset Map



Terciles

9-63	64-87	88-1,739

https://etedashboardny.org/data/new-diagnoses-and-linkage/new-diagnoses-trends-nys

Several challenges make it difficult for youth to access the tools they need to reduce their risk or get treatment and care if they have HIV.

Low Rates of HIV Testing

HIV testing rates among high school students are low. People who do not know they have HIV cannot take advantage of HIV care and treatment and may unknowingly transmit HIV to others.

Socioeconomic Challenges

Among people with HIV, young people are more likely than older people to be living in households with low income levels, to have been recently homeless, recently incarcerated, or uninsured. These factors pose barriers to achieving viral suppression.

Low Rates of PrEP Use

Young people are less likely than adults to use medicine to prevent HIV. Barriers include cost, access, perceived stigma, and privacy concerns.

High Rates of Other STDs

Some of the highest STD rates are among youth aged 20 to 24. Having another STD can greatly increase the chance of getting or transmitting HIV.

Inadequate sex education

Health-related behaviors

Substance use

Low rates of condom use

Number of partners

Older partners

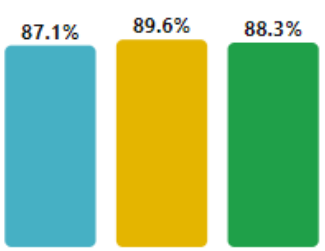
Feeling isolated

Stigma

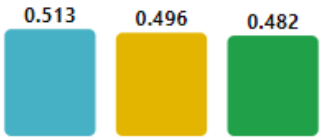
Social Determinants of Health, 2018

AIDSVu

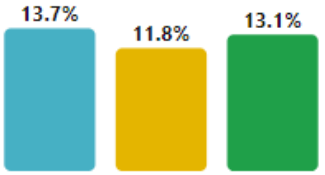
State Region United States



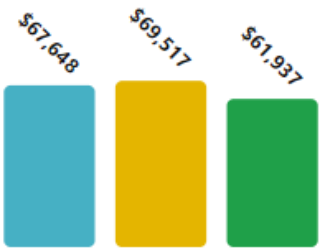
Percent of Population with a High School Education, 2018



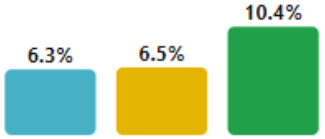
Income Inequality (Gini Coefficient), 2018



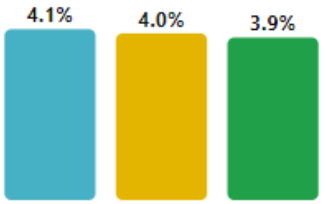
Percent of Population Living in Poverty, 2018



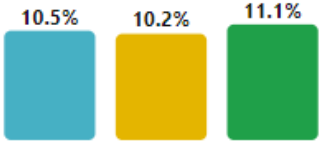
Median Household Income, 2018



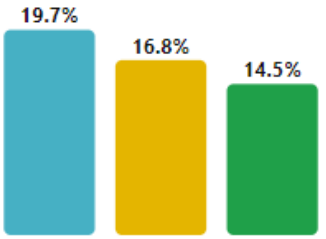
Percent of Population Lacking Health Insurance, 2018



Percent of Population Unemployed, 2018



Percent of Population Living with Food Insecurity, 2016-2018



Percent of Population Living in Unstable Housing, 2018

Several challenges make it difficult for youth to access the tools they need to reduce their risk or get treatment and care if they have HIV.

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High Rates of Other STDs

Some of the highest STD rates are among youth aged 20 to 24. Having another STD can greatly increase the chance of getting or transmitting HIV.

