



HIV Update

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Learning Objectives

Upon completion of this session, participants will be able to:

1. Describe the epidemiology of HIV
2. Discuss HIV testing and treatment
3. Describe current HIV prevention strategies

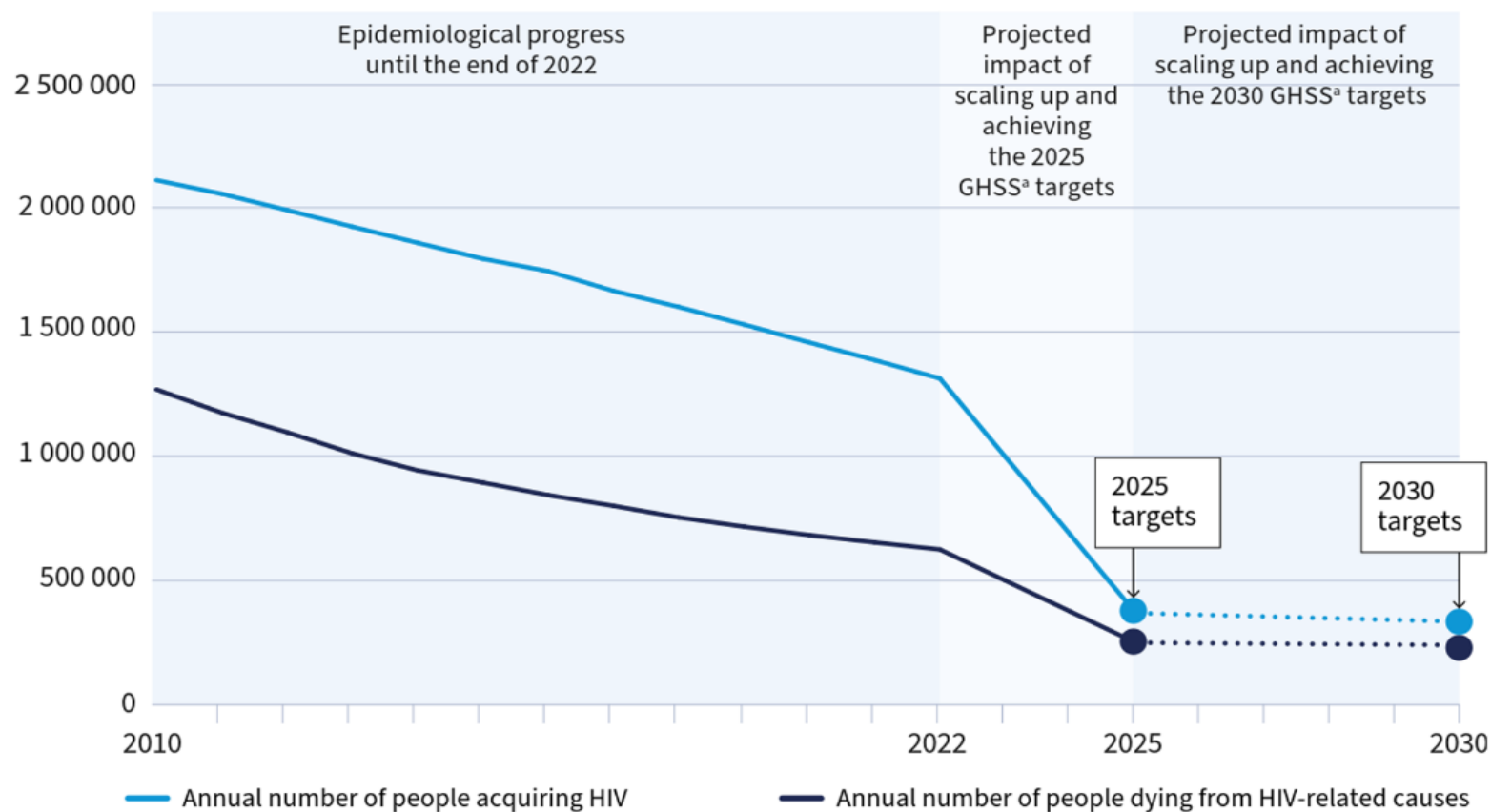
Summary of the global HIV epidemic, 2022

	People living with HIV	People acquiring HIV	People dying from HIV-related causes
 Total	39.0 million [33.1–45.7 million]	1.3 million [1.0–1.7 million]	630 000 [480 000–880 000]
 Adults (15+ years)	37.5 million [31.8–43.6 million]	1.2 million [900 000–1.6 million]	540 000 [410 000–770 000]
 Women (15+ years)	20.0 million [16.9–23.4 million]	540 000 [400 000–740 000]	230 000 [170 000–340 000]
 Men (15+ years)	17.4 million [14.7–20.4 million]	640 000 [490 000–850 000]	310 000 [230 000–440 000]
 Children (<15 years)	1.5 million [1.2–2.1 million]	130 000 [90 000–210 000]	84 000 [56 000–120 000]

Source: UNAIDS/WHO estimates, 2023.

https://www.who.int/images/default-source/departments/hiv/summary-of-the-global-hiv-epidemic-2022.png?sfvrsn=73ac5b6a_13

Global trends in people acquiring HIV and people dying from HIV-related causes, 2010–2022 and projections to 2030



https://www.who.int/images/default-source/departments/hiv/global-trends-in-poeple-acquiring-hiv-and-people-dying-from-hiv-c.png?sfvrsn=8d948153_6

Ending the HIV Epidemic: A Plan for America

GOAL:

75%
reduction
in new HIV
infections
in 5 years
and at least
90%
reduction
in 10 years.



Diagnose all people with HIV as early as possible.

Treat the infection rapidly and effectively to achieve sustained viral suppression.



Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).

Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.



Overall Goal: Decrease the number of new HIV diagnoses to 9,588 by 2025 and 3,000 by 2030.

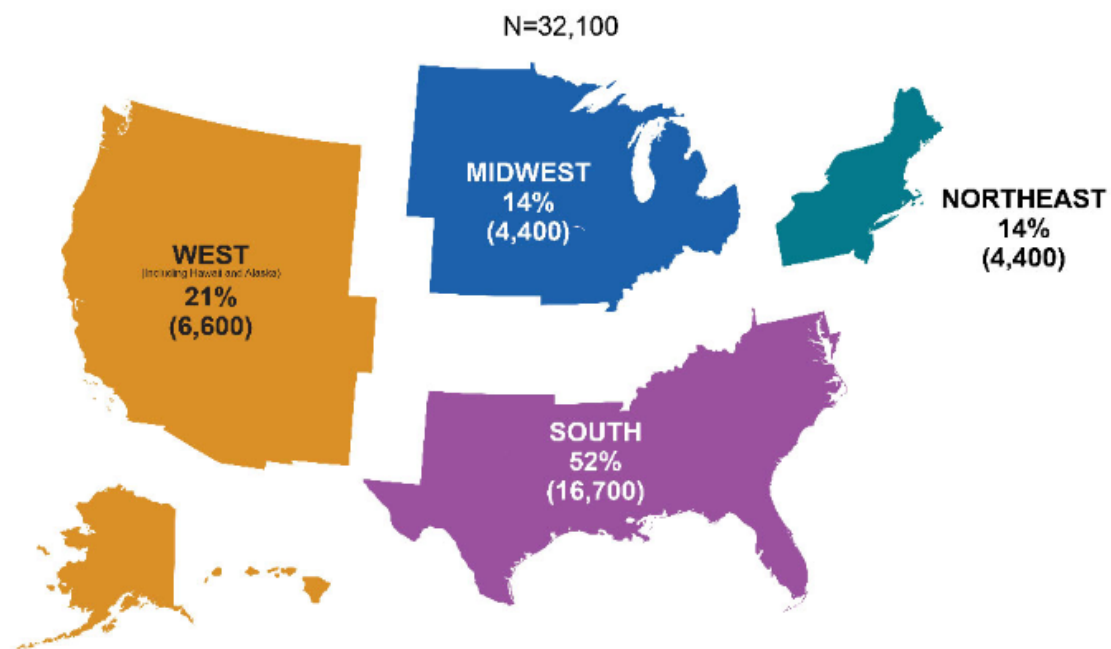


In 2021, **36,136 people** received an HIV diagnosis in the US and dependent areas.*

* Children aged 12 and under accounted for 53 new HIV diagnoses in 2021.

<https://www.cdc.gov/hiv/group/age/diagnoses.html>

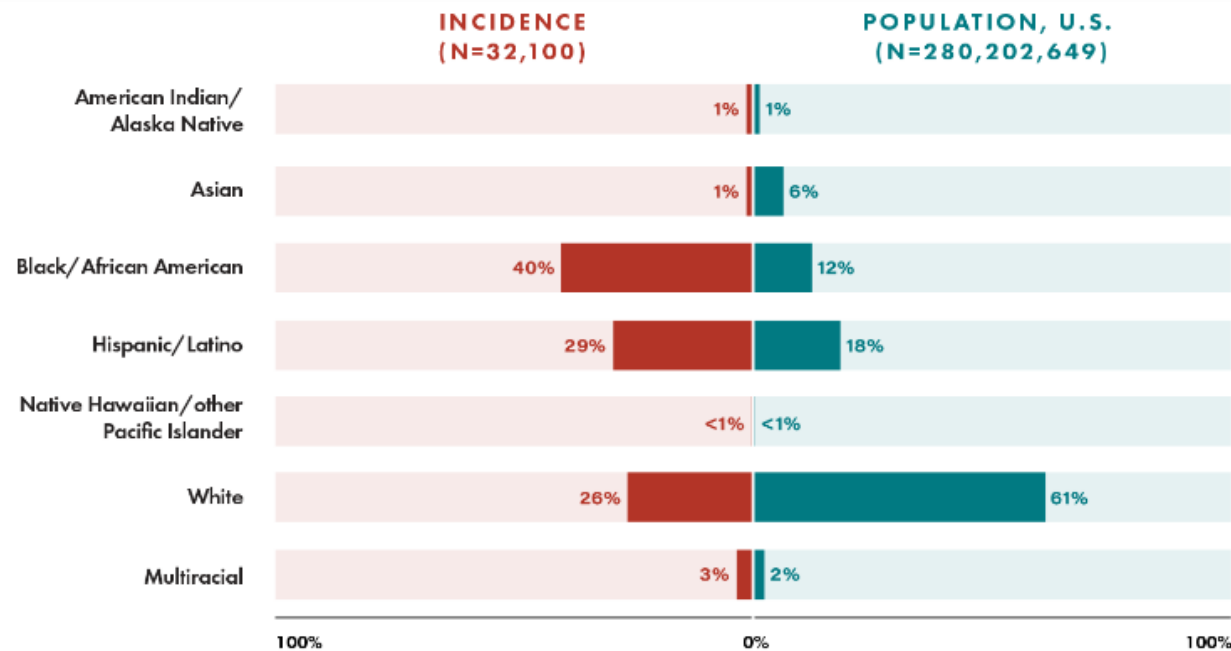
Estimated HIV Infections in the US by Region, 2021*



* Among people aged 13 and older.

