

Integrating Routine HIV Screening Into Clinical Practice

A Guide for Health Care Providers
2022



Ending
the
HIV
Epidemic



Overview



- HIV screening and testing in the United States
- Clinical benefits of early HIV diagnosis and treatment
- Advantages of newer, more sensitive HIV tests
- Recommendations for routine HIV screening and diagnostic testing
- Best practices for implementing routine HIV screening in primary care settings
- Review

Learning Objectives

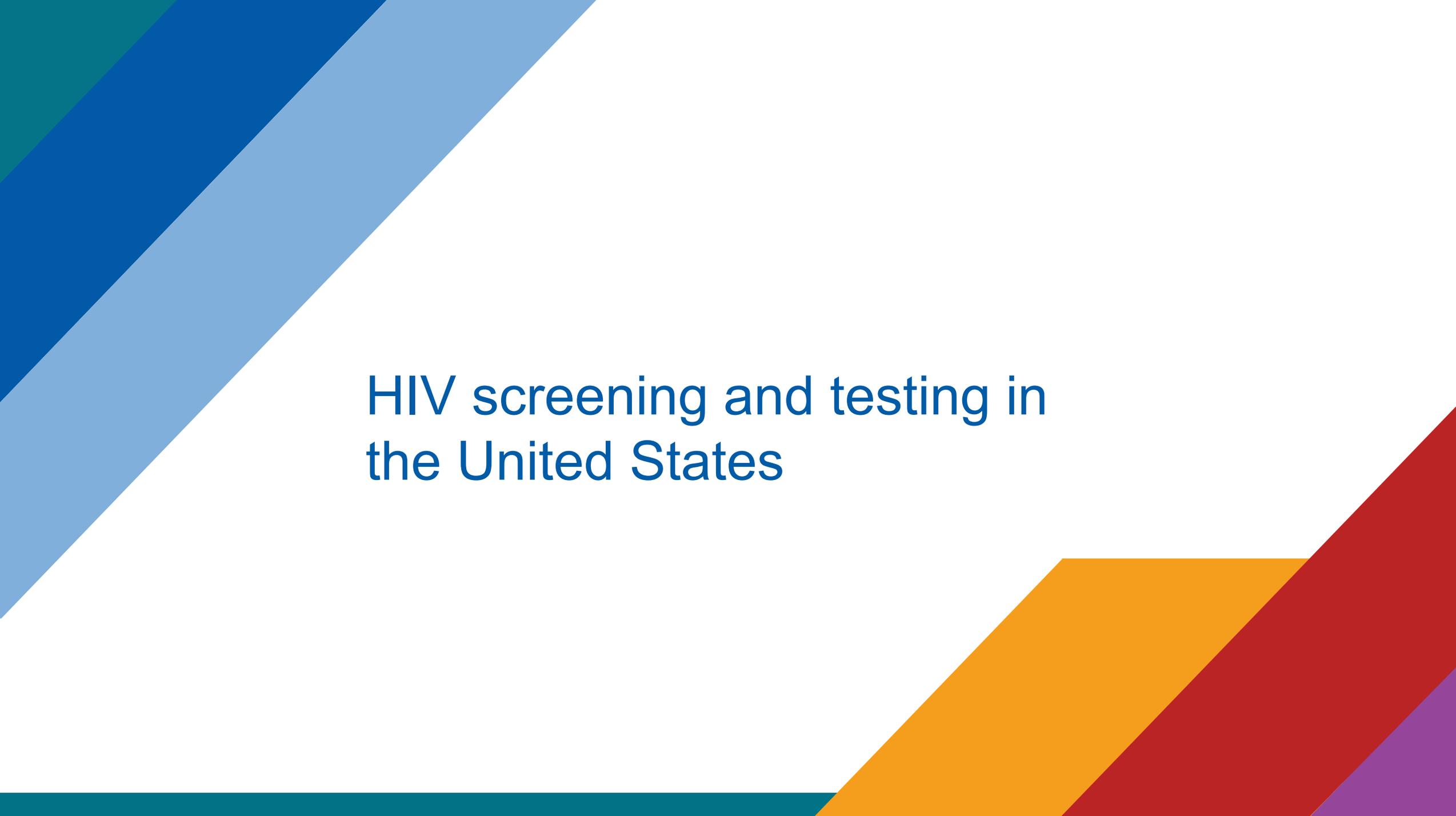
After completing this presentation, health care providers will be able to:

Assess the clinical benefits of routine HIV screening and early treatment

Summarize the Centers for Disease Control and Prevention's (CDC's) recommendations for routine HIV screening and diagnostic testing

Evaluate and select appropriate HIV tests

Apply best practices to implement routine HIV screening and facilitate linkage to care

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HIV screening and testing in the United States

Effect of Diagnosis and Treatment on HIV Transmission

**HIV
Transmissions
in 2016**

15%

Didn't know they
had HIV

=

38%

New transmissions



23%

Knew they had HIV
but weren't in care

=

43%

11%

In care but not virally
suppressed

=

20%

51%

Taking HIV medicine
and virally suppressed

=

0%

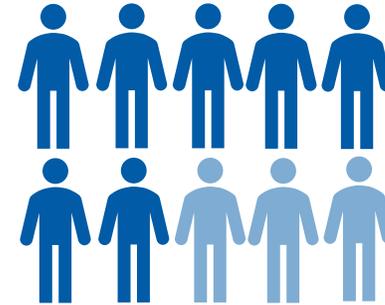
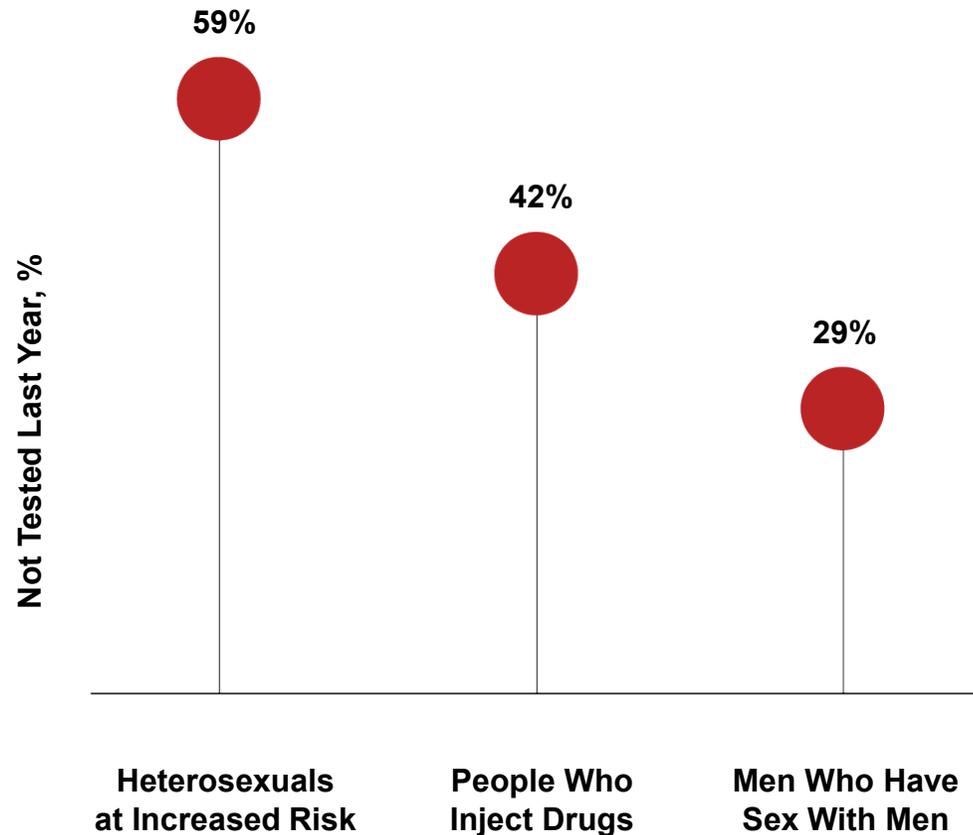
People who did not know they had HIV and those who did know but were not receiving regular care accounted for

~80%

of new HIV transmissions in 2016

Values do not equal 100% because of rounding

Missed Opportunities for HIV Testing



7 out of 10 patients at risk for HIV who were **not tested** for HIV in the past year **saw a primary care provider** during that period

75%

of those patients who saw their primary care provider were **not offered a test**

Health Care Providers Are Crucial to Increasing Rates of HIV Screening



HIV diagnosis through **routine screening** and confirmatory testing is the **critical first step** in the HIV prevention and care continuum^{1,2}

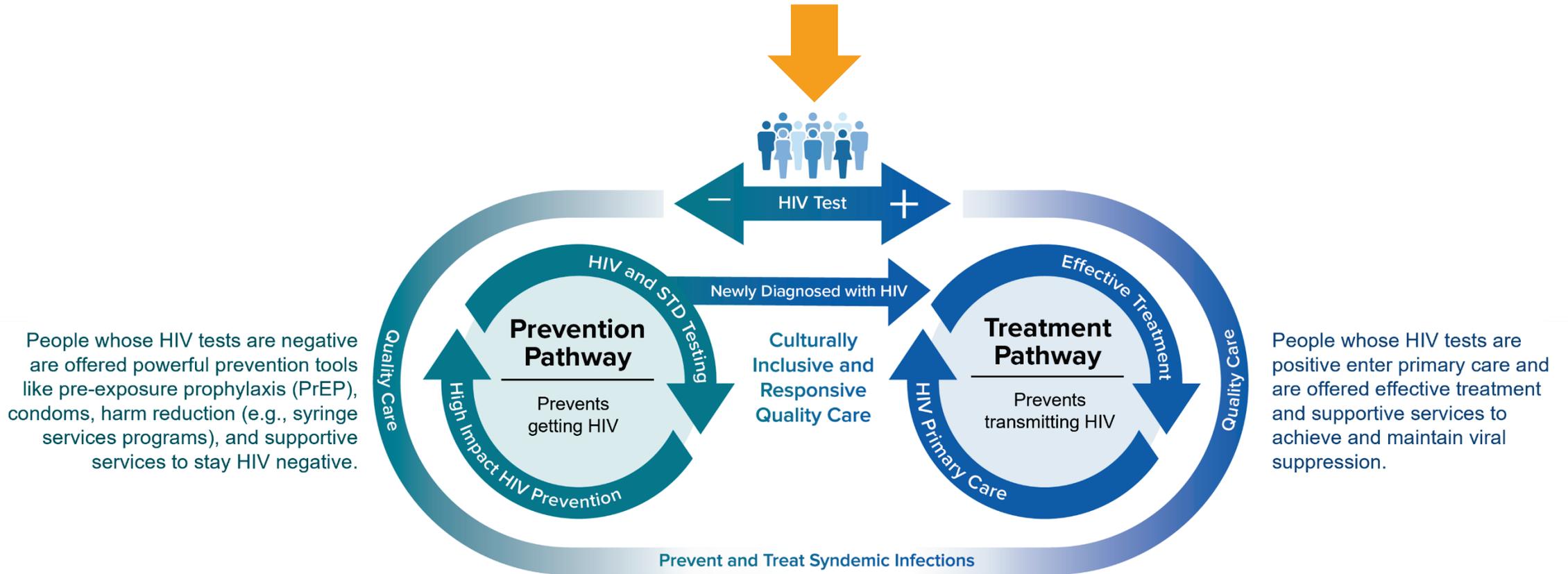
A health care provider's recommendation for HIV testing significantly impacts a patient's decision to test³

¹ Ham DC, Huang Y, Gvetadze R, Peters PJ, Hoover KW. Health care use and HIV testing of males aged 15–39 years in physicians' offices — United States, 2009–2012. *MMWR Morb Mortal Wkly Rep.* 2016;65:621.