Inadequate sex education

Health-related behaviors

Substance use

Low rates of condom use

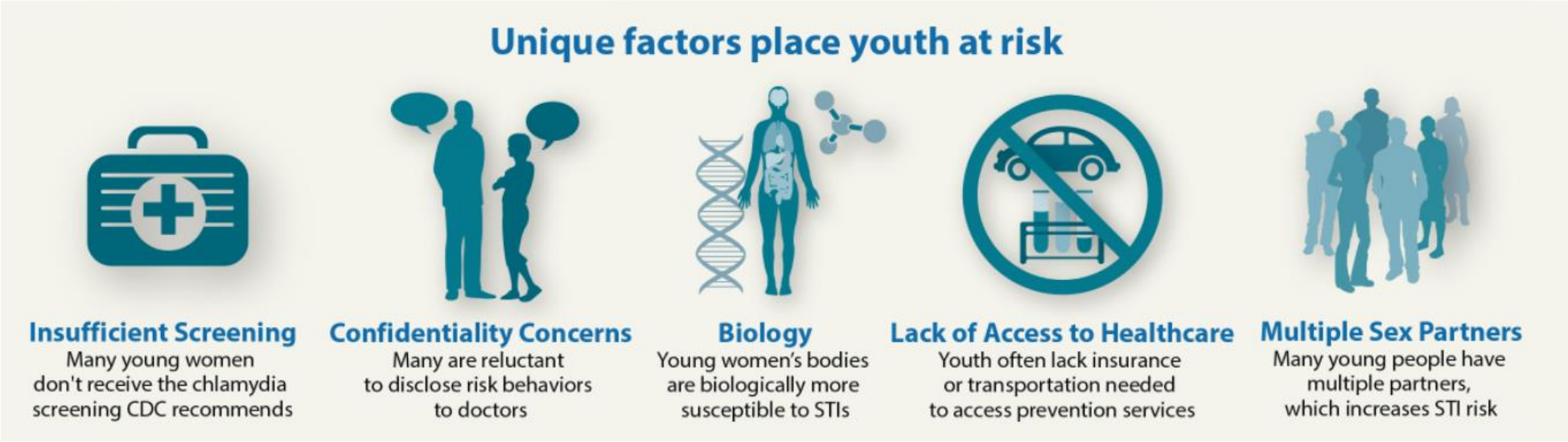
Number of partners

Older partners

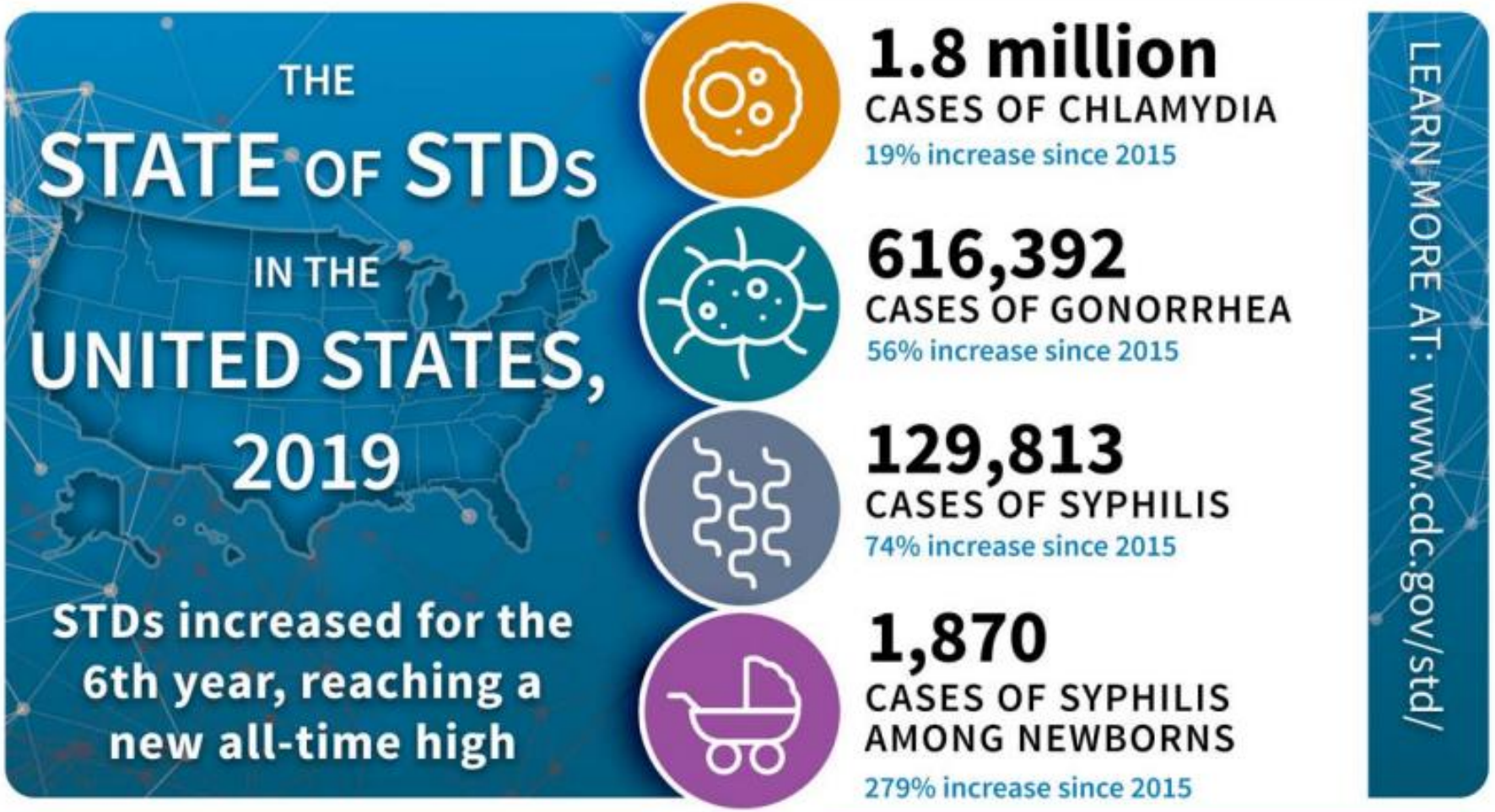
Feeling isolated

Stigma

STI Risk Factors in Adolescents



- Early sexarche
- Incarceration or detention
- IDU
- Visiting STI clinic
- MSM
- Living with HIV
- Exchanging sex for food, drugs, money, or housing



ANYONE WHO HAS SEX COULD GET AN STD, BUT SOME GROUPS ARE MORE AFFECTED

- YOUNG PEOPLE AGED 15-24
- GAY & BISEXUAL MEN
- PREGNANT PEOPLE
- RACIAL & ETHNIC MINORITY GROUPS

DEPARTMENT OF HEALTH & HUMAN SERVICES USA
CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

STDs are common, but not everyone is equally affected

Racial & ethnic minority groups, gay & bisexual men, and youth remain hard hit

CDC.gov/std/statistics/2019/

#STDreport

15-24 year olds account for half of all new STD Infections

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- Health-related behaviors
- Substance use
- Low rates of condom use
- Number of partners
- Older partners
- Feeling isolated
- Stigma

HIV TESTING

CDC: Everyone between 13-64 at least once, annually for those at higher risk.

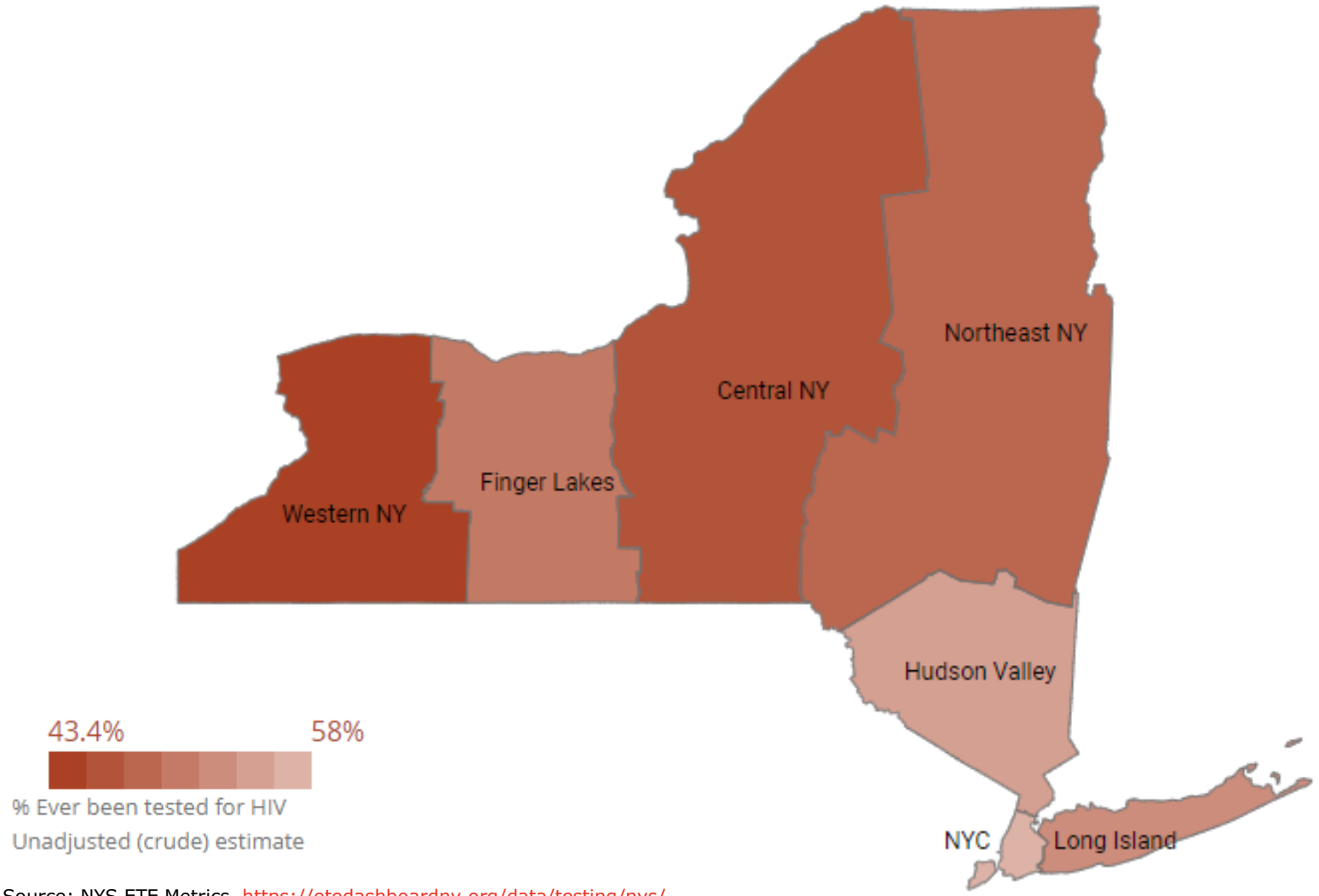
USPSTF: All pregnant persons and adolescents and adults 15-65, and those who may be outside this age range with risk factors.