Source: CDC. Estimated HIV incidence and prevalence in the United States 2017–2021. *HIV Surveillance Supplemental Report* 2023;28(3)

Estimated HIV Incidence and Population Among Persons aged ≥ 13 years, by race/ethnicity 2021 - US



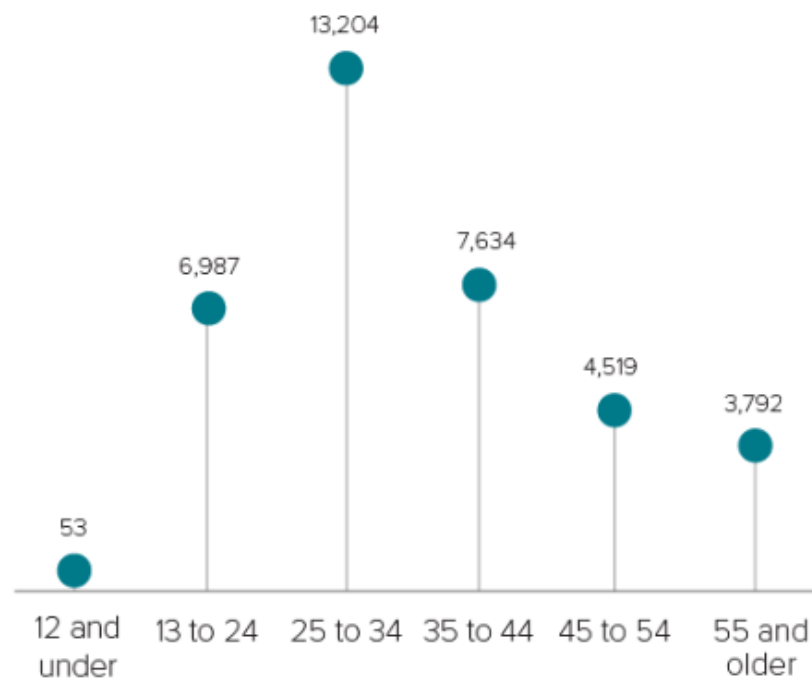
Note. Estimates were derived from a CD4-based depletion model using HIV surveillance data. Estimates for the year 2021 should be interpreted with caution due to adjustments made to the monthly distribution of reported diagnoses during those years to account for the impact of COVID-19 on HIV testing and diagnosis in the United States. Hispanic/Latino can be of any race.



Source: CDC, *Estimated HIV incidence and prevalence in the United States, 2017-2021: National Profile, HIV Surveillance Supplemental Report 2023; 28(3).*

HIV Diagnoses in the US and Dependent Areas by Age, 2021

People aged 13 to 34 accounted for more than half (56%) of new HIV diagnoses in 2021.



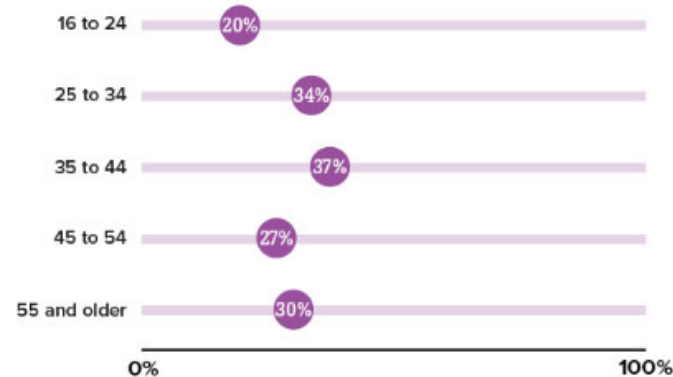
Source: CDC. [Diagnoses of HIV infection in the United States and dependent areas, 2021](#). *HIV Surveillance Report* 2023;34.

Overall Goal: Increase the estimated percentage of people with indications for PrEP classified as having been prescribed PrEP to at least 50% by 2025 and remain at 50% by 2030.



PrEP Coverage in the US by Age, 2021*†

More work is needed to ensure equitable prescribing of PrEP. Overall, only 30% of people who could benefit from PrEP were prescribed PrEP in 2021.

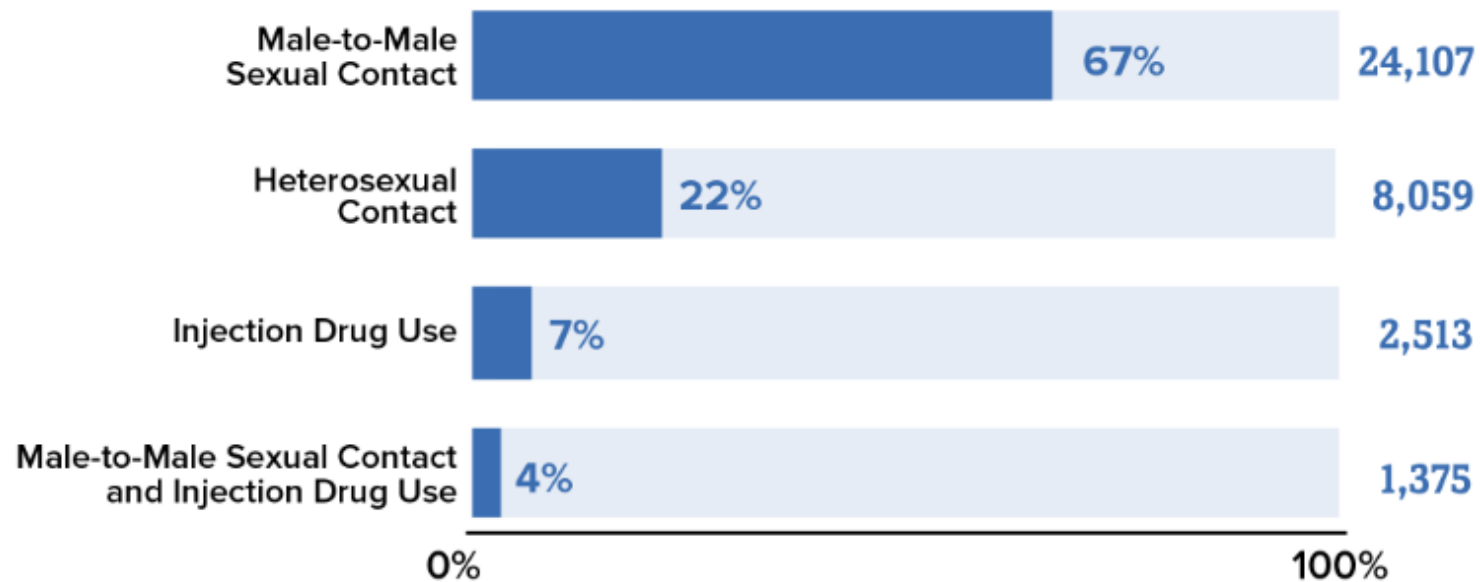


*PrEP coverage is the estimated percentage of people with indications for PrEP classified as having been prescribed PrEP.

† Data not available for people aged 15 and under.

Source: CDC. [Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas, 2021](#). *HIV Surveillance Supplemental Report* 2023;28(4).

New HIV Diagnoses in the US and Dependent Areas by Transmission Category, 2021*



NOTE: Does not include *other* and *perinatal* transmission categories.

* Among people aged 13 and older.

Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2021. *HIV Surveillance Report* 2023;34

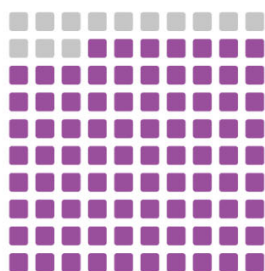
Overall Goal: Increase the percentage of people with diagnosed HIV who are virally suppressed to at least 95% by 2025 and remain at 95% by 2030.



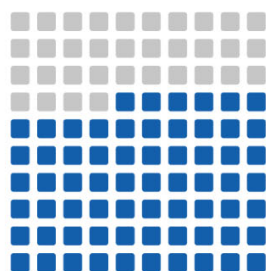
FIGURE 13

Prevalence-based HIV care continuum for persons aged ≥ 13 years living with HIV infection (diagnosed or undiagnosed) at year-end 2021—United States

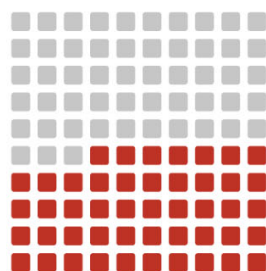
In 2021, for every 100 people overall living with HIV:



87
received
a diagnosis



66
received some
HIV care



47
were retained
in care



58
were virally
suppressed

Note. Estimates were calculated by assigned sex at birth and derived from a CD4-based depletion model using HIV surveillance data. Estimates for year 2021 should be interpreted with caution due to adjustments made to the monthly distribution of reported diagnoses during this year to account for the impact of COVID-19 on HIV testing and diagnosis in the United States.