² Centers for Disease Control and Prevention. Understanding the HIV care continuum. p. 1. Published June 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/pdf/library/factsheets/cdc-hiv-care-continuum.pdf>

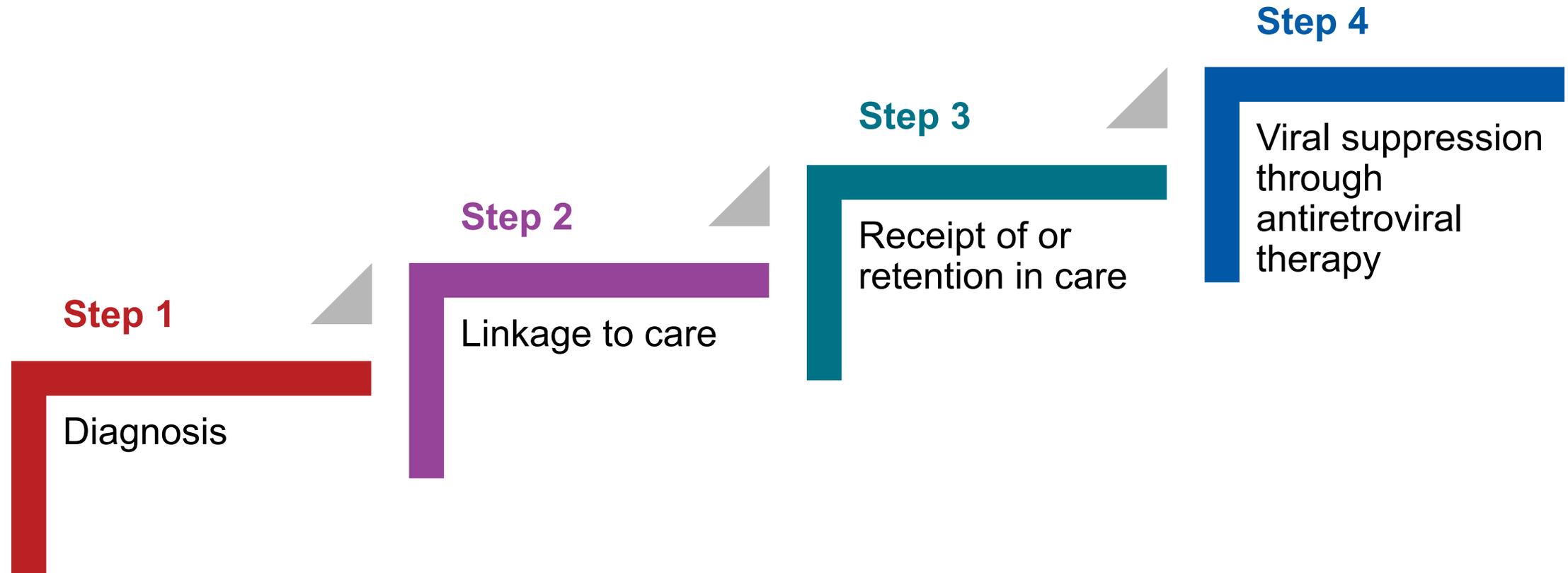
³ Kaiser Family Foundation. 2012 Survey of Americans on HIV/AIDS. Published July 2012. Accessed January 9, 2019. <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8334-f.pdf> 

Status-Neutral HIV Prevention and Care Continuum



Follow CDC guidelines to test people for HIV. Regardless of HIV status, quality care is the foundation of HIV prevention and effective treatment. Both pathways provide people with the tools they need to stay healthy and stop HIV.

HIV Prevention and Care Continuum: Steps to Diagnose and Link Patients to Care to Achieve Viral Suppression



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What are the clinical benefits of early HIV diagnosis and treatment?

Early HIV Diagnosis Allows Early Antiretroviral Therapy (ART) Initiation

Studies have shown that early ART initiation can contribute to

Decreasing the size of the HIV reservoir, when followed by long-term viral suppression¹

Faster achievement of viral suppression⁴

Protection against serious AIDS-related events and serious non-AIDS-related events^{2,3}

Increased likelihood of viral suppression 1 year after diagnosis⁵

¹ Chéret A, Bacchus-Souffan C, Avettand-Fenoël V, et al. Combined ART started during acute HIV infection protects central memory CD4+ T cells and can induce remission. *J Antimicrob Chemother.* 2015;70(7):2117.

² Lundgren JD, Babiker AG, Gordin F, et al. Initiation of antiretroviral therapy in early asymptomatic HIV infection. *N Engl J Med.* 2015;373(9):803.

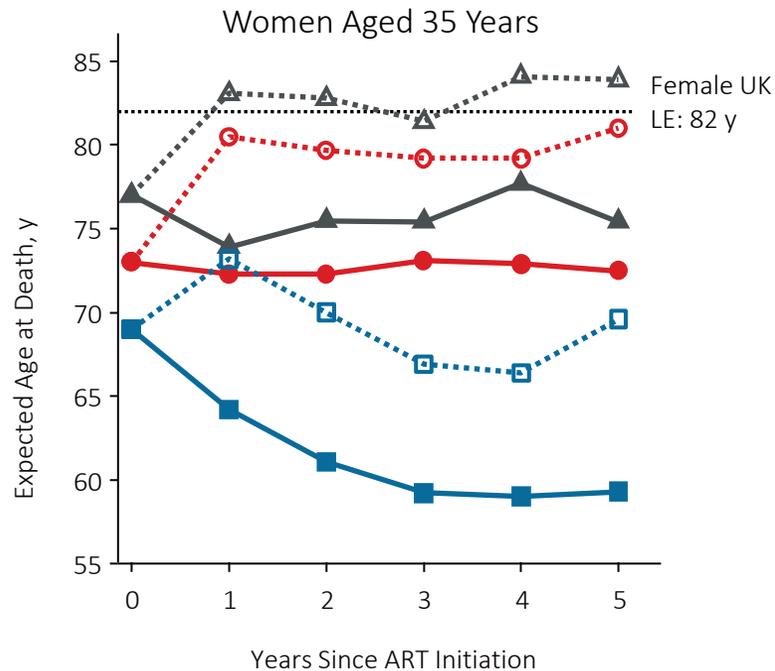
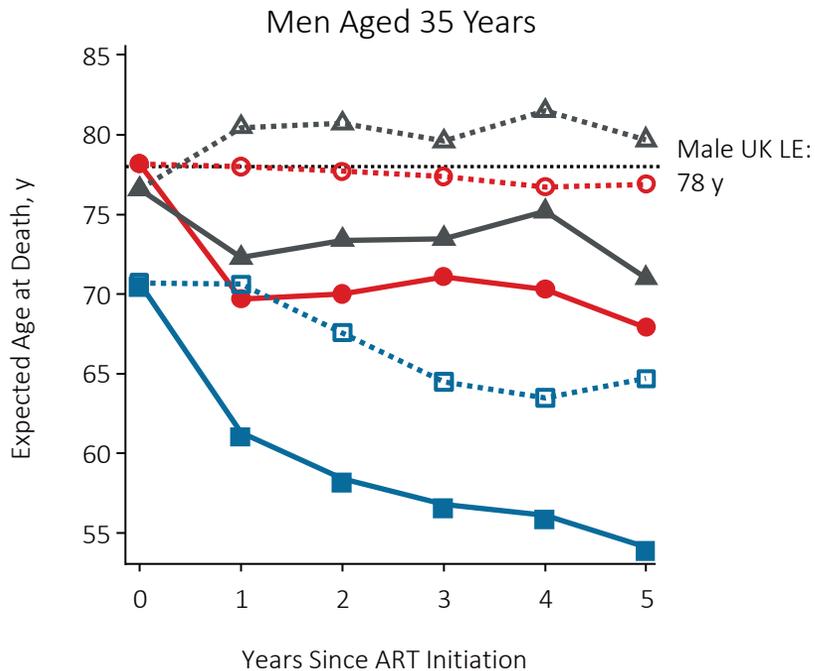
³ Hsu D, Sereti I, Ananworanich J. Serious non-AIDS events: immunopathogenesis and interventional strategies. *AIDS Res Ther.* 2013;10:2, 4.

⁴ Pilcher CD, Ospina-Norvell C, Dasgupta A, et al. The effect of same-day observed initiation of antiretroviral therapy on HIV viral load and treatment outcomes in a U.S. public health setting. *J Acquir Immune Defic Syndr.* 2017;74(1):49.

⁵ Mateo-Urdiales A, Johnson S, Smith R, Nachega JB, Eshun-Wilson I. Rapid initiation of antiretroviral therapy for people living with HIV. *Cochrane Database of Systematic Reviews.* 2019;6:CD012962.