Risk factors/other indications for testing:

- Men who have sex with men (MSM)
- Injection drug use (IDU)
- Condomless anal sex
- Multiple partners or anonymous partners
- Transactional sex
- Partner with HIV
- STI (self or partner)
- Partner with any of these risk factors
- Any person seeking testing

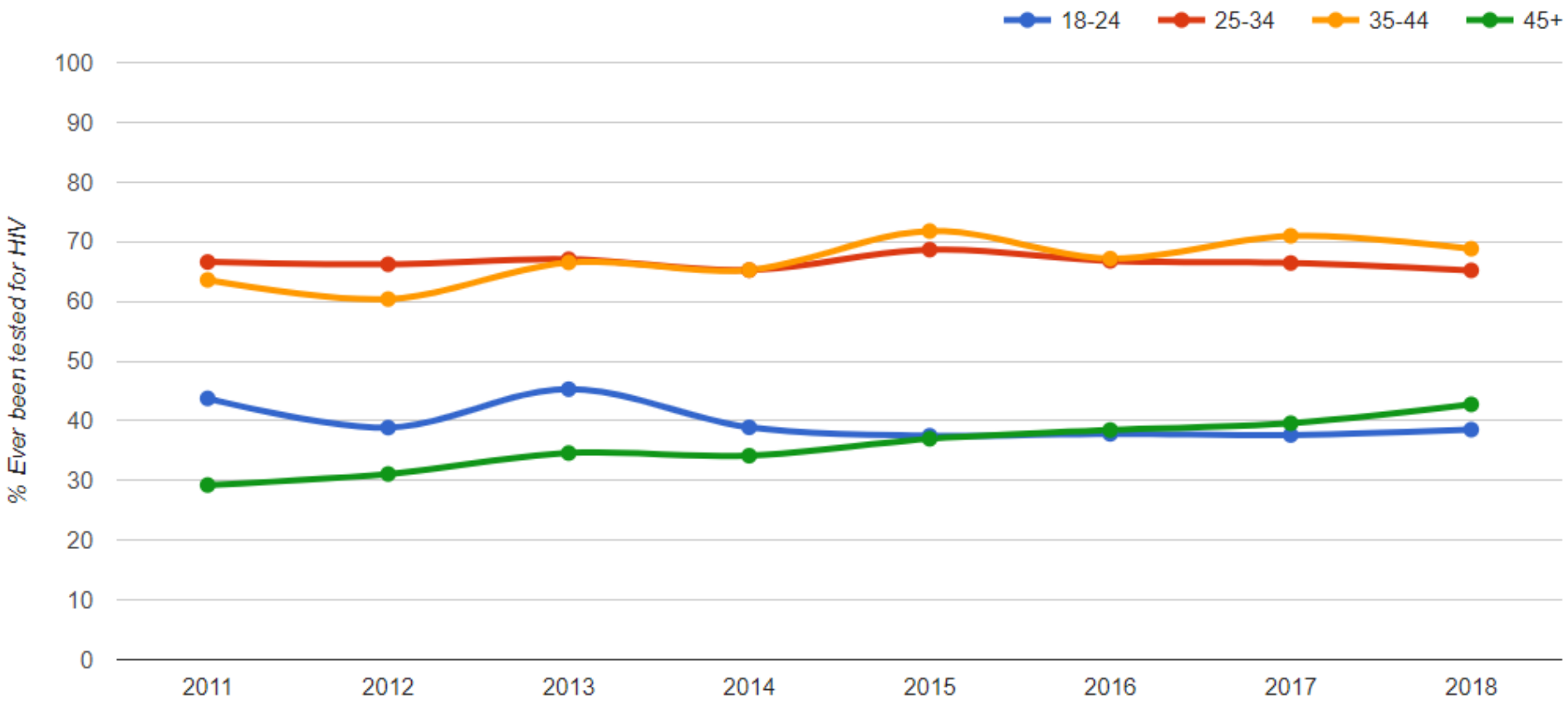
Offer HIV and STI testing every 3 months for those at high risk