CDCs Ranking of HIV (all ages) by State 2021

States with the highest number of HIV diagnoses in 2021

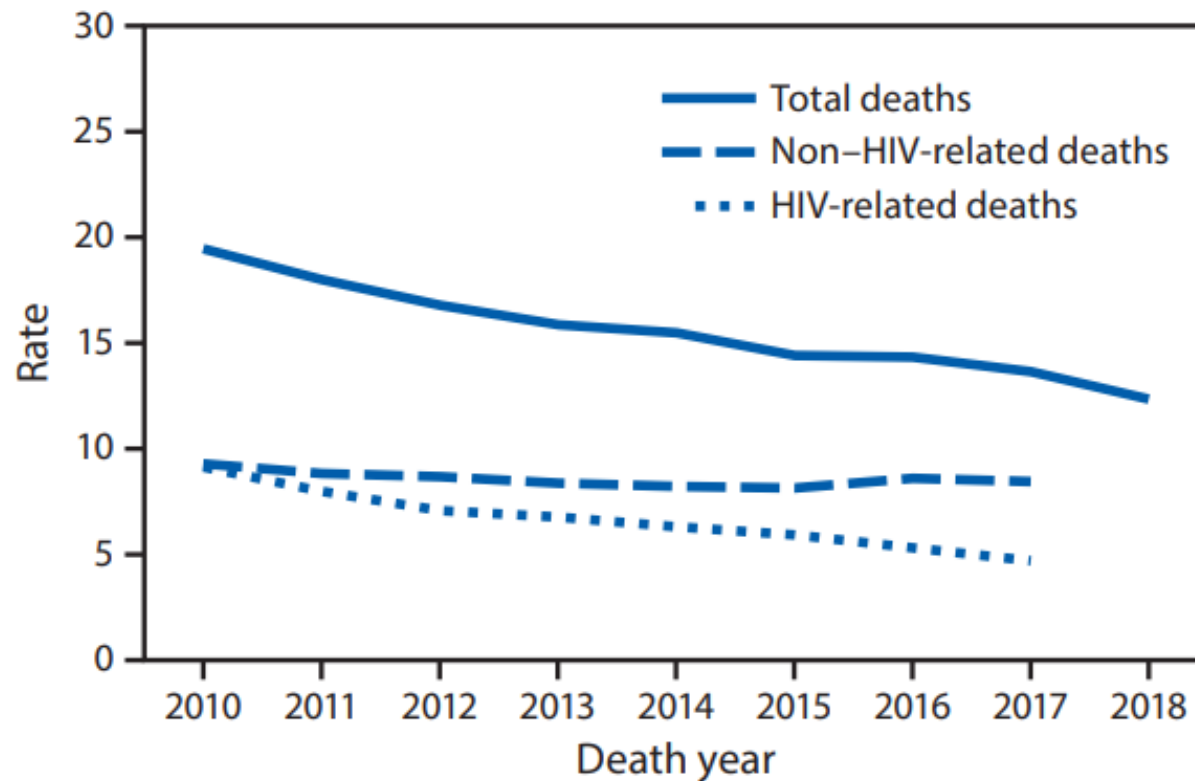
1. California (N=4,405)
2. Texas (N=4,366)
3. **Florida (N=4,077)**
4. Georgia (N=2,374)
5. New York (N=2,118)

States with the highest HIV diagnosis rates (including D.C.) in 2021

1. District of Columbia (29.1)
2. Georgia (22.0)
3. Louisiana (19.5)
4. **Florida (18.7)**
5. Nevada (15.9)

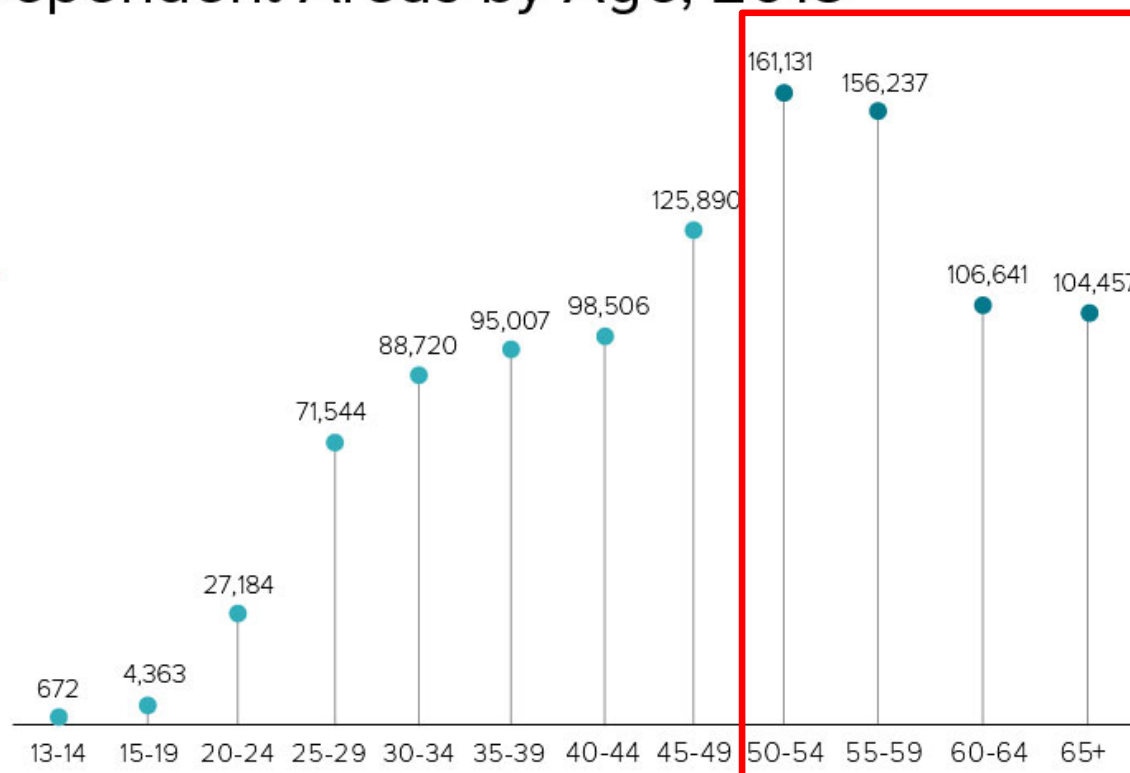
U.S. data: HIV Surveillance Report, 2021 Vol. 34, Table 20 (HIV data for all 50 states)
Data as of 12/31/2022, published 05/2023

Age Adjusted Deaths Among People with HIV Aged 13 and Older United States, 2010-2018



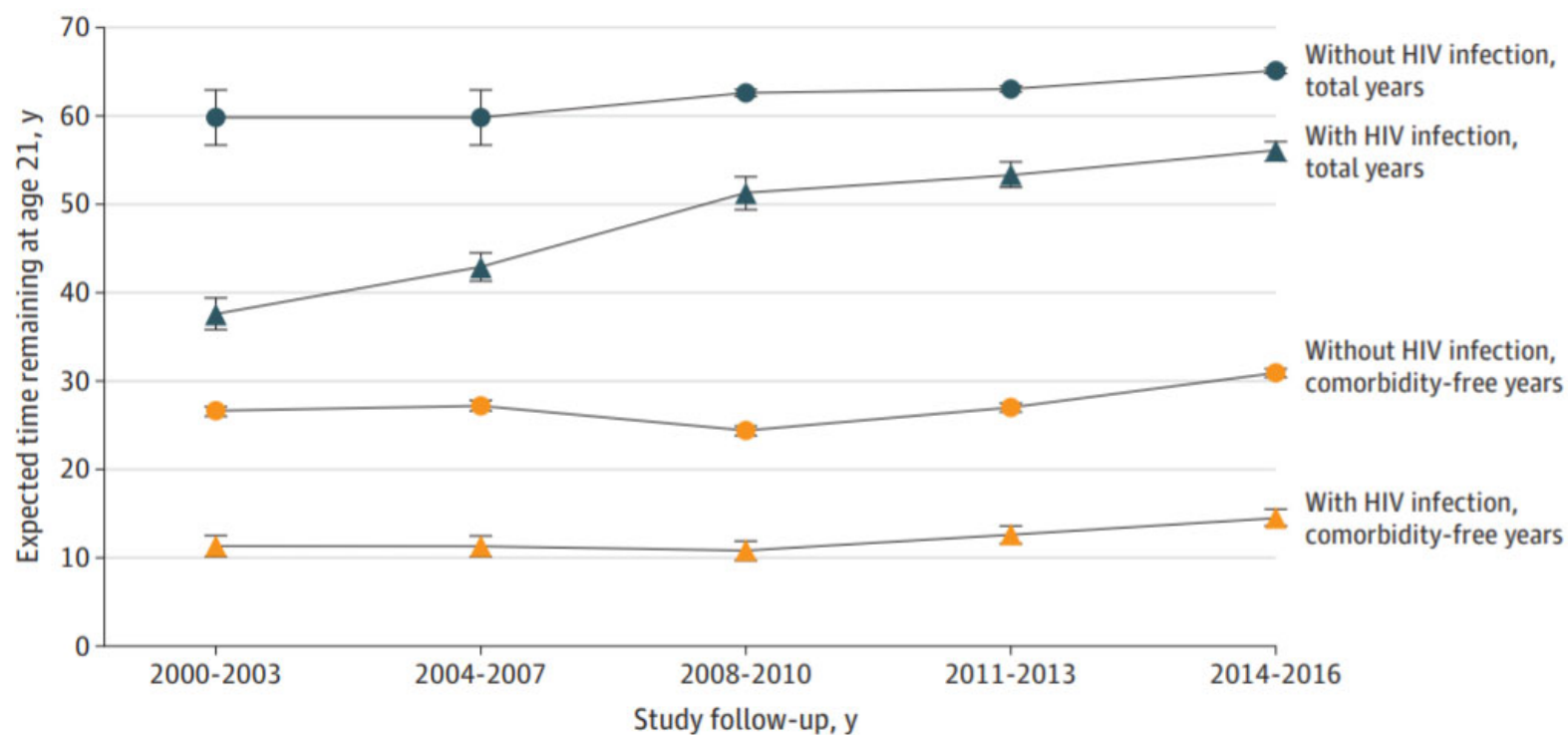
Adults and Adolescents with Diagnosed HIV in the US and Dependent Areas by Age, 2018

Over half of people with
diagnosed HIV were aged
50 and older.