Early Viral Suppression Is Associated With Normal Life Expectancy

VL \leq 400 copies/mL \triangle CD4 \geq 350 cells/mm³ \circ CD4 200–349 cells/mm³ \square CD4 <200 cells/mm³
 VL >400 copies/mL \blacktriangle CD4 \geq 350 cells/mm³ \bullet CD4 200–349 cells/mm³ \blacksquare CD4 <200 cells/mm³



People who achieve viral suppression and attain a CD4 cell count \geq 350 cells/mm³ within 1 year of starting antiretroviral therapy have a normal life expectancy

LE: life expectancy; VL: viral load

Rationale for Routine HIV Screening



Removes the stigma associated with HIV testing



Fosters earlier diagnosis and treatment



Reduces risk of transmission



Is cost-effective

Routine HIV Screening Has Benefits Over Risk-Based Testing



Routine screening helps identify **people with HIV who might be missed** by risk-based screening

Youth aged <20 years

Women

People in rural areas

Heterosexual people unaware of their risk

Members of minority races/ethnicities

Case Study 1



- A man aged 21 years presents with dysuria and penile discharge for the past 3 days
- He reports having had unprotected vaginal intercourse a week earlier with a woman he met at a party
- After complete history and physical exam, you suspect gonococcal urethritis
- Based on CDC HIV screening recommendations, you would like to recommend he be tested for HIV

Case Study 1: Question

Which of the following methods for offering HIV testing would most likely lead to patient acceptance?

A

“I think you have a sexually transmitted disease, also known as an ‘STD.’ It is probably gonorrhea. I recommend HIV testing in addition to testing for other common STDs. Would you like to get tested for HIV today?”

B

“I think you have a sexually transmitted disease, also known as an ‘STD.’ It is probably gonorrhea. I routinely perform the following tests in all patients with your symptoms: chlamydia, gonorrhea, syphilis, and HIV.”

C

I would not offer HIV testing

Case Study 1: Question (cont'd)

Which of the following methods for offering HIV testing would most likely lead to patient acceptance?

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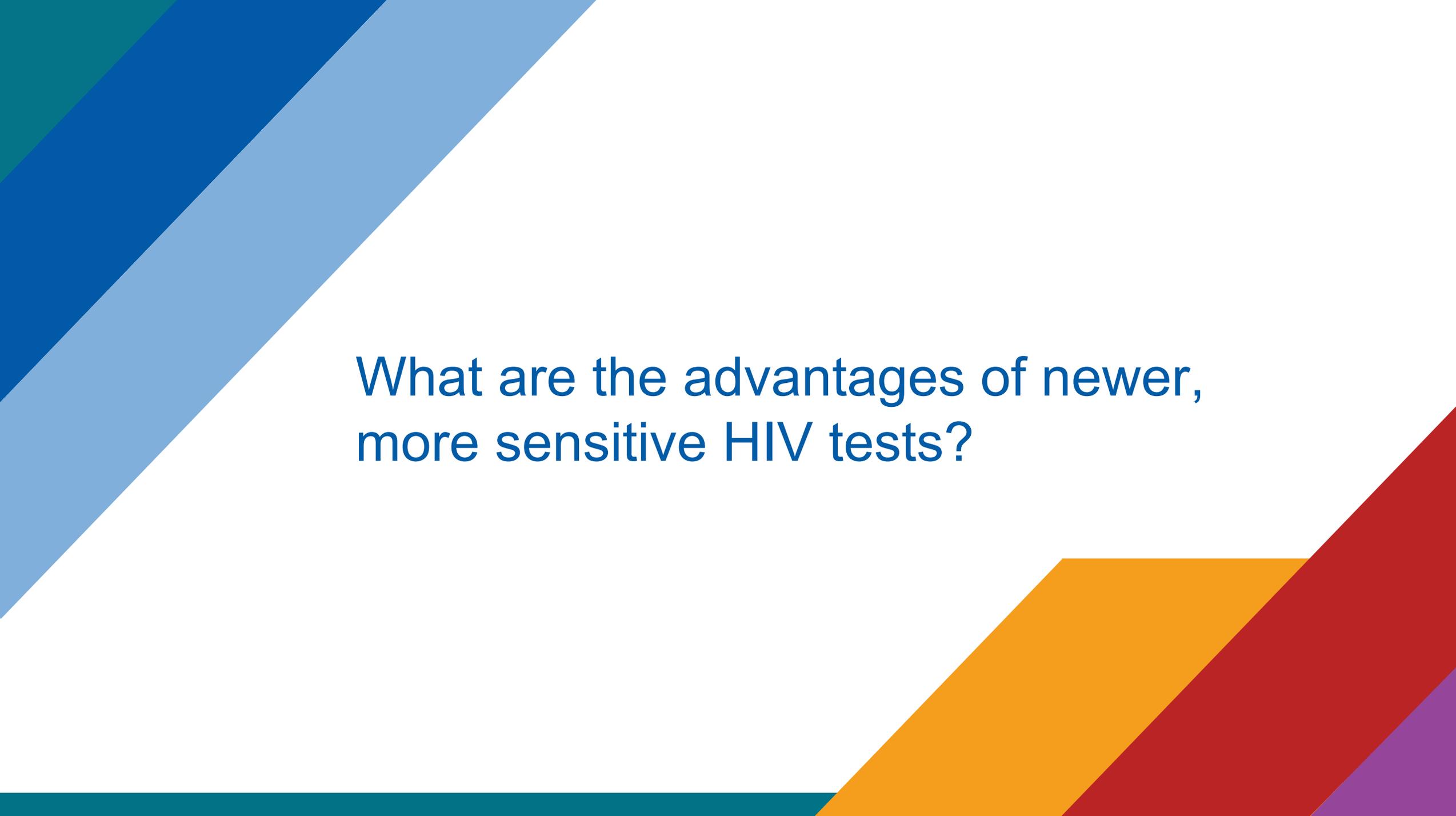
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What are the advantages of newer,
more sensitive HIV tests?

Three Types of HIV Tests Are Available^{1,2}

Antibody Test

- Detects HIV immunoglobulin M (IgM) and immunoglobulin G (IgG) antibodies
- Laboratory-based and rapid/point-of-care versions are US Food and Drug Administration (FDA) approved
- Reactive results require confirmatory testing

Antigen-Antibody Combination Test

- Detects HIV p24 antigen, and HIV IgM and IgG antibodies
- Laboratory-based and rapid/point-of-care versions are FDA approved
- Reactive results require confirmatory testing

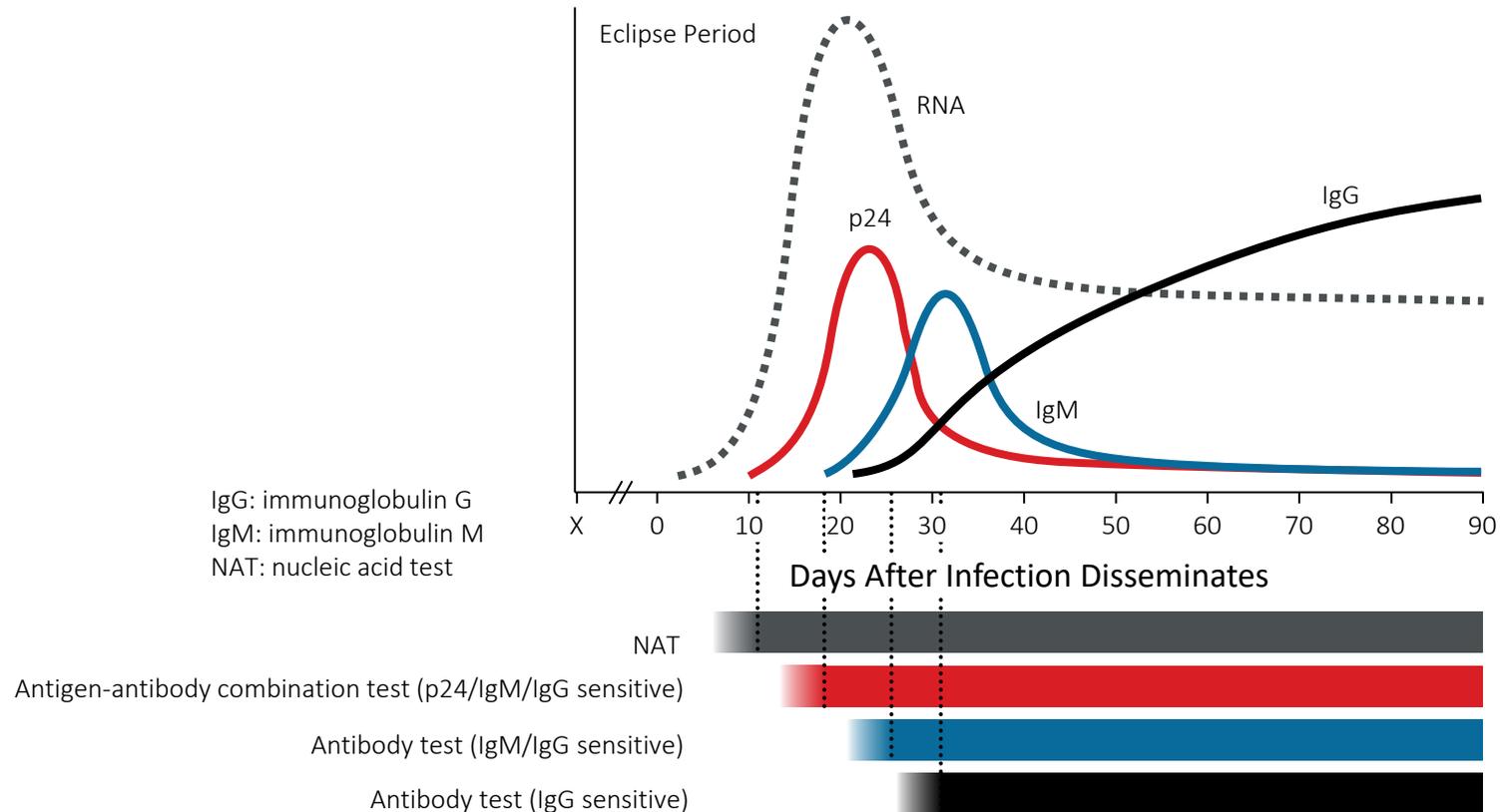
Nucleic Acid Test (NAT)