Percentage who have ever been tested for HIV by Ryan White Region Total, 2018



Source: NYS ETE Metrics. https://etedashboardny.org/data/testing/nys/

Ever been tested for HIV, New York State, by Age, 2011-2018



Source: NYS DOH ETE Metrics. https://etedashboardny.org/data/testing/nys/

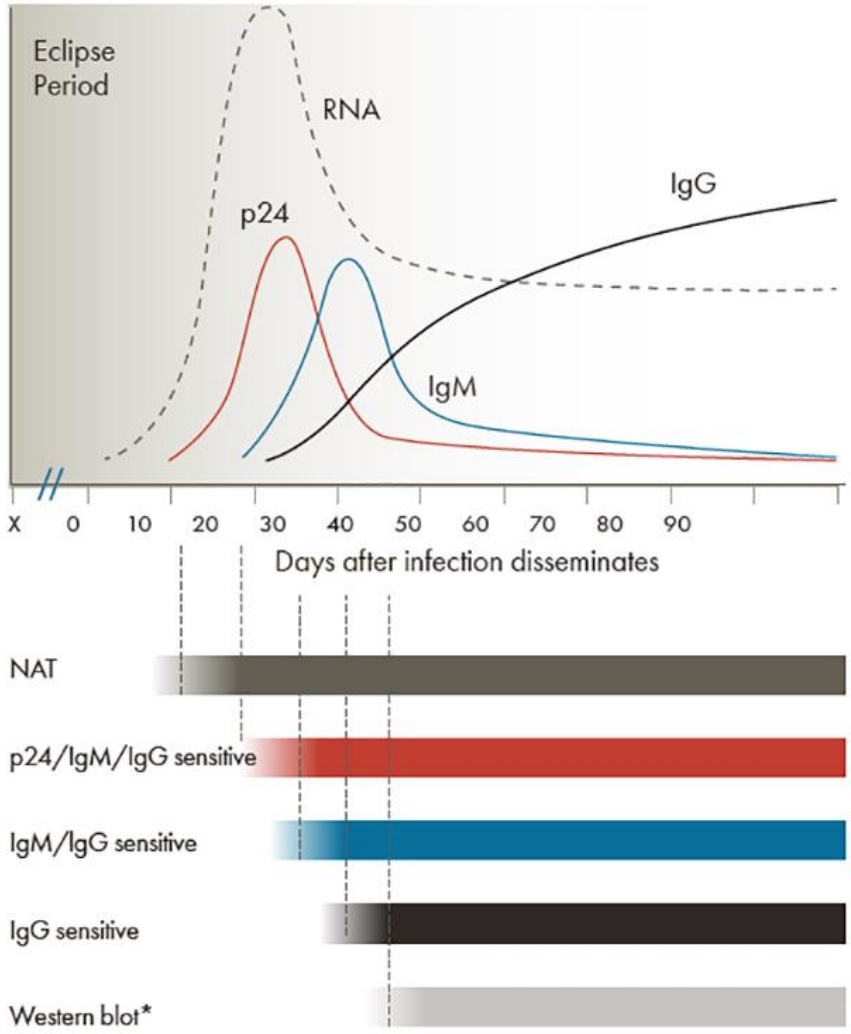
Types of HIV Tests

NAAT - RNA

Antigen/Antibody - p24 Ag, IgG, IgM

Antibody Only - IgG, IgM, or both

Rapid Tests – Antigen/antibody or antibody only



* Western blot is no longer used for HIV.

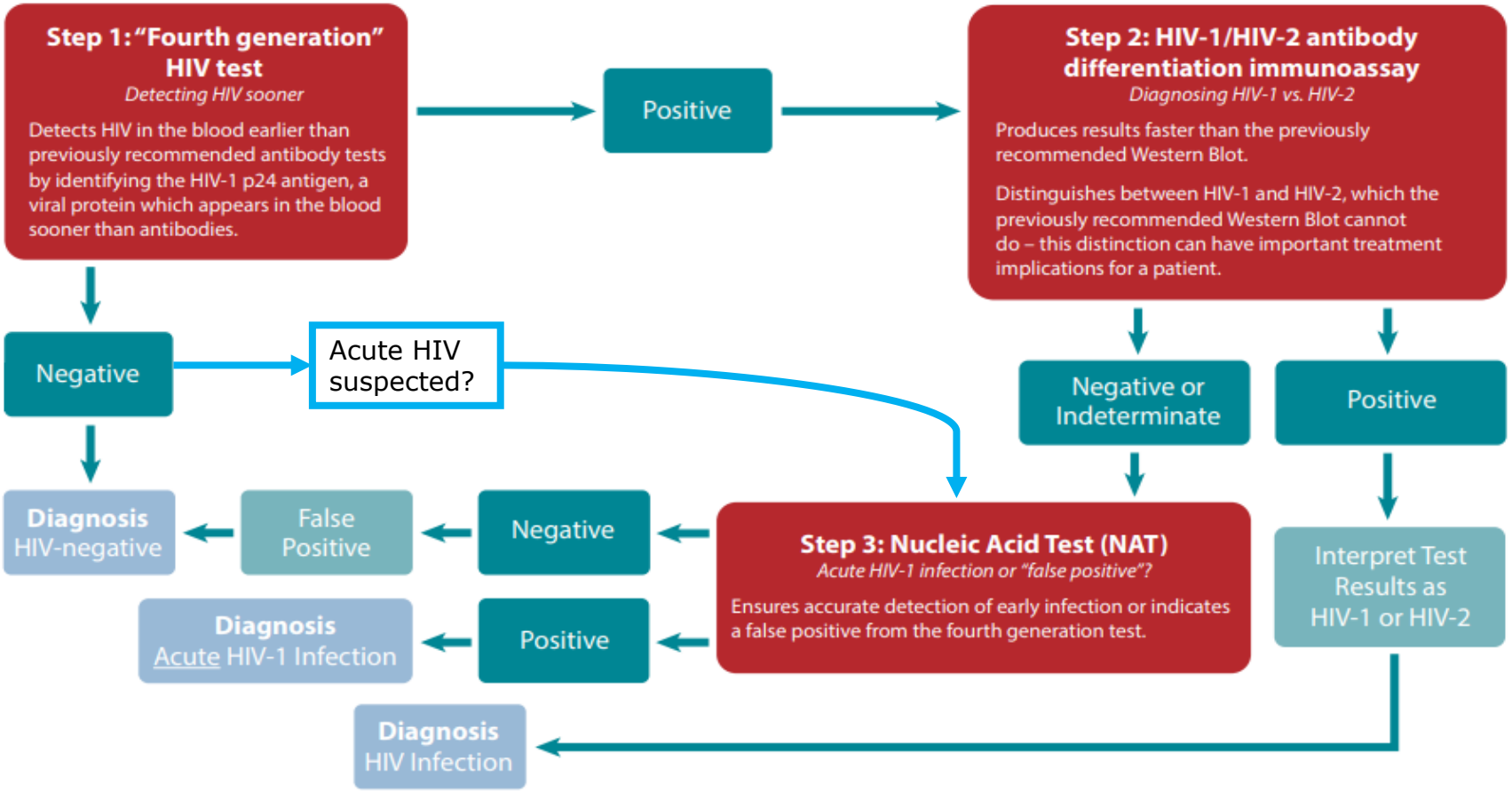
Source: https://www.cdc.gov/hiv/clinicians/screening/diagnostic-tests.html

New CDC Recommendations for HIV Testing in Laboratories

A step-by-step account of the approach

CDC's new recommendations for HIV testing in laboratories capitalize on the latest available technologies to help diagnose HIV infections earlier – as much as 3-4 weeks sooner than the previous testing approach. Early diagnosis is critical since many new infections are transmitted by people in the earliest ("acute") stage of infection.