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

Overall and Comorbidity-Free Life Expectancy at Age 21 Years for Individuals With and Without HIV Infection, Kaiser Permanente, 2000-2016



Geriatrics 5 M Model

	Components	Interventions
Mind	Cognition, depression, mood	Eval and treat mood disorders, polypharmacy that contributes to cognitive decline. Physical activity; mentally stimulating activities. Ensure safety
Mobility	Gait/balance, falls	Physical activity. Fall intervention programs. PT/OT
Medications	Polypharmacy, drug-drug interactions	Reduce polypharmacy. Identify adverse drug effects
Multicomplexity	Consider comorbidities within social circumstances and limitations	Consider highest priority screening and treatment guidelines. Avoid polypharmacy.
Matters most to me	Individual's own health outcome goals and care preferences	Coordinate advance care planning. Manage goals of care. Risk/benefit discussions

Summary

1. Globally, HIV incidence and deaths are declining
2. Black and Latino people are disproportionately affected by HIV in the US
3. The population of people with HIV is aging
4. Multi-morbidity and polypharmacy is common in older people with HIV

The screenshot shows the HIV Drug Interactions website. At the top, there is a purple header with the site logo, the University of Liverpool logo, and a language dropdown menu. Below the header is a navigation bar with links: About Us, Interaction Checkers, Prescribing Resources, Videos, Site News, Contact Us, and Support Us. A blue banner below the navigation bar states: "Interactions with Lenacapavir (Sunlenca®) now available - [click here](#) for more details". Below the banner, there is a green text link: "Looking for interactions with COVID-19 therapies, including Paxlovid? [Click here for covid19-druginteractions.org](#)". A warning message follows: "If a drug is not listed below it cannot automatically be assumed it is safe to coadminister". The main content area is divided into three columns: HIV Drugs, Co-medications, and Drug Interactions. Each column has a search bar and a list of drugs. The HIV Drugs column lists: Abacavir (ABC), Albuvirtide (ABT), Atazanavir alone (ATV), Atazanavir/cobicistat (ATV/c), and Atazanavir + ritonavir (ATV/r). The Co-medications column lists: Abacavir (ABC), Abemaciclib, Abiraterone, Acalabrutinib, Acamprosate, and Acarbose. The Drug Interactions column has a checkbox for "Check HIV/ HIV drug interactions" and a message: "Drug Interactions will be displayed here".

HIV Drugs	Co-medications	Drug Interactions
<input type="text" value="Search HIV drugs..."/>	<input type="text" value="Search co-medications..."/>	<input type="checkbox"/> Check HIV/ HIV drug interactions
<p>Selected HIV Drugs will be displayed here.</p> <ul style="list-style-type: none"><input type="checkbox"/> Abacavir (ABC)<input type="checkbox"/> Albuvirtide (ABT)<input type="checkbox"/> Atazanavir alone (ATV)<input type="checkbox"/> Atazanavir/cobicistat (ATV/c)<input type="checkbox"/> Atazanavir + ritonavir (ATV/r)	<p>Selected Co-medications will be displayed here.</p> <ul style="list-style-type: none"><input type="checkbox"/> Abacavir (ABC)<input type="checkbox"/> Abemaciclib<input type="checkbox"/> Abiraterone<input type="checkbox"/> Acalabrutinib<input type="checkbox"/> Acamprosate<input type="checkbox"/> Acarbose	<p>Drug Interactions will be displayed here</p>

<https://www.hiv-druginteractions.org/checker>

What is routine, opt out screening for HIV?

- Performing an HIV test for all members of a specific population regardless of perceived risks or symptoms suggestive of HIV infection
 - CDC recommendation – all people aged 13-64
 - USPSTF – all people aged 15 to 65
- Patients are notified testing will be done and can elect to refuse*



*Florida Statute 381.004

Who can benefit from more frequent testing?

- People who inject drugs and their sex partners
- People who exchange sex for money or drugs
- Sex partners of people with HIV
- People who have had more than one sex partner since their most recent test
- Partners of people who have more than one sex partner since their most recent test

KNOW YOUR STATUS

Knowing your HIV status helps you make **decisions to prevent** getting or transmitting HIV.



Find an HIV testing site near you:
[Locator.HIV.gov](https://locator.hiv.gov)

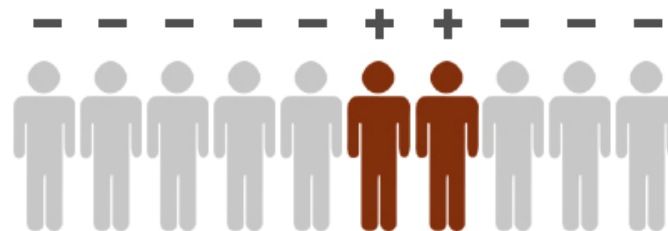


CDC. MMWR 2006;55(RR14;1-17)

Who Else Needs HIV Testing?

- People seeking treatment for hepatitis, tuberculosis, or a sexually transmitted infection
- Pregnant people (Fla. Admin. Code R. 64D-3.042)
 - At entry into care
 - Repeat in third trimester, ideally < 36 weeks gestation
 - Rapid testing at time of delivery if indicated

CDC. MMWR 2006;55(RR14;1-17)



What if a patient has concerns about undergoing an HIV Test?

**No matter
who you are,
an HIV test is
for you.**

Ask your health care provider for an HIV test today.
Know for sure. Get tested.

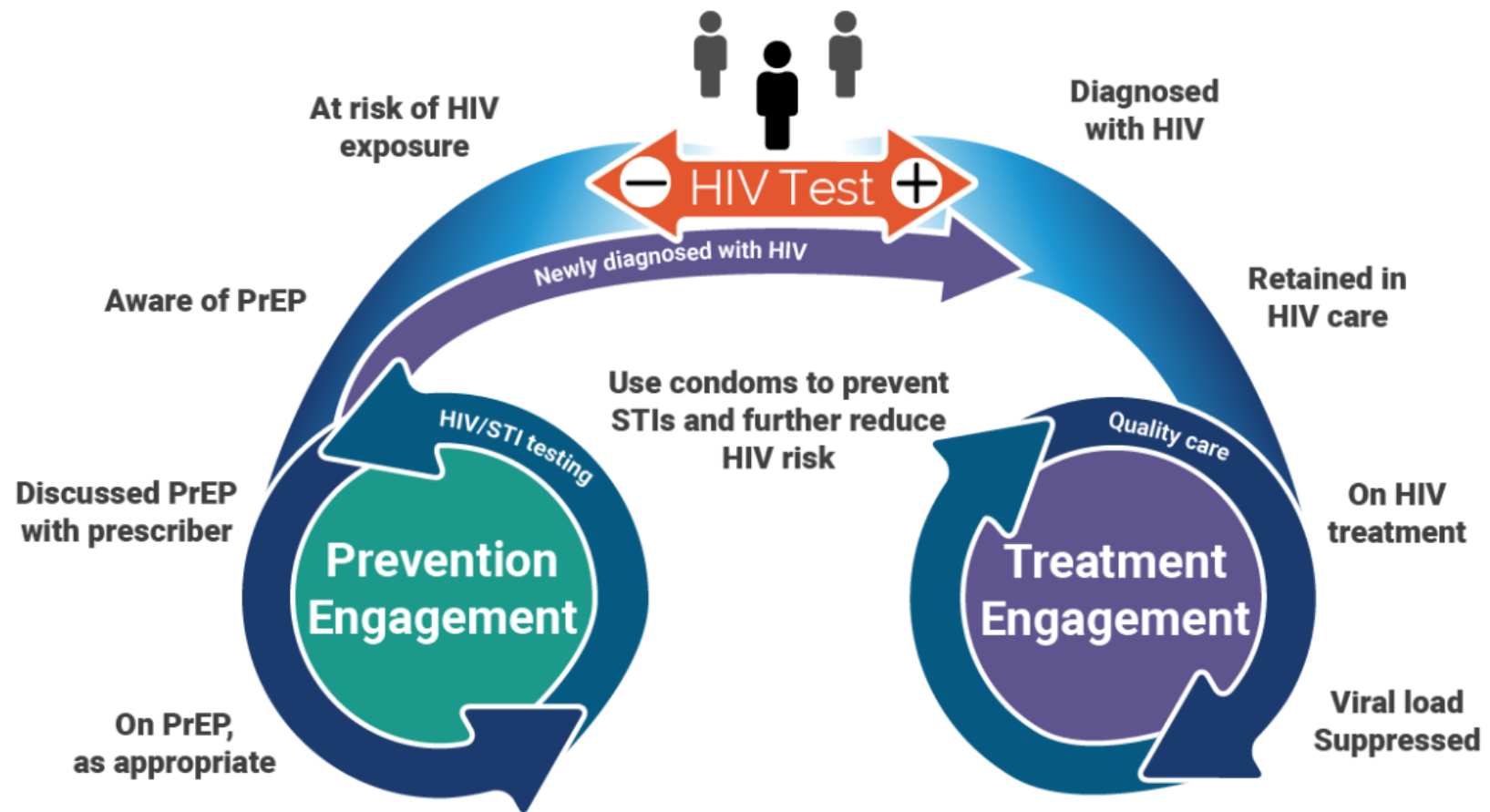
More information:
www.cdc.gov/hiv
800-CDC-INFO (800-232-4636)

- Listen and respond to the patient's questions and concerns
- Provide informational materials
- Emphasize that HIV screening is considered routine for all patients aged 13-64. However, even if they had blood testing previously, they can't assume an HIV test was done
- If they decline now, ask again at a future visit