- Detects HIV RNA
- One laboratory-based NAT is approved by the FDA for HIV diagnosis
- Routinely used for viral load monitoring, when acute HIV is suspected but the antigen-antibody test is negative, and for confirmatory testing

¹ Centers for Disease Control and Prevention, Association of Public Health Laboratories. Laboratory testing for the diagnosis of HIV infection: updated recommendations. p. 17-20. <https://stacks.cdc.gov/view/cdc/23447>

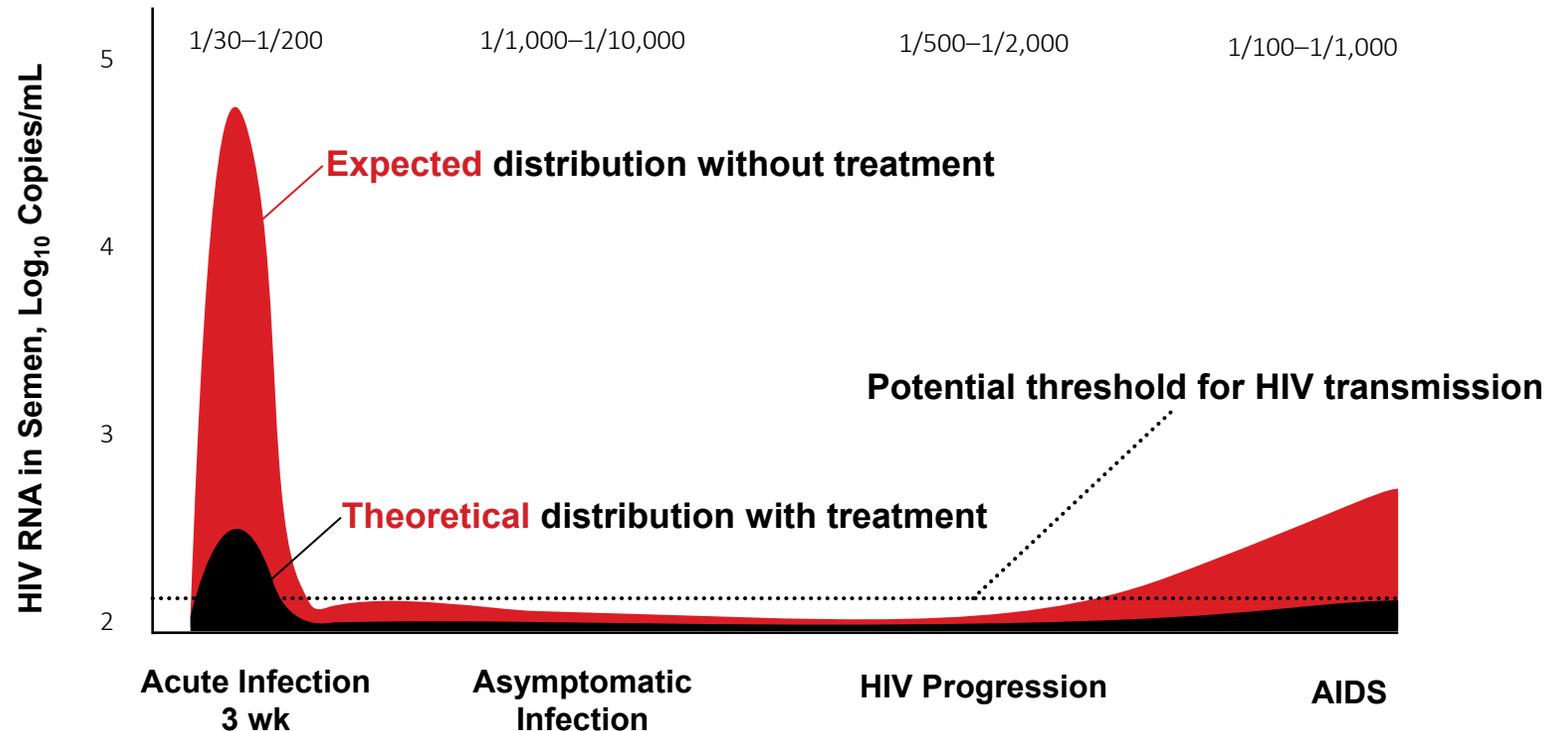
² Spach, DH. HIV diagnostic testing. National HIV curriculum. p. 4-9. <https://www.hiv.uw.edu/go/screening-diagnosis/diagnostic-testing/core-concept/all>

Improved Diagnostic Tests Reduce Test-Negative Window from HIV Infection to Detection



Risk of HIV Transmission Is Highest During Acute Infection^{1,2}

Probability of Male–Female HIV Transmission per Coital Act



¹ Cohen MS, Pilcher CD. Amplified HIV transmission and new approaches to HIV prevention. *J Infect Dis.* 2005;191:1392.

² Centers for Disease Control and Prevention. Evidence of HIV treatment and viral suppression in preventing the sexual transmission of HIV. p. 3. Published December 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/pdf/risk/art/cdc-hiv-art-viral-suppression.pdf>

Signs and Symptoms That Should Prompt a High Level of Suspicion of Acute HIV Infection

- HIV seroconversion is the very early stage of infection during which HIV antibodies develop and become detectable
- Seroconversion often coincides with a syndrome called acute HIV infection, which is frequently, but not always, accompanied by flu-like symptoms^{2,3}
- Acute infection can start a few days after HIV exposure and usually lasts ~14 days³
 - However, it can last only a few days or for several months

Acute HIV Infection: Frequency of Associated Signs and Symptoms¹

Sign or Symptom	Frequency, %
Fever	77
Fatigue	70
Myalgia	70
Headache	61
Night sweats	55
Pharyngitis	49
Gastrointestinal symptoms*	42
Rash	28
Weight loss	22
Arthralgia	20

*e.g., nausea, vomiting, diarrhea

¹ Hoenigl M, Green N, Camacho M, et al. Signs or symptoms of acute HIV infection in a cohort undergoing community-based screening. *Emerg Infect Dis.* 2016;22(3):533. [PubMed abstract](#)

² Centers for Disease Control and Prevention. Patient information sheet – Acute HIV infection. p. 1. Accessed January 8, 2019. https://www.cdc.gov/hiv/pdf/prep_gl_patient_factsheet_acute_hiv_infection_english.pdf

³ Morgado J, Póvoas MI, Cruz C, Teixeira A. A severe manifestation of primary HIV-1 infection in an adolescent. *BMJ Case Rep.* 2014;2014:bcr2014205697.

Case Study 2



- A 46-year-old woman visited a primary care clinic for the first time complaining of a 2-day history of sore throat, fever, and rash
- She had no significant medical history and was not taking any medications
- On physical exam, her temperature was 100.4°F; she had a generalized erythematous maculopapular rash and red, inflamed throat
- She was diagnosed with “viral illness” and advised to take acetaminophen to reduce the fever and return if symptoms persisted after 7–10 days

Case Study 2 (cont'd)



- The patient's symptoms resolved, so she didn't initially return
- 8 weeks later, however, she comes back with news that one of her male friends "with benefits" told her he was recently diagnosed with HIV
- She now reveals that she has had unprotected sex with several partners over the past 6 months
- An antigen-antibody combination test is ordered but gives a negative result
- Because the patient's symptoms were consistent with acute HIV infection, and she was likely exposed to HIV, a nucleic acid test is ordered and comes back positive

Case Study 2: Question

The patient's initial presentation is consistent with acute HIV seroconversion.
Which of the following is *false*?

A

Seroconversion is the interval during which antibodies are first produced and rise to detectable levels

B

Seroconversion is often, although not always, accompanied by flu-like symptoms

C

Symptoms usually last about 14 days

D

People are less infectious during acute vs chronic infection

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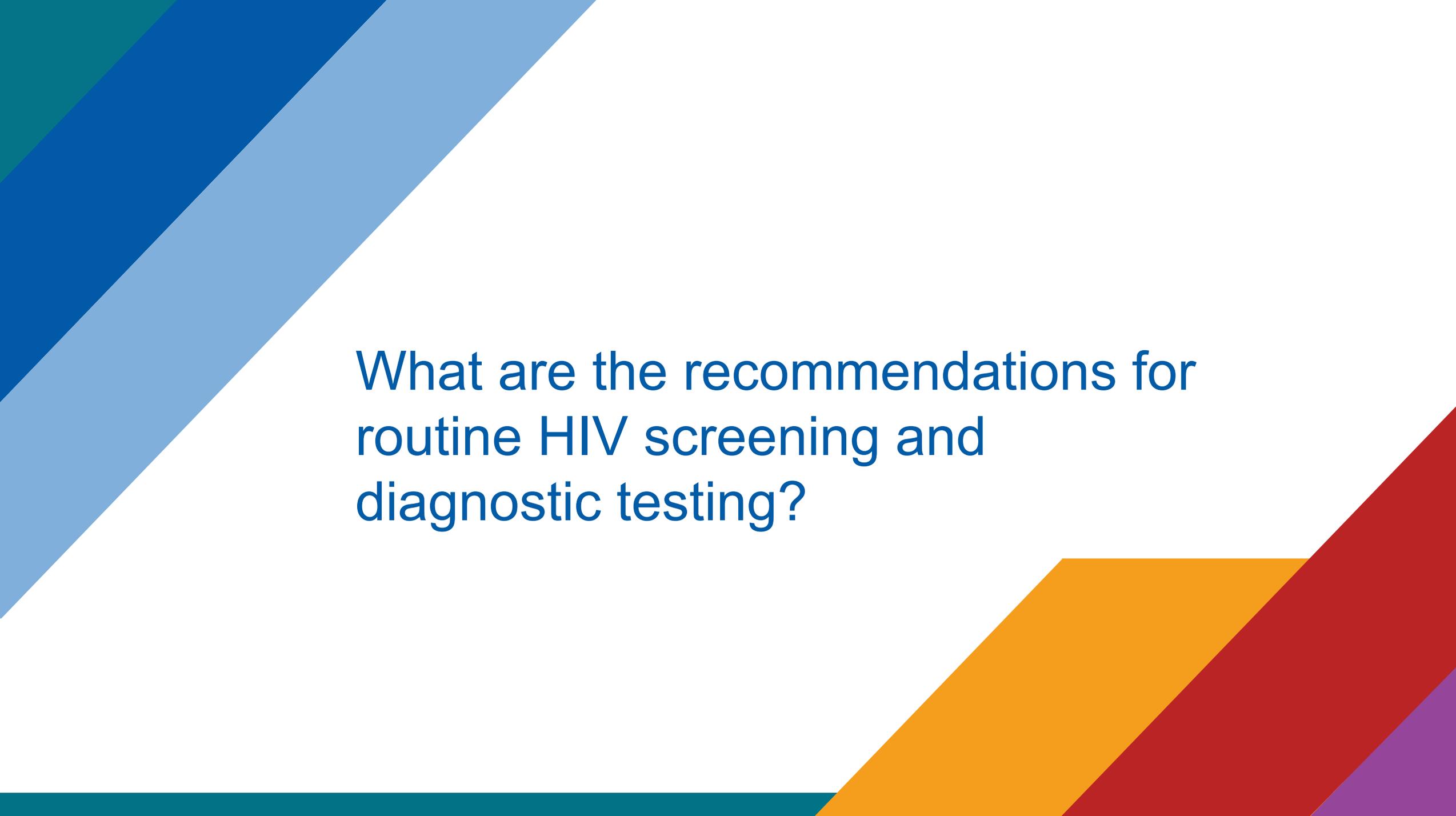
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C

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D

People are less infectious during acute vs chronic infection



What are the recommendations for routine HIV screening and diagnostic testing?