By putting the latest testing technology to work in laboratories across the United States, we can help address a critical gap in the nation's HIV prevention efforts.



This graphic is designed to illustrate key concepts of the new testing approach in laboratories. For more detail, please see the full guidelines here: http://www.cdc.gov/hiv/pdf/HIVtestingAlgorithmRecommendation-Final.pdf.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
www.cdc.gov/nchhstp/newsroom
JUNE 2014

Informed Consent in NYS

In NY State, a minor's ability to give informed consent is based on capacity for consent, not age, and there is no minimum age requirement for giving informed consent.

A minor who has capacity to consent, may consent to reproductive health care:

- Family Planning (contraceptive management)
- Elective termination
- Prenatal Care
- Labor/Delivery
- STIs

YES! According to NYS Public Health Law, minors can consent to HIV testing, prevention and treatment!

Source: NYS Public Health Law Section 23

Key Points on Who to Test for HIV

1. Are a man who has had sex with another man
2. Have had sex—anal or vaginal—with an HIV-positive partner
3. Have had more than one sex partner since last HIV test
4. Have injected drugs and shared needles with others
5. Have exchanged sex for drugs or money
6. Have been diagnosed with or sought treatment for another STI
7. Have been diagnosed with or treated for hepatitis or tuberculosis (TB)
8. Have had sex with someone who could answer yes to any of the above questions or someone whose sexual history they don't know

HIV Testing Resources

General Locators:

- https://gettested.cdc.gov
- https://HIV.gov/locator

Health Clinics:

- Brick and mortar - Primary care, Family planning, OB/GYN, public STD clinics, etc.
- Telemedicine – e.g. PlushCare

Trillium test@home:

- https://www.trilliumhealth.org/services/trillium-at-home

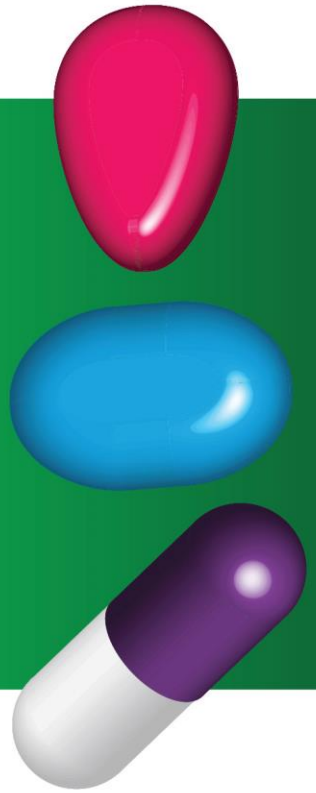
Self-testing - including rapid self-performed or mail-in lab performed:

- CBOs
- Pharmacies
- Commercial web-based organizations (can include STI testing):
  - STDcheck, myLAB Box, Healthlabs.com and more!

FDA Approval of HIV Medicines

'85-'89
'90-'94
'95-'99
'00-'04
'05-'09
'10-'14
'15-'19
'20-'24

Antiretroviral Therapy... What does it do?



Antiretroviral therapy (ART) is the daily use of a combination of HIV medicines to treat HIV. ART saves lives, but does not cure HIV.

- Reduces the amount of HIV in the body
- Reduces the risk of HIV transmission
- Prevents HIV from advancing to AIDS
- Protects the immune system

For more information, visit HIVinfo.NIH.gov

Drug Class Abbreviations:
CA: CCR5 Antagonist; **FDC:** Fixed-Dose Combination; **FI:** Fusion Inhibitor; **INSTI:** Integrase Inhibitor; **NNRTI:** Non-Nucleoside Reverse Transcriptase Inhibitor; **NRTI:** Nucleoside Reverse Transcriptase Inhibitor; **PE:** Pharmacokinetic Enhancer; **PI:** Protease Inhibitor; **PAI:** Post-Attachment Inhibitor

*Note: Drugs with an asterisk are no longer available and/or are no longer recommended for use in the United States by the HHS HIV/AIDS medical practice guidelines. These drugs may still be used in fixed-dose combination formulations.

HIVinfo.NIH.gov

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Treatment in 2021

Simple and well tolerated regimens

- Can be single daily pill for many; several possible alternatives and combinations when not single pill option
- Started immediately with diagnosis

Essential to take medication daily without missed doses

TIPS FOR TAKING YOUR HIV MEDS, ON TIME, ALL THE TIME

ONE DAY, TWO FRIENDS MET IN A COFFEE SHOP...

HEY MARC, MY DOCTOR SAYS I NEED TO BE BETTER ABOUT STICKING TO MY HIV REGIMEN. HOW DO YOU DO IT?

DO YOU USE A PILL BOX?

IT HELPS ME KEEP TRACK OF THE MEDICINE I NEED TO TAKE THAT DAY.

YEAH, I USE A PILL BOX, BUT I *STILL* HAVE TROUBLE REMEMBERING TO TAKE MY MEDS.

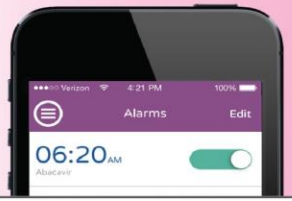
WELL, THERE ARE SOME OTHER THINGS YOU COULD TRY!

KEEP YOUR HIV MEDICINES WHERE YOU'LL NOTICE THEM, BUT OUT OF THE REACH OF CHILDREN.

MAKE TAKING YOUR MEDICINES PART OF YOUR DAILY ROUTINE. FOR EXAMPLE, TAKE YOUR MEDICINES AFTER YOU BRUSH YOUR TEETH EVERY MORNING.

DON'T RUN OUT OF YOUR MEDICINES. REFILL YOUR PRESCRIPTION WHEN YOUR SUPPLY GETS LOW.

SET AN ALARM ON YOUR PHONE. I USE THE *HIVINFO* DRUG APP.



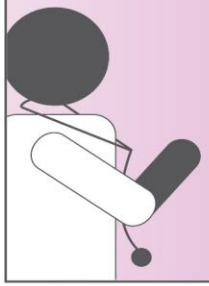
ASK A FRIEND OR FAMILY MEMBER TO REMIND YOU.

HEY, DID YOU TAKE YOUR MEDS TODAY?

THAT'S FINE WHEN I'M AT HOME — BUT WHAT HAPPENS WHEN I HAVE TO WORK LATE OR MY SCHEDULE CHANGES?