HIV SCREENING. STANDARD CARE.™

HIV Status-Neutral Service Delivery Model

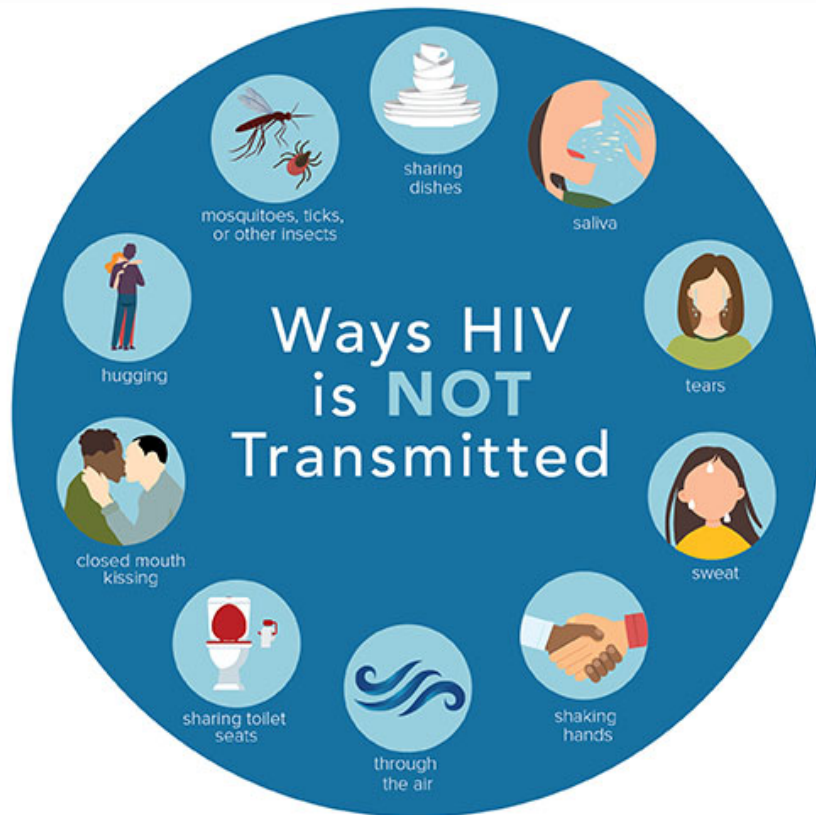


What if the HIV test is negative?

1. Face to face notification of a negative test result is not required
2. Is this patient at risk of HIV acquisition?
 - Counsel on risk reduction strategies
 - Provide condoms
 - Refer to needle exchange program if appropriate and available
 - Advise periodic retesting
 - PrEP evaluation and offer
 - Educate regarding availability of HIV Post-exposure prophylaxis (PEP)

What should happen if the test is positive?

1. Communicate results with empathy, confidentially, and respect through **personal contact**
2. Provide patient-centered counseling
 - Actively listen
 - Assess safety and support system
 - Discuss that HIV is a manageable disease
 - Discuss HIV risk reduction strategies
 - Discuss ways to handle the emotional consequences of a positive result
3. Help patients link to clinical care, counseling, support and prevention services – linkage assistance and anonymous partner notification is available through the Florida Department of Health



HIV Can Be Transmitted By



Sexual Contact



Sharing Needles to Inject Drugs



Mother to Baby during pregnancy, birth, or breastfeeding

CDC.gov. HIV 101. January 2018.

<https://www.cdc.gov/hiv/basics/hiv-transmission/not-transmitted.html#:~:text=Through%20saliva%2C%20tears%2C%20or%20sweat,Through%20the%20air.>

HRSA's Ryan White HIV/AIDS Program BY THE NUMBERS: 2022

Ryan White HIV/AIDS Program (RWHAP)

SERVED
566,846
CLIENTS IN 2022

more than
50%
of people with
diagnosed HIV in
the United States

89.6% of RWHAP clients
receiving HIV
medical care
reached viral suppression*

in 2022 compared to 69.5% in 2010, which
means they cannot sexually transmit HIV to their
partner and can live longer and healthier lives.

6.9% of clients had
TEMPORARY HOUSING



5.2% of clients had
UNSTABLE HOUSING



48.2%
of clients were **aged**
50 years and older



58.6%
of clients lived **at or**
below 100% of the
Federal Poverty Level

74.2%
of clients were from
racial and ethnic
minority groups**



44.5%
of clients were
Black/African American



25.3%
of clients were
Hispanic/Latino

* Viral suppression is based on data for people with HIV who had at least one outpatient ambulatory health services visit and at least one viral load test during the measurement year and whose most recent viral load test result was less than 200 copies/mL.

** 25.8% of clients self-identified as White, and less than 2% self-identified as American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, or a person of multiple races. Hispanics/Latinos can be of any race.

Data sourced from the 2022 Ryan White HIV/AIDS Program Annual Data Report



Summary

1. Everyone aged 13-64 should be tested for HIV at least once in their lifetime
2. People who are pregnant should be tested in each pregnancy
3. Annual testing is indicated for people with multiple sex partners, people who inject drugs, sex partners of people with HIV, and people who exchange sex for material support or other benefits
4. People who are aware they have HIV infection can link to and engage in care to protect their own health and prevent ongoing transmission

Ending the HIV Epidemic: A Plan for America

GOAL:

75%
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in 5 years
and at least
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in 10 years.



Diagnose all people with HIV as early as possible.

Treat the infection rapidly and effectively to achieve sustained viral suppression.

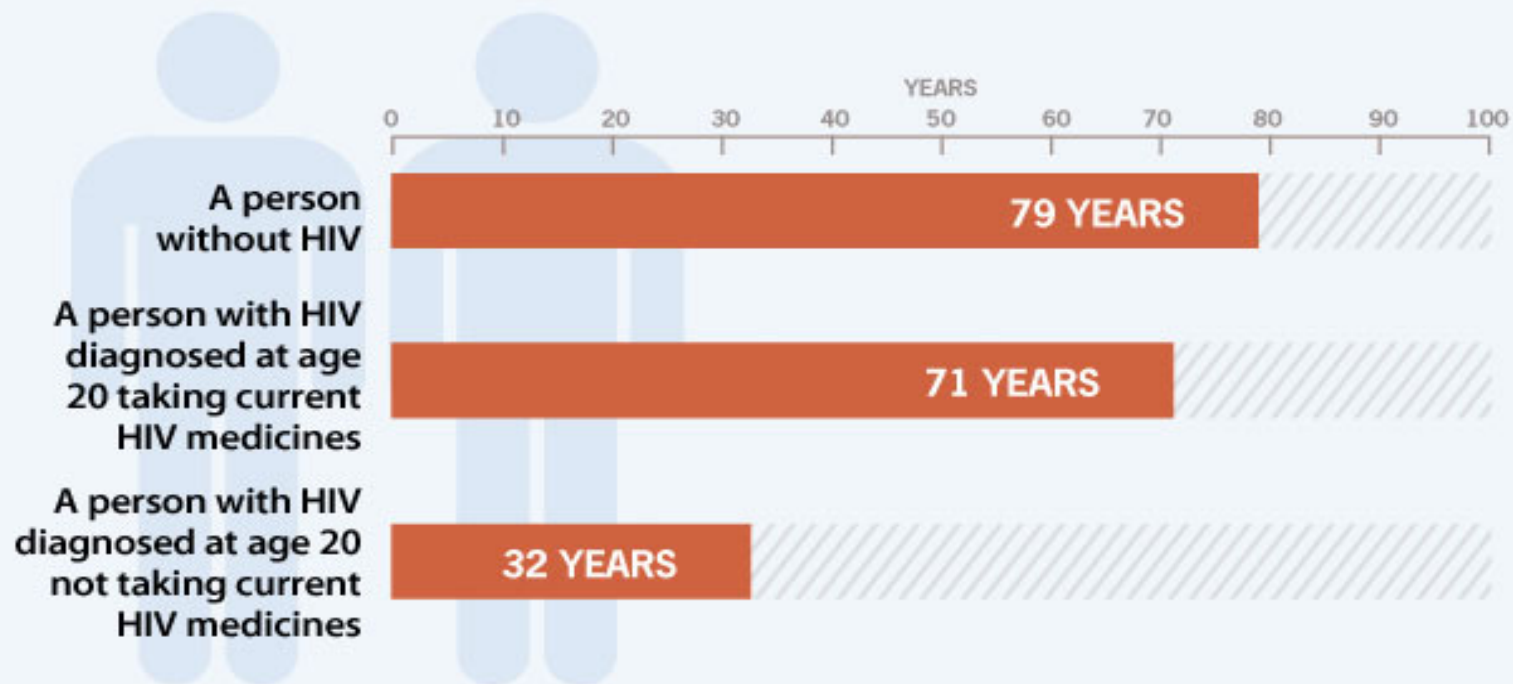


Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).

Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.