HIV Infection Meets All Generally Accepted Criteria That Justify Screening

- 1 Serious health disorder that can be detected before symptoms develop
- 2 Detectable using reliable, inexpensive, acceptable screening tests
- 3 People with HIV can gain years of life if they start treatment early before symptoms develop
- 4 Screening has little to no cost in relation to expected benefits



CDC Recommendations for Routine HIV Screening

When should routine HIV screening be performed?

Ages 13–64

Regardless of risk, in a health care setting in which the prevalence of undiagnosed HIV is $\geq 0.1\%$

Tuberculosis

In all patients initiating treatment for tuberculosis

STIs

In all patients seeking treatment for sexually transmitted infections (STIs) each time they seek such treatment

New Relationship

In patients and their prospective sex partners before they initiate a new sexual relationship

Pregnancy

As part of the routine panel of prenatal screening tests for all pregnant people

CDC Recommendations for Repeat Testing

Repeat HIV testing should be performed for patients at risk at least annually:^{1,2}

- People who inject drugs and their sex partners
- People who exchange sex for money or drugs
- Sex partners of people with HIV
- Men who have sex with men*
- Heterosexual people who themselves or whose sex partners have had ≥ 1 sex partner since their most recent HIV test

*More frequent testing (every 3–6 months) can be considered for asymptomatic, sexually active men who have sex with men, based on their individual risk factors, local HIV epidemiology, and local policies²

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² DiNenno EA, Prejean J, Irwin K, et al. Recommendations for HIV screening of gay, bisexual, and other men who have sex with men — United States, 2017. *MMWR Morb Mortal Wkly Rep.* 2017;66:831. <https://www.cdc.gov/mmwr/volumes/66/wr/mm6631a3.htm>

CDC Recommendations for Opt-Out Testing



- Patients are notified that an HIV test is a routine part of the encounter
- There is no requirement for formalized counseling or separate written informed consent
- Patients must specifically decline testing, either orally or in writing, to be exempt from having an HIV test

CDC's Revised Recommendations for HIV Testing in Patients with Suspected Acute HIV^{1,2}

All patients with signs or symptoms consistent with **HIV infection**, or an **opportunistic illness** characteristic of AIDS, should be tested for HIV

Health care providers should maintain a **high level of suspicion** for acute HIV infection in all patients who have a **compatible clinical syndrome** and who report recent **high-risk behavior**

When **acute retroviral infection** is a possibility, and an antigen-antibody combination test gives a negative result, an **RNA test (nucleic acid test)** should be performed

People with HIV should receive or be referred for clinical care promptly

Refer to US Department of Health and Human Services guidelines for the use of antiretroviral therapy:

clinicalinfo.hiv.gov/sites/default/files/guidelines/archive/AdultandAdolescentGL_2021_08_16.pdf

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² US Department of Health and Human Services. Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Updated 2021. Accessed March 31, 2022. https://clinicalinfo.hiv.gov/sites/default/files/guidelines/archive/AdultandAdolescentGL_2021_08_16.pdf

HIV Screening Is Standard Care

CDC recommends **routine HIV screening** as part of standard primary care¹

CDC's recommended approach involves two steps²:

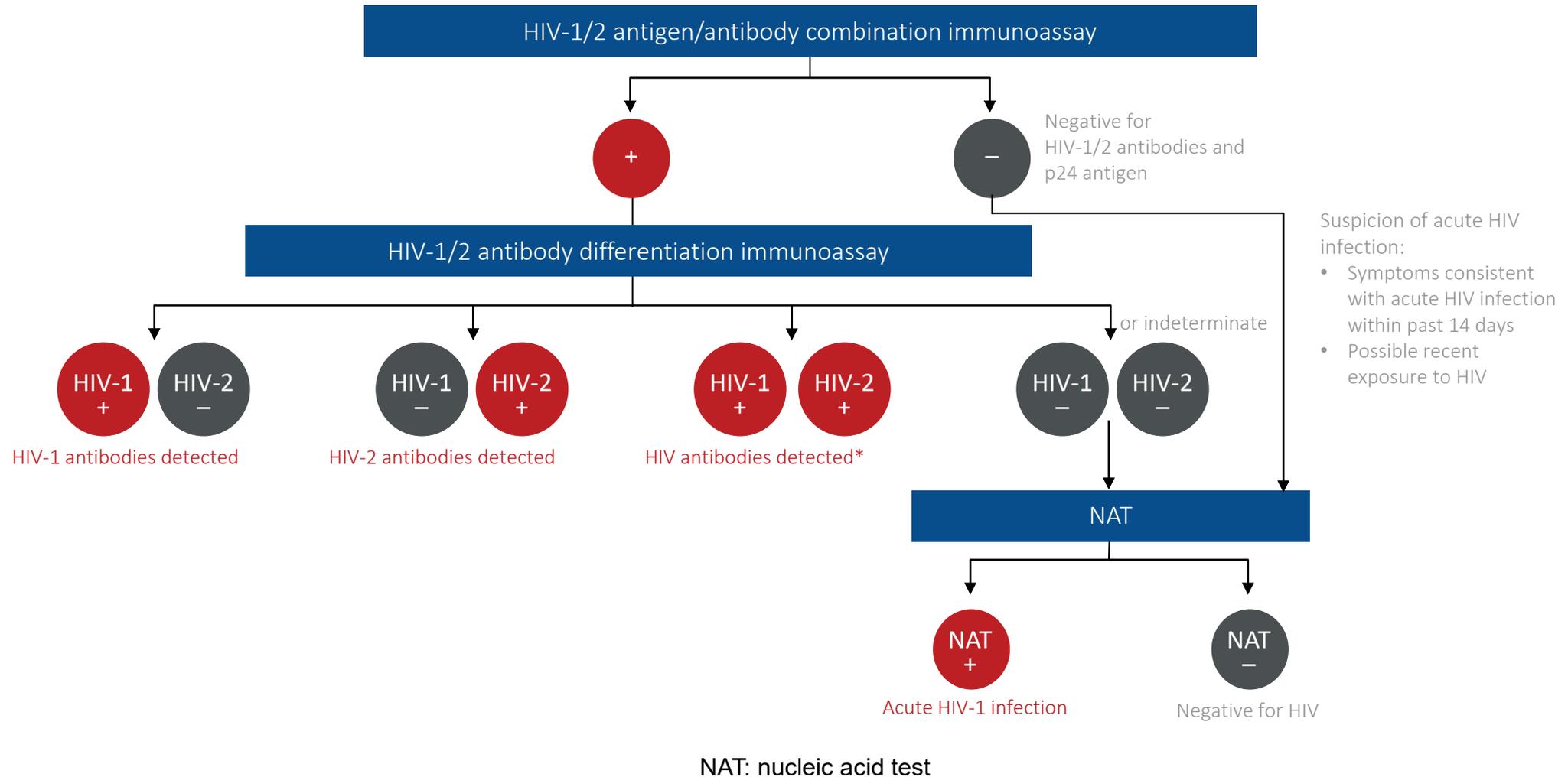
1 Initial screening using an antigen-antibody test

2 Follow-up testing of reactive samples with an HIV-1/2 antibody differentiation assay and/or nucleic acid test to confirm the diagnosis

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² Centers for Disease Control and Prevention, Association of Public Health Laboratories. Laboratory testing for the diagnosis of HIV infection: Updated recommendations. p. 19-20. Published June 27, 2014. Accessed September 17, 2019. <https://stacks.cdc.gov/view/cdc/23447>

CDC Recommendations for Laboratory HIV Testing

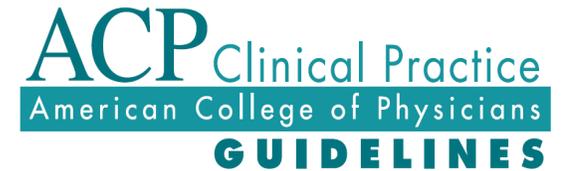


US Preventive Services Task Force Recommendations for Routine HIV Screening

Recommendation	Grade
Health care providers should screen for HIV in adolescents and adults aged 15–65 years. Younger adolescents and older adults who are at increased risk should also be screened	A
Health care providers should screen all pregnant people for HIV, including those who present in labor who are untested and whose HIV status is unknown	A