KEEP A BACK-UP SUPPLY OF YOUR MEDICINE IN YOUR BAG OR AT WORK, SO YOU CAN TAKE YOUR PILLS WHEREVER YOU ARE.

AND WHEN YOU TRAVEL, BRING MORE MEDICINE THAN YOU THINK YOU'LL NEED IN CASE YOUR PLANS CHANGE.



REMEMBER TO KEEP ALL YOUR APPOINTMENTS WITH YOUR DOCTOR.

IF YOU'RE REALLY STRUGGLING, YOUR DOCTOR CAN GIVE YOU SOME MORE TIPS ON HOW TO STICK TO YOUR HIV REGIMEN. JUST ASK!

FOR MORE INFORMATION ON ADHERENCE, GO TO HIVinfo.NIH.gov

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HIV Medication Chart

Combination Antiretrovirals

Atripla
(EFV/TDF/FTC)

Delstrigo
(DOR/TDF/3TC)

Descovy
(TAF/FTC)

Juluca
(DTG/RPV)

Odefsey
(RPV/TAF/FTC)

Truvada
(TDF/FTC)

Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTI)

Emtriva*†
(emtricitabine, FTC)

Epivir*†
(lamivudine, 3TC)

Retrovir*†
(zidovudine, ZDV)

Viread*†
(tenofovir DF, TDF)

Ziagen*†
(abacavir, ABC)

Vemlidy
(tenofovir alafenamide, TAF)
FDA approved for HBV only

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI)

Edurant
(rilpivirine, RPV)

Intelence
(etravirine, ETR)

Pifeltro
(doravirine, DOR)

Sustiva†
(efavirenz, EFV)

Viramune*†
(nevirapine, NVP)

Protease Inhibitors (PI)

Evotaz
(ATV/COBI)

Kaletra*
(lopinavir/ritonavir, LPV/RTV)

Lexiva*
(fosamprenavir, FPV)

Prezcobix
(DRV/COBI)

Prezista*
(darunavir, DRV)

Reyataz*†
(atazanavir, ATV)

Viracept*
(nelfinavir, NFV)

Entry Inhibitors

Fuzeon
(enfuvirtide, T-20)
Fusion Inhibitor

Selzentry
(maraviroc, MVC)
CCR5 Antagonist

Trogarzo
(ibalizumab, IBA)
Post-Attachment Inhibitor

Integrase Inhibitors (INSTI)

Isentress*▲
(raltegravir, RAL)

Isentress HD
(raltegravir, RAL)

Tivicay
(dolutegravir, DTG)

Boosting Agents

Norvir*†
(ritonavir, RTV)

Tybost
(cobicistat, COBI)

All pills shown in relative size/scale. *Medication brand names appear in bold. Generic names and commonly used abbreviations appear in parentheses.*

*Also available in liquid or powder form. †Generic formulation available. ▲Chewable form available.

6/19

Image Sources: nbcnews.com; Colorado AETC

What Researchers are Working On

Longer acting antiretrovirals

Vaccines

Broadly neutralizing antibodies (bNAbs)

Cure

With timely and effective treatment, young people living with HIV can expect:

Image Source: UNAIDS

Immune system recovery

Long and healthy lives

Sex without fear of transmission

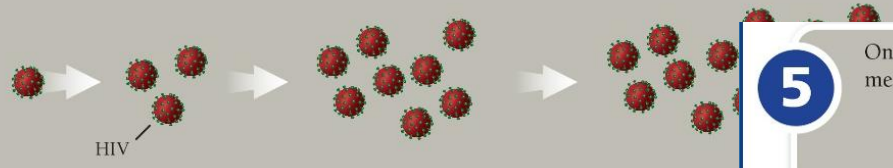
Healthy pregnancies

Routine doctor visits and lab tests around twice a year

Services to assist with housing and food insecurity, interpersonal violence, health insurance, medication coverage, nutrition, and mental health needs

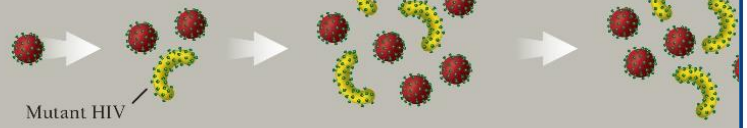
HIV Drug Resistance

1 Once a person has HIV, the virus begins to multiply.

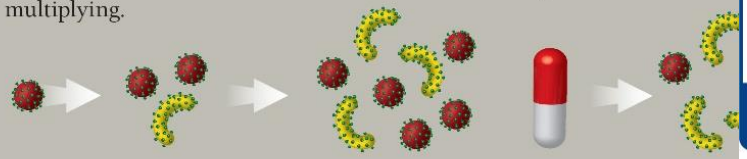


2 HIV medicines block HIV from multiplying. Taking HIV medicine daily re
the amount of HIV in the body.

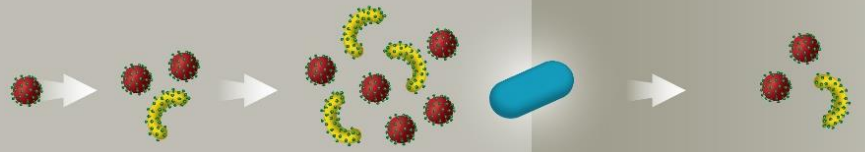
3 If a person stops taking their HIV medicines, the virus begins to multiply
multiplies, the virus sometimes changes form (mutates).



4 Some HIV mutations can cause **HIV drug resistance**. Once drug resistanc
more of the HIV medicines that previously controlled the person's HIV are
effective. In other words, the HIV medicine(s) can't stop the new mutant H
multiplying.



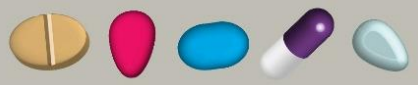
5 Once drug-resistant HIV develops, a person must change HIV medicines. Different HIV medicines are needed to block the drug-resistant HIV from multiplying.



Drug-resistant HIV can be transmitted from person to person or develop after a person starts taking HIV medicines. Drug-resistance testing can detect drug-resistant HIV and identify any HIV medicines that won't be effective against a person's HIV.

6 Taking HIV medicines every day and exactly as prescribed helps prevent drug resistance. HIV medicines block HIV from multiplying. Having less HIV in the body reduces the chances that the virus will mutate and produce drug-resistant HIV.

Prevent drug resistance. Take your HIV medicines daily.