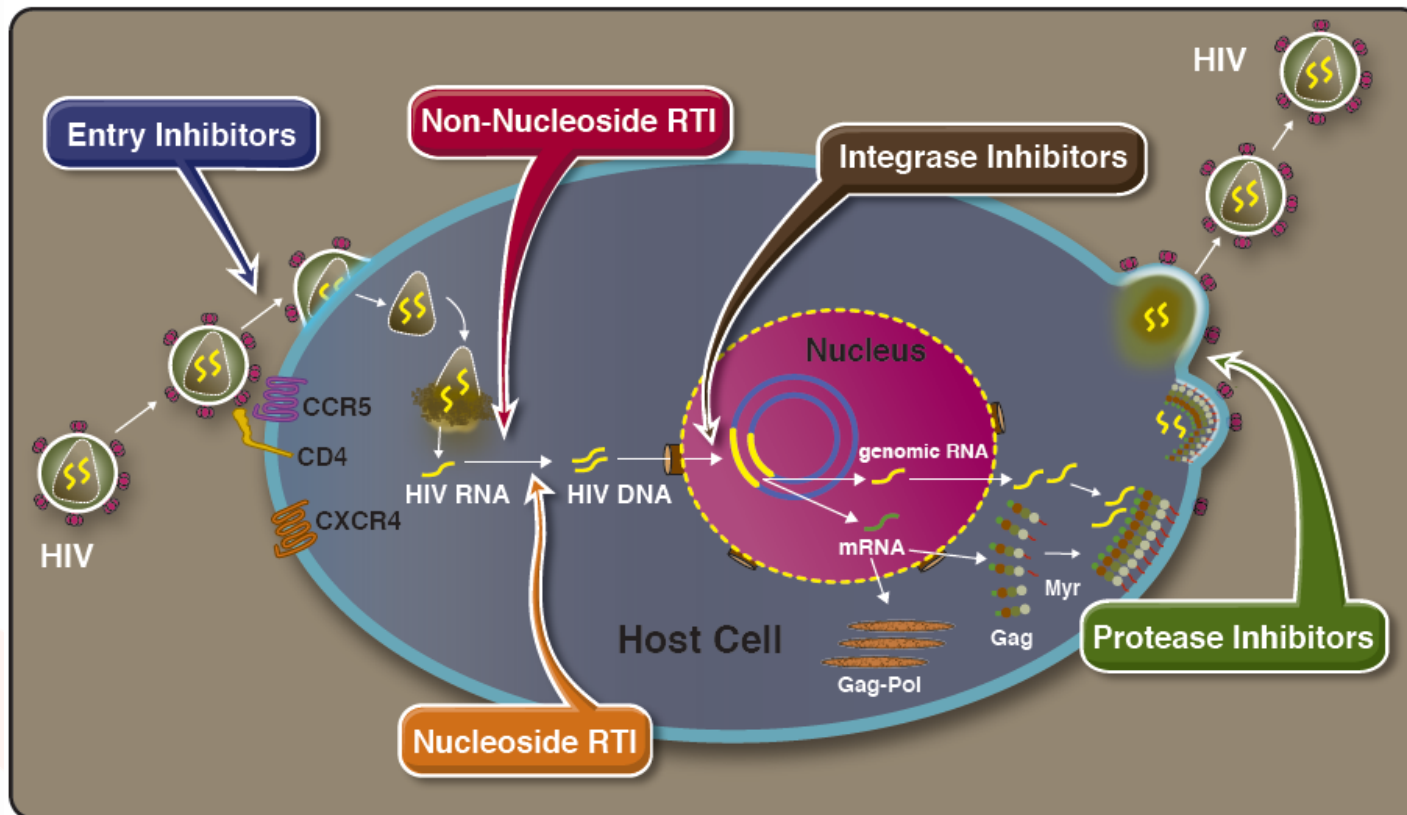


HIV Medicines Help People with HIV Live Longer (Average years of life)



SOURCE: National Vital Statistics Reports, 2012; PLoS One, 2013; and Journal of the American Medical Association, 1993.

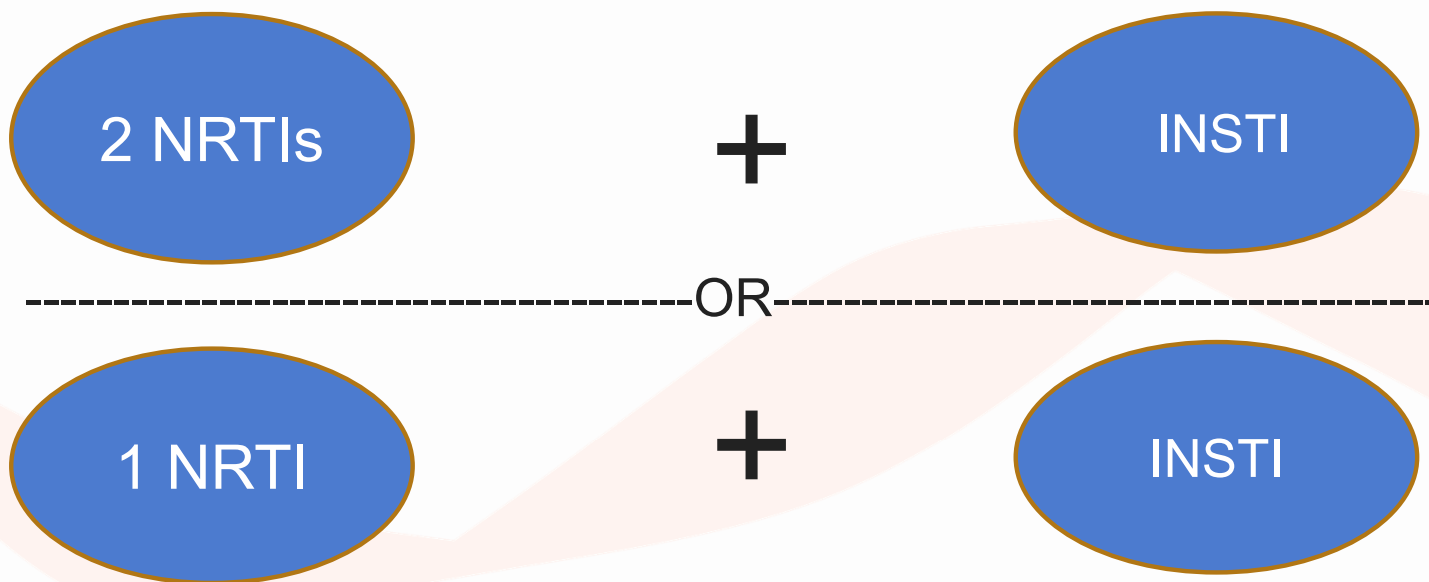
Antiretroviral Mechanism of Action



Recommended Initial Regimens for Most People with HIV (PWH)

Backbone

Anchor Drug



Recommended Initial Regimens for Most PWH

All Rated AI

2 NRTI + INSTI

Biktarvy (BIC/TAF/FTC)

Triumeq (DTG/ABC/3TC) if HLA-B*5701 neg and no HBV infection

Dolutegravir + (TAF or TDF) + (FTC or 3TC) [Truvada or Descovy]

1 NRTI + INSTI

Dovato (DTG/3TC) except if no genotype, HBV infection, VL > 500,000 copies/mL

Florida's Test and Treat Recommended Regimens for Most People with HIV

Regimen	Availability
Bictegravir/emtricitabine/tenofovir alafenamide 50/200/25 mg (Biktarvy), one tablet daily with or without food	Issuance, samples
<u>OR</u>	
Darunavir/cobicistat/emtricitabine/tenofovir alafenamide 800/150/200/10 mg (Symtuza), one tablet daily with food	Issuance, samples, vouchers
<u>OR</u>	
Dolutegravir 50 mg (Tivicay), one tablet daily <u>plus</u> tenofovir alafenamide 25 mg/emtricitabine 200 mg (Descovy), one tablet daily, both taken with or without food	Issuance (samples for Descovy portion only)
<u>OR</u>	
Dolutegravir 50 mg (Tivicay), one tablet daily <u>plus</u> tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg (Truvada), one tablet daily, both taken with or without food	Issuance

https://www.floridahealth.gov/diseases-and-conditions/aids/Clinical_Resources/_documents/TestAndTreatGuidanceOctober2023.pdf

Florida Test and Treat Recommended Regimens for Pregnant People or Those Trying to Conceive

Regimen	Availability
Dolutegravir 50 mg (Tivicay), one tablet daily plus tenofovir alafenamide 25 mg/emtricitabine 200 mg (Descovy), one tablet daily, both taken with or without food	Issuance (samples for Descovy portion only)
<u>OR</u>	
Dolutegravir 50 mg (Tivicay), one tablet daily plus tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg (Truvada), one tablet daily, both taken with or without food	Issuance

https://www.floridahealth.gov/diseases-and-conditions/aids/Clinical_Resources/_documents/TestAndTreatGuidanceOctober2023.pdf

Cabotegravir/Rilpivirine (Cabenuva)

- Long-acting complete injectable treatment regimen administered every 2 months
 - After lead-in of 2 injections 1 month apart
- Switch therapy
 - Suppressed HIV viral load (<50 copies/mL) on a stable antiretroviral regimen
 - No history of treatment failure
 - No known or suspected resistance to either component

Summary

- Antiretroviral therapy is much better tolerated and more effective than in the past
- Most patients today take a single tablet antiretroviral combination regimen with few drug interactions
- There are new long-acting injectable medication options

Ending the Epidemic

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75%
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Diagnose all people with HIV as early as possible.

Treat the infection rapidly and effectively to achieve sustained viral suppression.



Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).

Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.



Treatment of HIV is Prevention

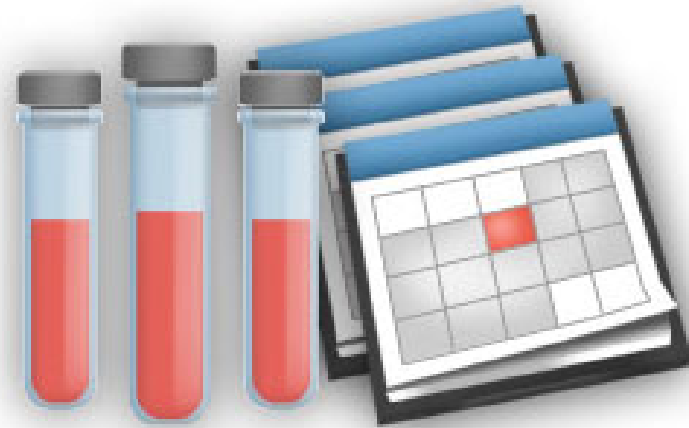
Risk of HIV Transmission With Undetectable Viral Load by Transmission Category

Transmission Category	Risk for People Who Keep an Undetectable Viral Load
Sex (oral, anal, or vaginal)	Effectively no risk
Pregnancy, labor, and delivery	1% or less [†]
Sharing syringes or other drug injection equipment	Unknown, but likely reduced risk
Breastfeeding	Substantially reduces, but does not eliminate risk. Current recommendation in the United States is that mothers with HIV should <i>not</i> breastfeed their infants.