Medical Associations Support HIV Screening



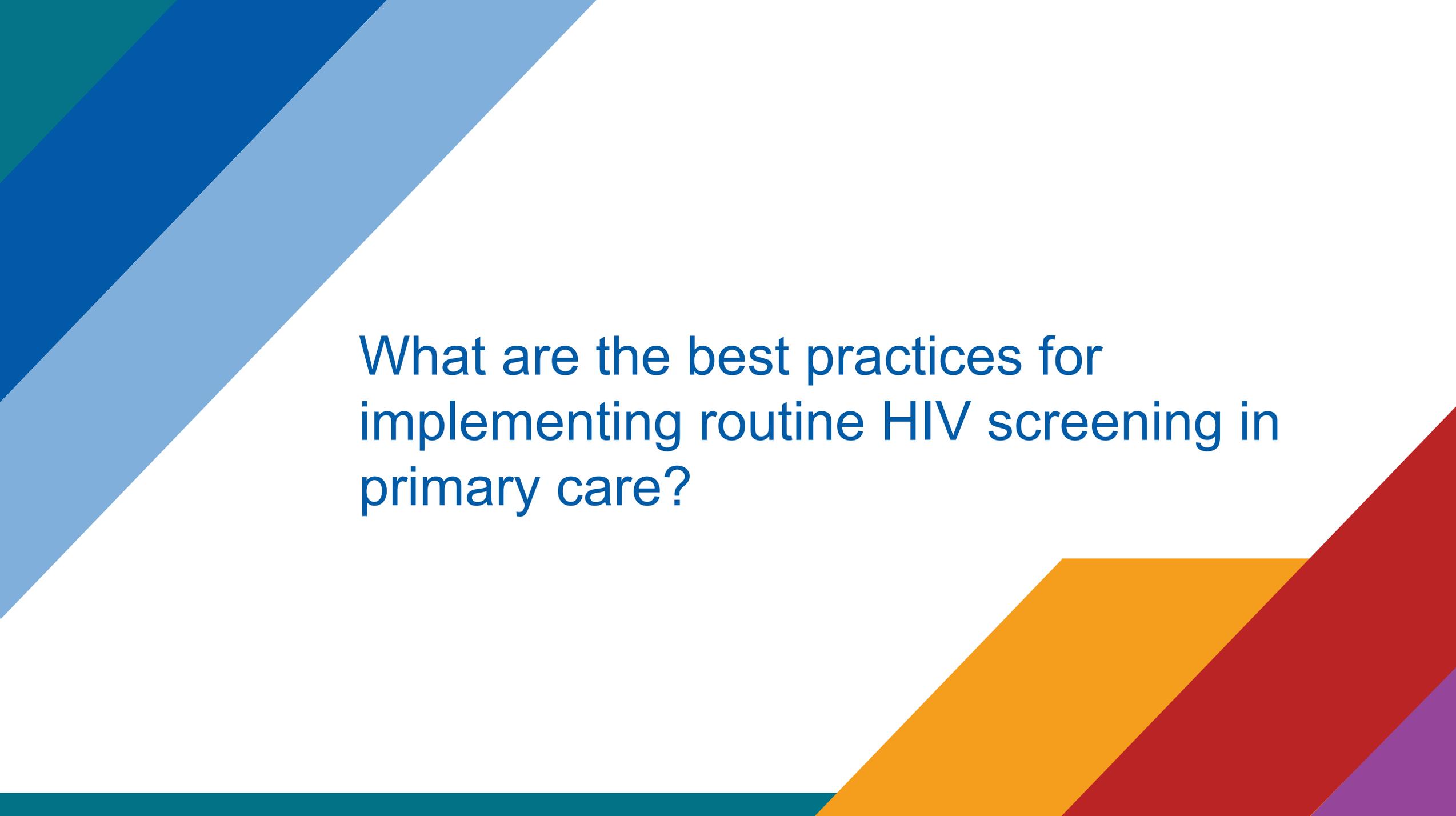
American College of Obstetricians and Gynecologists. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2014/05/routine-human-immunodeficiency-virus-screening>

AAHIVM. <https://aahivm.org/hiv-testing/>

American Medical Association (AMA). <https://www.ama-assn.org/delivering-care/ethics/routine-universal-screening-hiv>

SGIM. <https://www.sgim.org/communities/clinical-practice/hiv-aids-testing-resources>

HIVMA. <https://www.hivma.org/clinical-practice/prevention-and-screening-resources/>



What are the best practices for implementing routine HIV screening in primary care?

Establish HIV Screening as the Standard of Care

Offer routine HIV screening, along with other standard preventive screenings, such as:

- Blood pressure
- Cholesterol
- Blood glucose
- Other tests based on age/gender (e.g., prostate-specific antigen test, Pap smear)

Offer routine screening, regardless of a patient's:

- Race/ethnicity
- Sexual orientation
- Sex or gender
- Relationship status
- Socioeconomic status

Universal screening eliminates the stigma that may exist if patients are singled out for HIV testing based on who they are or what they do

Establish HIV Screening as the Standard of Care (cont'd)

Integrate HIV screening into clinical practice:

- **Train** staff to perform HIV opt-out screening
- **Instruct** nurses and physician assistants to review the wellness visit checklist
- **Provide** easily understood patient informational materials
- **Include** testing reminders in patients' electronic medical records

Address patients' misperceptions:

- Your patients may not know the basic facts about HIV
- Many patients believe they were previously tested for HIV, particularly if blood was drawn
- Many patients assume an HIV test was performed and, if they didn't receive a call from the doctor, that they don't have HIV

If you will not be delivering HIV treatment yourself, **have an established referral process in place** to ensure rapid linkage to care for patients with positive results

If a Patient Has Concerns About Undergoing an HIV Test...



- Provide informational materials
- Listen/respond to patient's questions/concerns
- To help answer commonly asked questions patients may have related to HIV testing, including the types of tests available, where to get one, what they can expect when getting tested, and confidentiality and payment concerns, visit [cdc.gov/ScreenforHIV](https://www.cdc.gov/ScreenforHIV)
- Emphasize that HIV screening is routine for all patients; suspicion of risk or disease is not the reason HIV testing is being performed
- Explain to the patient that they may never have been screened for HIV, even if other physicians have performed other types of blood tests

Delivering HIV Test Results: General Approach



- Deliver test results in person, if possible (negative results can be delivered via phone)
- Ensure that results are delivered in private to maintain confidentiality
- Deliver results, whether positive or negative, using a neutral and direct tone of voice
- Be empathic/nonjudgmental when addressing patients' responses
- Be flexible: patients' reactions/needs, comprehension, and ability to make decisions will vary

Delivering HIV Test Results: Negative Result

Explain the meaning of the result:



“

Your test result is negative. This means that the test did not detect HIV in your blood.

”

You do not have HIV.

- If the patient has an acute infection, they may be in the eclipse period during which their test result is falsely negative and may need further testing
- If the patient has had recent possible exposures to HIV, they should be retested in several weeks or, if HIV infection symptoms are present, tested with an HIV RNA test (nucleic acid test)

Delivering HIV Test Results: Negative Result (cont'd)



- **Provide** support, education, counseling:
 - Discuss HIV risk behaviors
 - Develop risk behavior change plan
 - Review/reinforce risk-reduction strategies:
 - Safer sex practices (e.g., condom use)
 - Safer injection drug use practices
 - PrEP
 - Refer for additional support, as appropriate (e.g., mental health services, treatment programs)
 - Encourage future HIV testing (people at ongoing should be tested regularly); set date for next HIV test
- **Summarize** discussion/review next steps
- **Provide** information and/or referrals in writing for patient to review later

Delivering HIV Test Results: Positive Result



Explain meaning of test:

“

Your test result is positive. HIV antibodies and antigen (or antibodies, if the test performed was an antibody test rather than the recommended antigen-antibody combination test) were detected in your blood.

“

You have HIV.

Delivering HIV Test Results: Positive Result (cont'd)

Provide support, education, counseling:

- The patient may be overwhelmed by information and not capable of absorbing additional information
- After supporting the patient emotionally, if possible, provide HIV information, including that:
 - HIV can affect overall health and be transmitted to others
 - HIV can be treated effectively, and with treatment, people can live long, healthy lives
 - Transmission to others can be prevented
 - You will help them obtain HIV medical care (if you will not be providing HIV treatment yourself)

Help patients stabilize emotionally, particularly if they have a psychiatric or substance use history:

- Have them describe their coping strategies
- Support them to make a plan for the rest of the day

Refer the patient to mental health services and/or other sources of emotional support, if appropriate

Delivering HIV Test Results: Positive Result (cont'd)

Provide referrals and link to care¹:

- If the patient seems ready to begin treatment:
 - Conduct basic lab work: HIV viral load test and immunodeficiency panel
 - Provide rapid/same-day ART or provide an appointment to be seen in a clinic within 1-2 weeks.
- Refer your patient to Partner Services (state/local health department) for help notifying partners, if appropriate
- Other referrals may include additional HIV test result counseling, mental health/substance use services, case management
- Summarize the discussion and review next steps
- Provide information and referrals in writing for your patient to review later

Early virologic **suppression** after HIV infection **improves patient outcomes** and decreases HIV transmission²

These steps are **critical**, as this is often the time when patients **drop out** of care

¹ U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

² Bacon O, et al. The Rapid ART Program Initiative for HIV Diagnoses (Rapid) in San Francisco. Paper presented at CROI 2018. <http://www.croiwebcasts.org/p/2018croi/93>

Delivering HIV Test Results: After the Appointment



Document test results in the medical record and include a summary of¹:

- What was discussed
- Patient assessment
- Service referrals

For a positive HIV test, **submit the appropriate report** to your state or local health department²

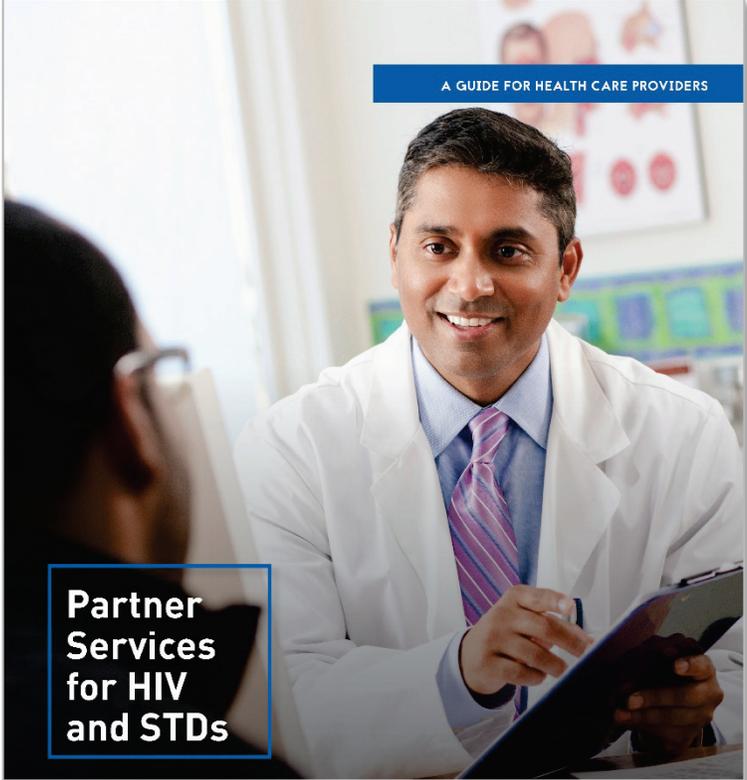
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² Centers of Disease Control and Prevention. State HIV laws that address high impact prevention efforts. Updated December 14, 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/policies/law/states/index.html>

Health Care Provider Role in Initiating Partner Services

For Patients *Being Tested* for HIV/STIs

- Talk with your patients about Partner Services and let them know that if they test positive for a reportable disease, they may be contacted by someone from the health department
- Discuss how Partner Services can help your patients and their sexual or injection drug use partners through early access to testing, treatment, and other services
- Emphasize the importance of participating in the Partner Services process as a way to help stop the transmission of HIV and STIs
- Conduct brief discussions with your patients on how to reduce high-risk sexual and substance use behaviors



A GUIDE FOR HEALTH CARE PROVIDERS

Partner Services for HIV and STDs

The services available to your patients diagnosed with HIV or another STD and their partners include partner notification, testing, linkage to care, referrals for support services, and risk reduction counseling.