For more information, visit HIVinfo.NIH.gov

Protecting Baby from HIV:

Steps to Prevent Transmission of HIV from Mother to Baby

Women with HIV take HIV medicines during pregnancy and childbirth. Their babies are given HIV medicine for 4 to 6 weeks after birth.

Women with a high or unknown level of HIV in their blood may have a C-section to reduce the risk of HIV transmission during delivery.

HIV can spread through breast milk. Women with HIV give their babies formula instead of breastfeeding.

For more information, visit HIVinfo.NIH.gov

HIV-Discordant Couples

What is an HIV-Discordant Couple?

A couple is discordant if one partner has HIV and the other does not.

An HIV-discordant couple is also called a mixed-status couple.

Ways to prevent HIV transmission within a discordant couple

I'm HIV Positive

Take HIV medicines every day

Keep all medical appointments

I'm HIV Negative

Ask a health care provider about PrEP, an HIV prevention method

Get tested for HIV often

We're Discordant

Don't have sex with other people

Use condoms during sex

HIVinfo.NIH.gov

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Living with HIV

Steps to Better Health

For more information, visit HIVinfo.NIH.gov

You can safely share

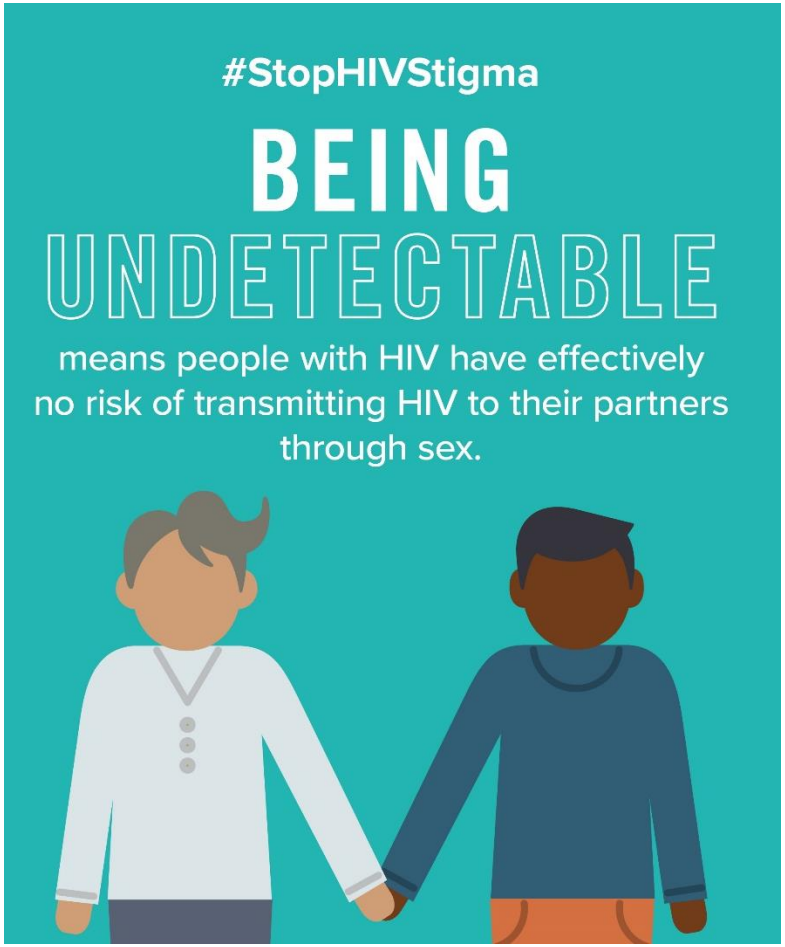
with someone who has HIV.

For more information, visit HIVinfo.NIH.gov

Undetectable = Untransmittable

People living with HIV who have continually suppressed their viral load for at least six months, and continue their treatment as prescribed, ***do not transmit HIV to their sex partners***

The science spans many years and clinical trials involving thousands of people living with HIV; with tens of thousands of instances of condomless sex. No transmission has occurred among participants who are undetectable.