U=U

UNDETECTABLE
=
UNTRANSMITTABLE

Pre-exposure Prophylaxis



PrEP is an HIV prevention method in which people without HIV take antiretroviral therapy to reduce the risk of HIV acquisition

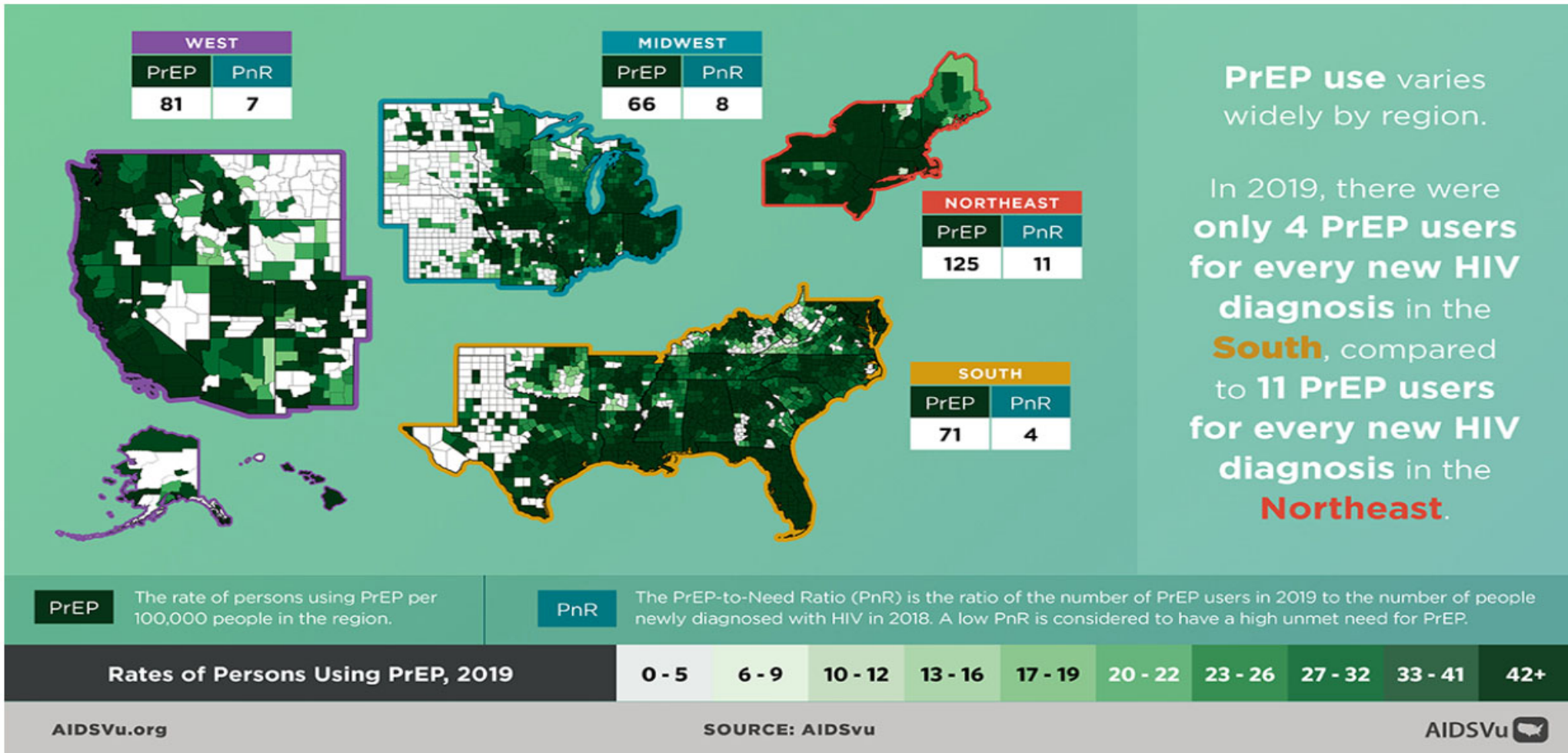
Only people who do not have HIV infection should use PrEP. A negative HIV test is required before starting PREP and regularly thereafter.

Why PrEP?

- Estimated 30,000 new HIV infections each year in the US
 - No cure
 - No effective vaccine yet
- In multiple studies, there is a significantly decreased risk of HIV acquisition in those who took PrEP consistently

Transmission Route	Effectiveness Estimate	Interpretation
Sexual	~99%	Very high levels of adherence to PrEP ensures maximum effectiveness.
Injection drug use	74% – 84%	These estimates are based on tenofovir alone and not necessarily when taken daily. The effectiveness may be greater for the two-drug oral therapy and if used daily.

PrEP to Need Ratio

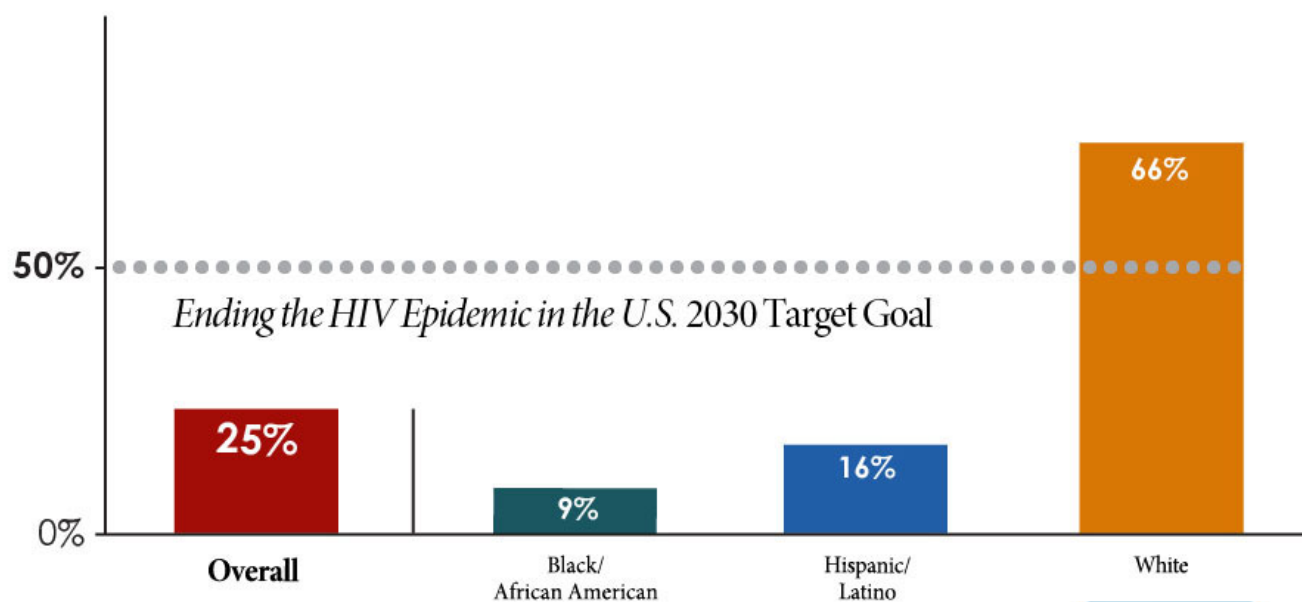


PrEP use varies widely by region.

In 2019, there were **only 4 PrEP users** for every new HIV diagnosis in the **South**, compared to **11 PrEP users** for every new HIV diagnosis in the **Northeast**.

WHILE 25% OF PEOPLE ELIGIBLE FOR PREP WERE PRESCRIBED IT IN 2020, COVERAGE IS NOT EQUAL

PREP COVERAGE IN THE U.S. BY RACE/ETHNICITY, 2020

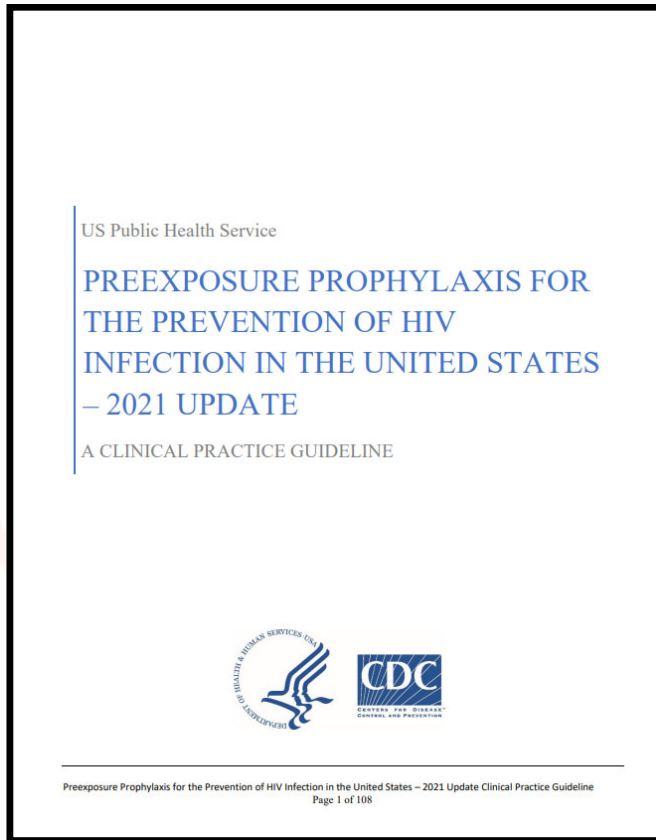


For more information, visit
cdc.gov/nchhstp/newsroom



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

United States PrEP Guideline



Which PrEP Regimen?