Learn more at: [cdc.gov/HIVNexus](https://www.cdc.gov/HIV/Nexus).

Health Care Provider Role in Initiating Partner Services (cont'd)

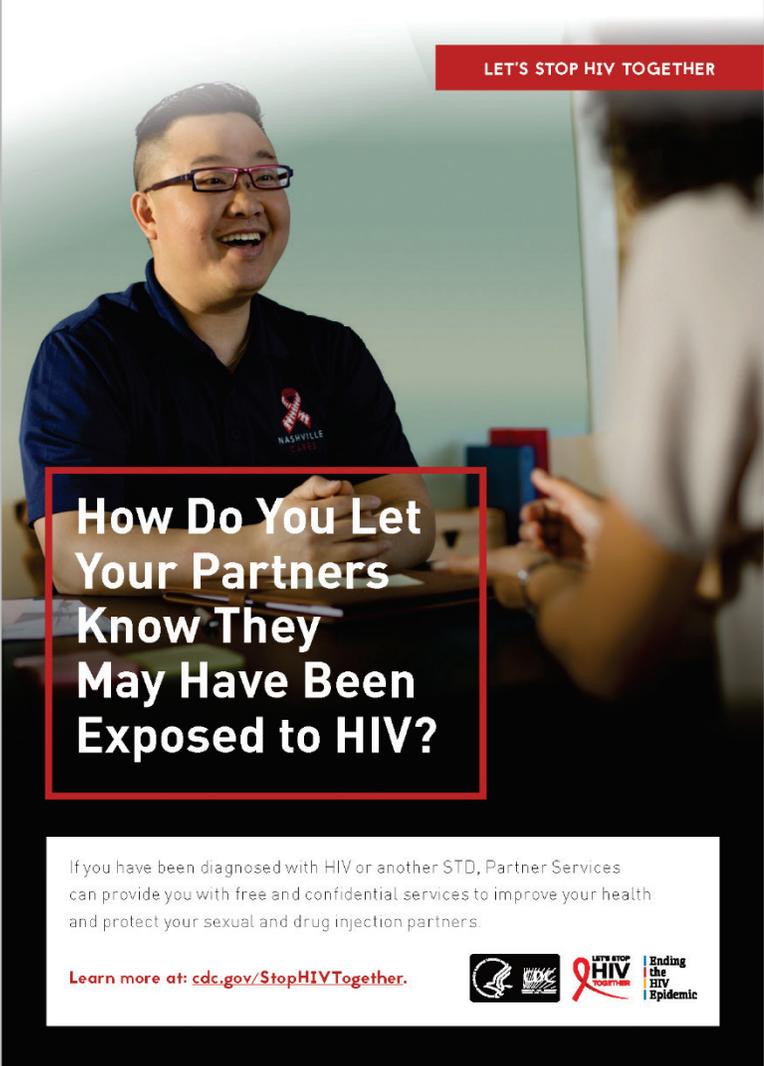
For People *Newly* Diagnosed With HIV

For people who test positive, Partner Services can provide linkage to treatment and care, risk-reduction counseling, and other services

For those who test negative, Partner Services can provide information on various HIV-prevention methods, including pre-exposure prophylaxis (PrEP), condoms, and other sexual and substance use options

For partners at high risk for HIV, consider PrEP; when taken as prescribed, PrEP is highly effective for preventing HIV from sex or injection drug use

Additionally, access to other services may lead to reductions in high-risk sexual and substance use behaviors



LET'S STOP HIV TOGETHER

How Do You Let Your Partners Know They May Have Been Exposed to HIV?

If you have been diagnosed with HIV or another STD, Partner Services can provide you with free and confidential services to improve your health and protect your sexual and drug injection partners.

Learn more at: cdc.gov/StopHIVTogether.



Ending the HIV Epidemic



Review

Summary



Health care providers can have a significant impact on **improving HIV screening**



Advances in HIV tests used for screening allow for **earlier HIV diagnosis**



Early HIV detection and treatment **reduce HIV morbidity, mortality, and transmission risk**



To optimally benefit from recent advances, people with HIV should **know** their HIV status, be successfully **linked** to care, **adhere** to antiretroviral therapy, and **remain engaged** in care

A number of **tools and resources** are available to enable health care providers to incorporate **HIV testing** into clinical practice

Every patient represents an opportunity for health care providers to **make a difference** in HIV diagnosis, prevention, treatment, and care

Speaker's Notes

Speaker's Notes, Slide 1:

Welcome to this presentation on integrating routine HIV screening into clinical practice.

Speaker's Notes, Slide 2:

This slide presents an overview of the topics that this presentation will cover:

- HIV screening and testing in the United States.
- Clinical benefits of early HIV diagnosis and treatment.
- Advantages of newer, more sensitive HIV tests.
- Recommendations for routine HIV screening and diagnostic testing.
- Best practices for implementing routine HIV screening in primary care settings.
- Review.

Speaker's Notes, Slide 3:

After completing this presentation, health care providers will be able to:

- Assess the clinical benefits of routine HIV screening and early treatment.
- Summarize the Centers for Disease Control and Prevention's (CDC's) recommendations for routine HIV screening and diagnostic testing.
- Evaluate and select appropriate HIV tests.
- Apply best practices to implement routine HIV screening and facilitate linkage to care.

Speaker's Notes, Slide 4:

Let's start by discussing what we know about HIV screening and testing in the United States.

Speaker's Notes, Slide 5:

- In 2016, approximately 80% of new HIV transmissions were attributable to individuals with HIV who either didn't know they had HIV or who knew they had HIV but were not receiving regular care.
- The other 20% of transmissions were attributable to individuals with HIV who were receiving care but were not virally suppressed. In contrast, people with HIV who were taking HIV medication and were virally suppressed accounted for no new HIV transmissions.
- These numbers demonstrate the importance of HIV diagnosis and treatment for preventing the transmission of HIV.

Reference:

Ending the HIV Epidemic: HIV Treatment Is Prevention. CDC Vital Signs. Published March 2019. Accessed March 26, 2020. <https://www.cdc.gov/vitalsigns/end-hiv/index.html>

Speaker's Notes, Slide 6:

- Many people at risk for HIV are not getting tested for HIV every year. That is, 29% of gay, bisexual, and other men who have sex with men; 42% of people who inject drugs; and 59% of heterosexual people are at risk because they had sex with someone at risk for or living with HIV.
- Furthermore, 7 of 10 people at risk who were not tested for HIV in the past year saw a health care provider during that time, and >75% of them were not offered a test.
- Health care providers can diagnose HIV sooner if they test more people and test people at risk more often.

Reference:

HIV Testing. CDC Vital Signs. Published December 2017. Accessed March 26, 2020.

<https://www.cdc.gov/vitalsigns/hiv-testing/index.html>

Speaker's Notes, Slide 7:

- HIV screening and testing during health care providers' office visits allow for immediate initiation of antiretroviral therapy or pre-exposure prophylaxis or prompt referral for these therapies.^{1,2}
- Considering that studies have shown that a health care provider's recommendation for HIV testing significantly impacts a patient's decision to test, health care providers play a crucial role in improving HIV testing and reducing the ongoing transmission of HIV in the community.³

References:

¹Ham DC, Huang Y, Gvetadze R, Peters PJ, Hoover KW. Health care use and HIV testing of males aged 15-39 years in physicians' offices—United States, 2009-2012. *MMWR Morb Mortal Wkly Rep*. 2016;65:621.

²Centers for Disease Control and Prevention. Understanding the HIV care continuum. p. 1. Published June 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/pdf/library/factsheets/cdc-hiv-care-continuum.pdf>

³Kaiser Family Foundation. 2012 survey of Americans on HIV/AIDS. Published July 2012. Accessed January 9, 2019. <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8334-f.pdf>

Speaker's Notes, Slide 8:

- This slide presents CDC's status-neutral approach to HIV prevention and care. According to this approach, all patients can benefit from quality HIV prevention and care, regardless of their HIV status. Patients who have negative HIV tests should be offered prevention tools, and patients who have positive HIV tests should be linked to HIV treatment and care.
- HIV testing—including routine HIV screening—is the first step in linking each patient to HIV prevention and care, as shown by the orange arrow on the slide.
- For your patients to be able to benefit from the support available in this approach, such as prevention services, HIV treatment and care, and viral suppression, they must first be tested for HIV.

Reference:

The White House. National HIV/AIDS strategy for the United States 2022–2025. p. 34. Published 2021. Accessed February 2, 2022. <https://www.whitehouse.gov/wp-content/uploads/2021/11/National-HIV-AIDS-Strategy.pdf>

Speaker's Notes, Slide 9:

- The HIV prevention and care continuum consists of several steps required to achieve viral suppression. Specifically, CDC tracks the percentage of people with HIV who:
 - Have been diagnosed.
 - Have been linked to care, meaning they visited a health care provider within 1 month (30 days) after receiving a diagnosis of HIV.
 - Have received or were retained in care, meaning they received medical care for HIV.
 - Have achieved viral suppression, meaning that their HIV viral load (the amount of HIV in the blood) was at a very low level.
- The ultimate goal of HIV treatment is to achieve viral suppression, meaning the amount of HIV in the body is very low or undetectable. This is important for people with HIV to stay healthy, live longer, and reduce their chances of passing HIV to others.