U=U

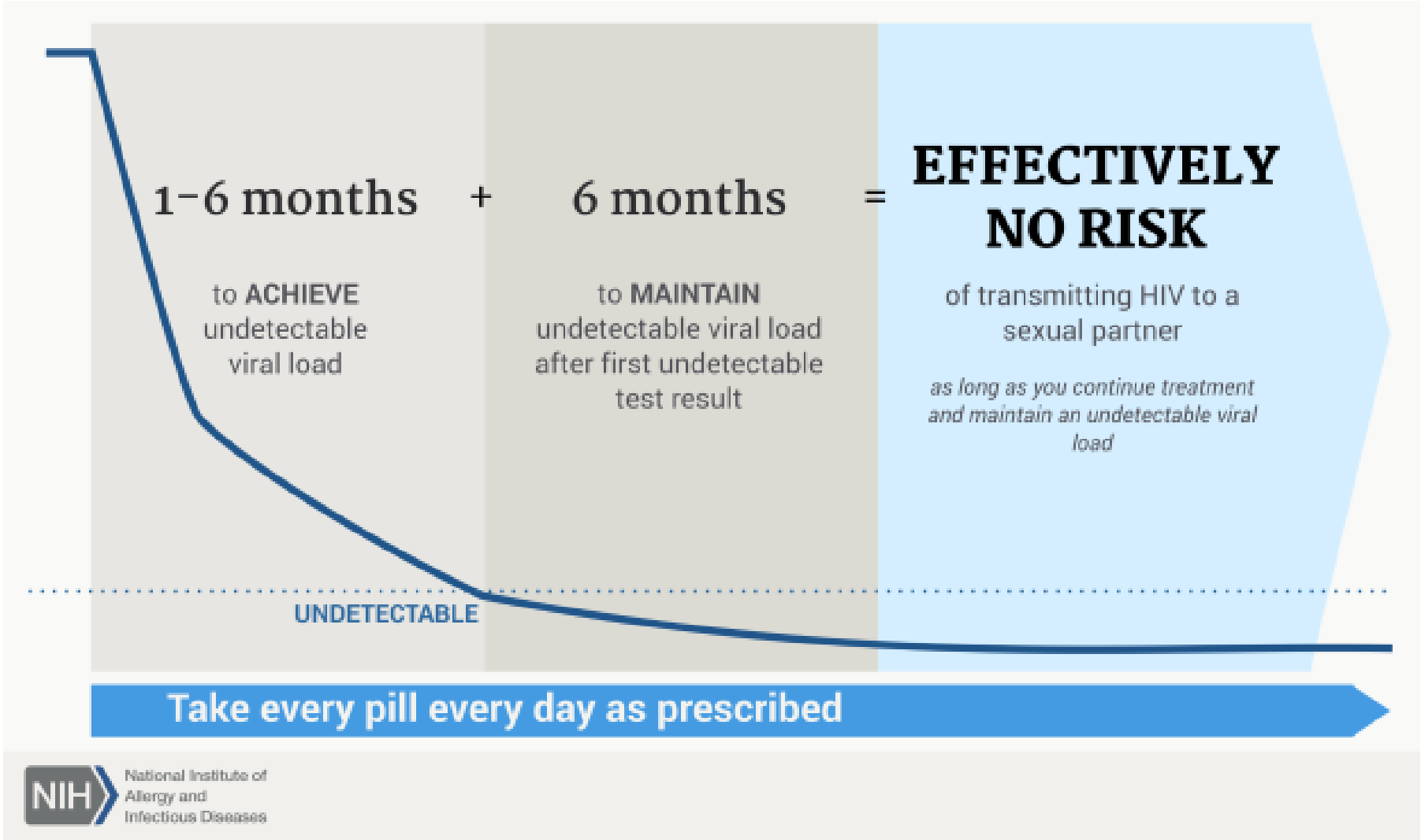
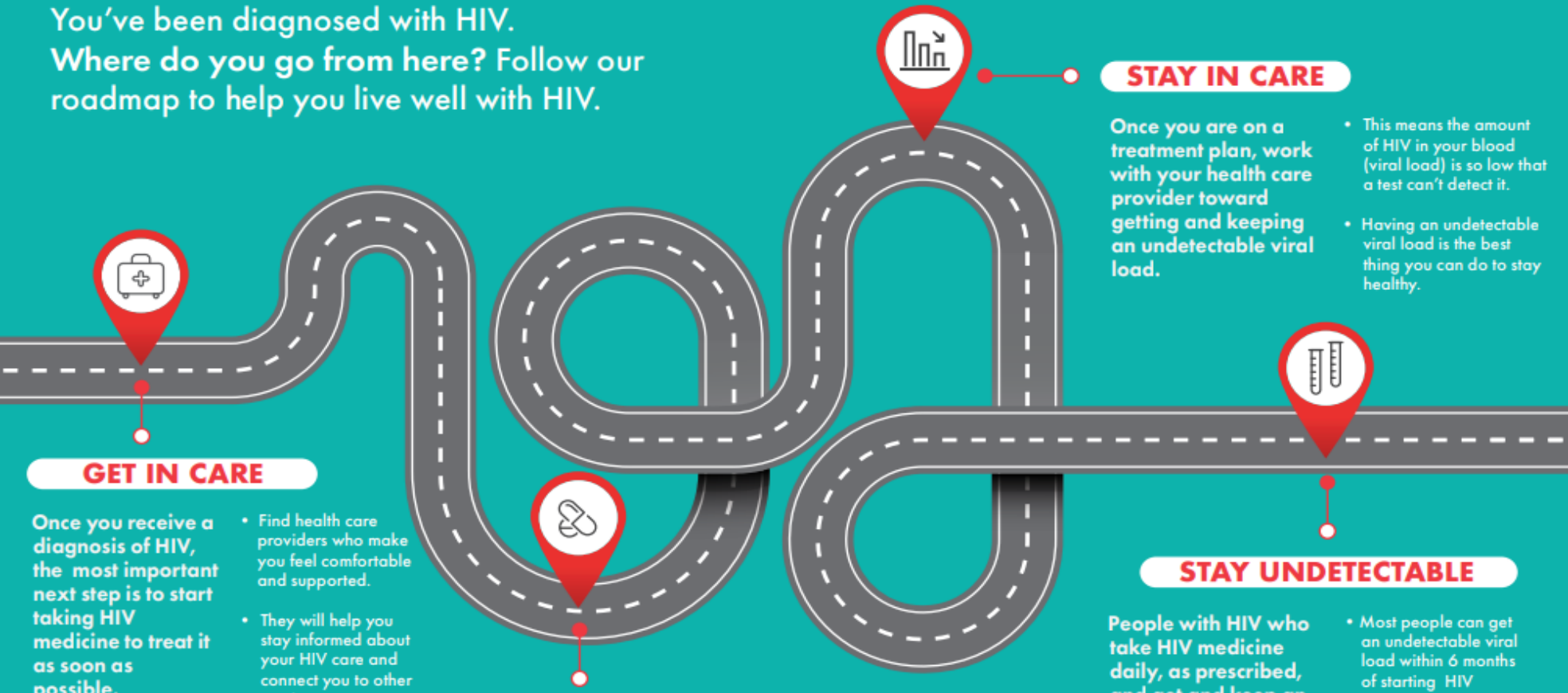


Image Source: NIAID

YOUR ROADMAP TO UNDETECTABLE

You've been diagnosed with HIV. **Where do you go from here?** Follow our roadmap to help you live well with HIV.



GET IN CARE

Once you receive a diagnosis of HIV, the most important next step is to start taking HIV medicine to treat it as soon as possible.

- Find health care providers who make you feel comfortable and supported.
- They will help you stay informed about your HIV care and connect you to other services.

GET ON TREATMENT

Getting on HIV treatment is the best thing you can do for your overall health and the first step to getting an undetectable viral load.

- HIV care and treatment is most effective when you actively take part.
- That means taking your medications as prescribed, going to your medical appointments, and communicating honestly with your health care provider.

STAY IN CARE

Once you are on a treatment plan, work with your health care provider toward getting and keeping an undetectable viral load.

- This means the amount of HIV in your blood (viral load) is so low that a test can't detect it.
- Having an undetectable viral load is the best thing you can do to stay healthy.

STAY UNDETECTABLE

People with HIV who take HIV medicine daily, as prescribed, and get and keep an undetectable viral load have effectively no risk of transmitting HIV to their HIV negative partners during sex.

- Most people can get an undetectable viral load within 6 months of starting HIV treatment.
- Many will become undetectable very quickly, but it could take more time for some.
- The only way to know if you are undetectable is by visiting your provider and getting tested regularly.

CDC | LET'S STOP HIV TOGETHER

Learn more at: cdc.gov/stophivtogether

cdc.gov/HIVTreatmentWorks
#HIVTreatmentWorks

Prevention

- Treatment as prevention
- PEP and PrEP
- Condoms/Dental dams
- Routine STI screening that includes HIV and syphilis testing
- For high-risk patients, the focus should be on continued education, behavioral counseling, and harm reduction
- Risk-reduction counseling: education about safer sex practices, condom use, safer injection practices, referral to syringe exchange programs

Prevention strategies for young people next week in Part II!

THANK YOU!