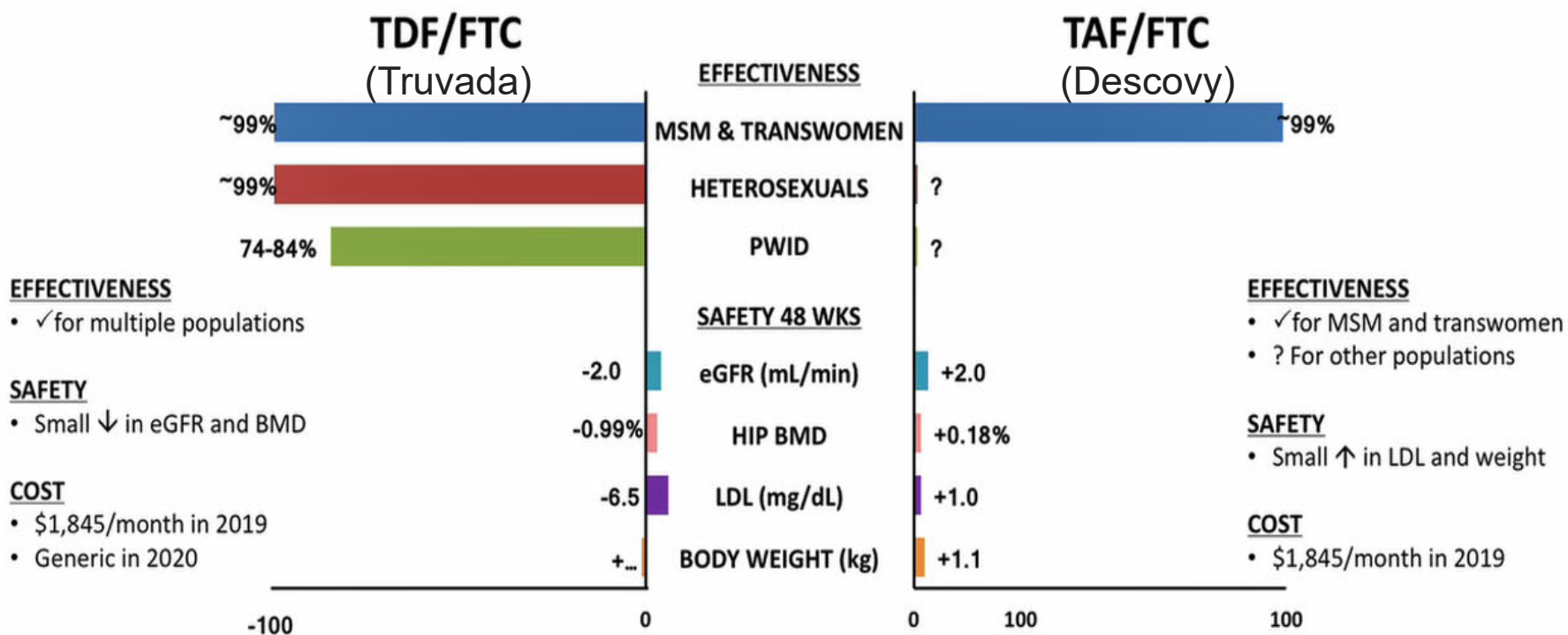
- Consider

- What patient wants
- Sexual behavior
- Ability to take medications
- Likelihood of anticipating sex
- Potential adverse effects

- Current options

1. TDF/FTC (Truvada)
2. TAF/FTC (Descovy)
3. CAB
(Cabotegravir/Apretude)

Which medication should I prescribe for daily oral PrEP?



Cabotegravir for PrEP

Indication	<ul style="list-style-type: none">• Reduce risk of sexually acquired HIV in at risk adults/adolescents weighing at least 35 kg
Dosing	<ul style="list-style-type: none">• 600 mg (3 mL) injection 1 month apart for 2 consecutive months and then every 2 months thereafter• Optional oral lead-in with cabotegravir 30 mg once daily for approximately 1 month can be considered
Formulations	<ul style="list-style-type: none">• Injection: 200 mg/mL solution administered as a 3 mL IM gluteal injection (600 mg daily)• Oral tablet: 30 mg tablet once daily.
Food Requirement	<ul style="list-style-type: none">• Take with or without food
Use in Renal Impairment	<ul style="list-style-type: none">• No renal restrictions, if CrCl < 30, increased monitoring for toxicity recommended

PrEP Strategies

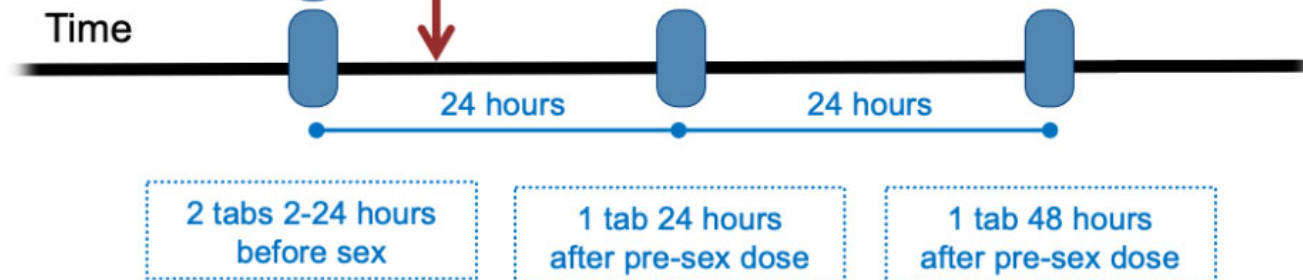
Type	Drugs
Daily Oral PrEP	TDF/FTC or TAF/FTC
On Demand Intermittent PrEP (2-1-1)	TDF/FTC
Long-acting Injectable	Cabotegravir

On-Demand (2-1-1) Oral HIV PrEP

Antiretroviral Medication



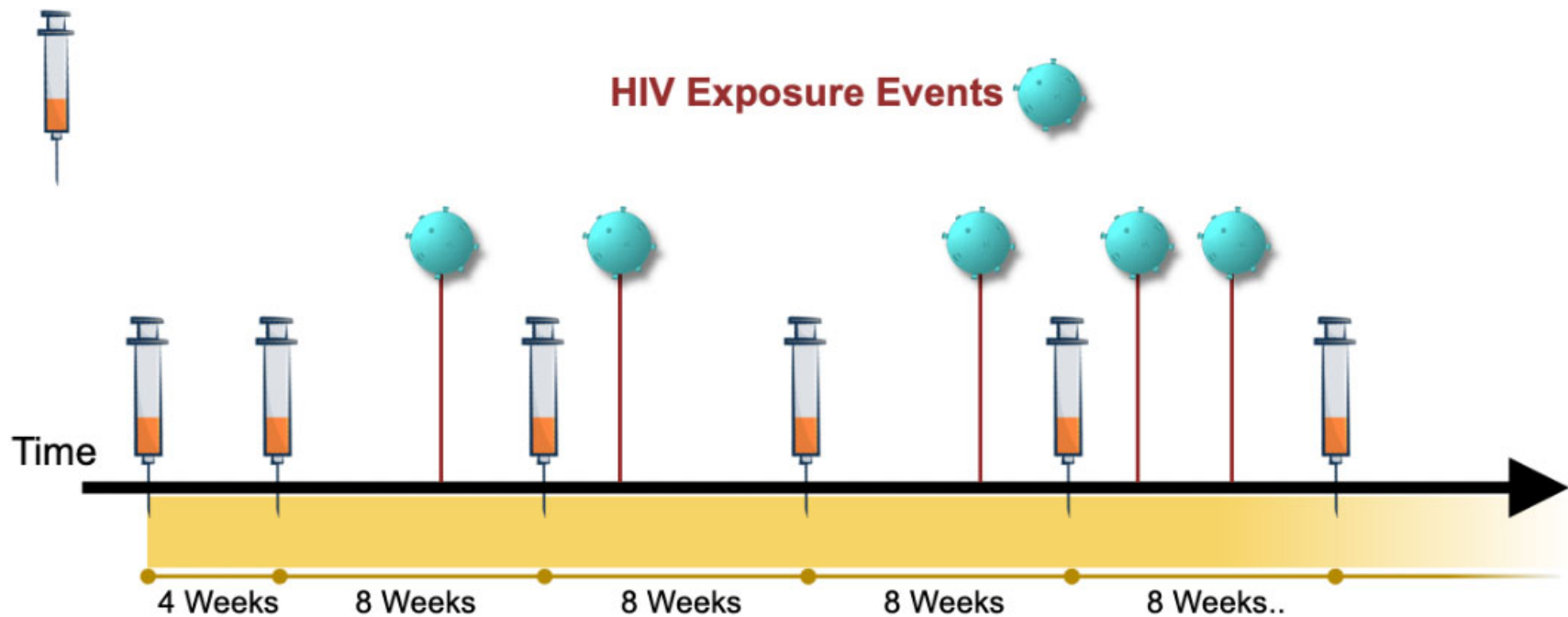
HIV Exposure Event



- No med FDA approved for this method
- Don't use in setting of active HBV infection

Long-Acting Injectable HIV PrEP

Long-Acting Injectable Antiretroviral Medication (Cabotegravir)



Ready, Set, PrEP

- National program that makes PrEP oral medications available at no cost
- To qualify:
 - Negative HIV test
 - Valid prescription
 - No prescription drug coverage

<https://readyssetprep.hiv.gov/>



Summary

- All sexually active adults and adolescents should be informed about PrEP
- There are currently two oral options and one injectable option for PrEP
- PrEP options are not “one-size fits all”

AETC Program National Centers and HIV Curriculum

National Coordinating Resource Center

- Serves as the central web –based repository for AETC Program training and capacity building resources; its website includes a free virtual library with training and technical assistance materials, a program directory, and a calendar of trainings and other events. Learn more: <https://aidsetc.org/>

National Clinical Consultation Center

- Provides free, peer-to-peer, expert advice for health professionals on HIV prevention, care, and treatment and related topics. Learn more: <https://nccc/ucsf.edu>

National HIV Curriculum

- Provides ongoing, up –to-date HIV training and information for health professionals through a free, web –based curriculum; also provides free CME credits, CNE contact hours, CE contact hours, and maintenance of certification credits. Learn more: www.hiv.uw.edu

**THANK YOU
FOR YOUR
ATTENTION**