Reference:

Centers for Disease Control and Prevention. Understanding the HIV care continuum. p. 4. Published June 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/pdf/library/factsheets/cdc-hiv-care-continuum.pdf>

Speaker's Notes, Slide 10:

In this section, we'll review how early HIV diagnosis and treatment can benefit your patients.

Speaker's Notes, Slide 11:

When HIV is diagnosed early, antiretroviral therapy (ART)—the medicines used to treat HIV—can be initiated early, which has been demonstrated to provide several long-term benefits:

- Early ART initiation, when followed by long-term viral suppression, helps to decrease the number of cells infected with HIV that are not actively producing new virus. This is an important benefit because if ART is interrupted, the virus in these cells can begin to replicate again. These cells are collectively known as the HIV reservoir.¹
- Early ART initiation, when the patient's CD4+ cell count is still high, has also been shown to provide protection against both serious AIDS-related events, such as tuberculosis, Kaposi's sarcoma, and malignant lymphomas, and serious non-AIDS-related events, including non-AIDS-defining cancers and cardiovascular disease.^{2,3}
- When ART is begun soon after diagnosis, patients can achieve viral suppression more quickly,⁴ thereby decreasing the likelihood of HIV transmission.⁵

- Finally, a systematic review of studies examining early ART initiation found evidence that patients who initiate ART early are more likely to be virally suppressed 1 year after diagnosis than those who defer ART initiation.⁶

References:

- ¹ Chéret A, Bacchus-Souffan C, Avettand-Fenoël V, et al. Combined ART started during acute HIV infection protects central memory CD4+ T cells and can induce remission. *J Antimicrob Chemother.* 2015;70(7):2117.
- ² Lundgren JD, Babiker AG, Gordin F, et al. Initiation of antiretroviral therapy in early asymptomatic HIV infection. *N Engl J Med.* 2015;373(9):803.
- ³ Hsu D, Sereti I, Ananworanich J. Serious non-AIDS events: immunopathogenesis and interventional strategies. *AIDS Res Ther.* 2013;10:2, 4.
- ⁴ Pilcher CD, Ospina-Norvell C, Dasgupta A, et al. The effect of same-day observed initiation of antiretroviral therapy on HIV viral load and treatment outcomes in a U.S. public health setting. *J Acquir Immune Defic Syndr.* 2017;74(1):49.
- ⁵ Grinsztejn B, Hosseinipour MC, Ribaudo HJ, et al. Effects of early versus delayed initiation of antiretroviral treatment on clinical outcomes of HIV-1 infection: results from the phase 3 HPTN 052 randomised controlled trial. *Lancet Infect Dis.* 2014;14(4):281-290.
- ⁶ Mateo-Urdiales A, Johnson S, Smith R, Nachega JB, Eshun-Wilson I. Rapid initiation of antiretroviral therapy for people living with HIV. *Cochrane Database of Systematic Reviews.* 2019;6:CD012962.

Speaker's Notes, Slide 12:

- Using data from the UK Collaborative HIV Cohort Study of people with HIV receiving care in the UK between the years 2000 and 2012, a team of investigators estimated the life expectancy in people treated for HIV after different durations of antiretroviral therapy, based on their latest CD4 cell count and whether they had achieved viral suppression.
- Patients who attained viral suppression and had a CD4 cell count ≥ 350 cells/mm³ within 1 year of initiating antiretroviral therapy were expected to have a normal life expectancy; e.g., ~80 years for a 35-year-old HIV-positive man or woman.
- Patients who had CD4 cell counts < 200 cells/mm³ before or after initiating antiretroviral therapy had an increased risk of death. The difference in life expectancy between patients with CD4 cell counts < 200 cells/mm³ and those with counts ≥ 200 cells/mm³ was 8 years at the initiation of antiretroviral therapy and increased with duration of treatment.

Reference:

May M, et al. Impact on life expectancy of HIV-1 positive individuals of CD4+ cell count and viral load response to antiretroviral therapy. *AIDS.* 2014;28:1199.

Speaker's Notes, Slide 13:

- Routine HIV screening, as opposed to risk-based testing that requires the identification of behaviors that increase the risk of HIV, reduces the stigma around HIV testing. Patients are more likely to

accept recommended HIV testing when it is offered routinely to everyone and not based on a risk assessment.¹

- Assays that detect HIV-1 infection earlier are now widely available.²
 - New immunoassay tests that are more sensitive for detecting early HIV infection can reduce the interval between the time of infection and initial immunoassay reactivity and, thus, the interval between HIV diagnosis and treatment.
- Initiating antiretroviral therapy during the early stage of infection has been shown to significantly reduce morbidity and mortality associated with HIV and the risk of HIV transmission.¹
- Evidence suggests that voluntary HIV screening is cost-effective even in areas where HIV prevalence is low. In fact, in populations with a >1% prevalence of undiagnosed HIV, HIV screening is as cost-effective as screening for other chronic conditions, such as hypertension, or for colon and breast cancer.¹

References:

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² Centers for Disease Control and Prevention, Association of Public Health Laboratories. Laboratory testing for the diagnosis of HIV infection: Updated recommendations. Published June 27, 2014. Accessed September 17, 2019. <https://stacks.cdc.gov/view/cdc/23447>

Speaker's Notes, Slide 14:

- Since the 1980s, the demographic make-up of people with HIV/AIDS in the United States has changed. More patients with HIV are aged <20 years of age, women, members of racial or ethnic minority populations, residents of rural areas, and heterosexual men and women who are often unaware that they are at risk for HIV. As a result, risk-based testing fails to identify many people with HIV.
 - Routine screening of all patients means fewer diagnoses are missed.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 15:

Please consider the following case study:

- A man aged 21 years presents with dysuria and penile discharge for the past 3 days.
- He reports having had unprotected vaginal intercourse a week earlier with a woman he met at a party.
- After complete history and physical exam, you suspect gonococcal urethritis.

Based on CDC HIV screening recommendations, you would like to recommend he be tested for HIV.

Speaker's Notes, Slide 16:

Based on the case study presented on the previous slide, how would you answer the following question: Which of the following methods for offering HIV testing would most likely lead to patient acceptance?

- “I think you have a sexually transmitted disease, also known as an ‘STD.’ It is probably gonorrhea. I recommend HIV testing in addition to testing for other common STDs. Would you like to get tested for HIV today?”
- “I think you have a sexually transmitted disease, also known as an ‘STD.’ It is probably gonorrhea. I routinely perform the following tests in all patients with your symptoms: chlamydia, gonorrhea, syphilis, and HIV.”
- I would not offer HIV testing.

Speaker's Notes, Slide 17:

Correct answer:

B. “I think you have a sexually transmitted disease, also known as an ‘STD.’ It is probably gonorrhea. I routinely perform the following tests in all patients with your symptoms: chlamydia, gonorrhea, syphilis, and HIV.”

- Option A describes an “opt-in” approach, in which the patient is offered HIV testing, and consent is requested. This runs counter to CDC’s revised 2006 HIV screening guidelines.
- Option B describes the CDC-recommended “opt-out” approach, in which the patient is notified that testing will be performed unless the patient declines.
- Option C also runs counter to CDC recommendations. Clearly, if the test is neither routinely administered nor offered, the patient will not be in a position to either opt out or opt in. Testing will not be performed unless the patient requests it. Moreover, not offering the test runs counter to CDC’s recommendation that HIV testing should be performed on any patient who tests positive for an STD.

Speaker's Notes, Slide 18:

Now let’s find out about the advantages of using newer, more sensitive HIV tests.

Speaker's Notes, Slide 19:

- There are three main types of HIV tests:^{1,2}
 - The antibody test detects HIV immunoglobulin M (IgM) and immunoglobulin G (IgG) antibodies.
 - The antigen/antibody combination test detects HIV p24 antigen, as well as HIV IgM and IgG antibodies.
 - The nucleic acid test (NAT) detects HIV RNA.

- Laboratory-based and rapid/point-of-care versions of both antibody tests and antigen-antibody combination tests have been approved by the US Food and Drug Administration (FDA). However, reactive results from all antibody and antigen-antibody tests must be subjected to confirmatory testing to make a diagnosis.
- Only one laboratory-based NAT has been approved by the FDA. NATs are typically used to monitor viral load, to detect acute HIV in patients with negative antigen-antibody test results, and to perform confirmatory testing. One major benefit of NATs is that they have very low limits of detection, with some capable of detecting viremia as low as 20 copies/mL. However, NATs are costly and complex to perform and are, thus, not used for routine HIV screening.

References:

¹Centers for Disease Control and Prevention, Association of Public Health Laboratories. Laboratory testing for the diagnosis of HIV infection: updated recommendations. p. 17-20.

<https://stacks.cdc.gov/view/cdc/23447>

²Spach, DH. HIV diagnostic testing. National HIV curriculum. p. 4-9.

<https://www.hiv.uw.edu/go/screening-diagnosis/diagnostic-testing/core-concept/all>

Speaker's Notes, Slide 20:

- Following exposure that results in HIV infection, the period of time during which no existing diagnostic test can detect HIV is called the *eclipse period*.
- The time between HIV infection and an accurate result on a given test is referred to as the window period. Improvements in testing technology continue to reduce this window period and, therefore, the time to diagnosis and treatment of early HIV infection.
- Each type of HIV test has its own testing window, with the nucleic acid test capable of detecting HIV the earliest, followed by the antigen/antibody combination test, and lastly, the antibody test.

Reference:

Hurt CB, Nelson JAE, Hightow-Weidman LB, Miller WC. Selecting an HIV test: a narrative review for clinicians and researchers. *Sex Transm Dis*. 2017;44(12):2.

Speaker's Notes, Slide 21:

- This slide shows the probability of male–female HIV transmission per coital act as a function of HIV disease stage in the index case.¹ Transmission probabilities are shown for each stage of disease.
- Note the very high viral burden in semen in individuals with acute HIV infection.
- With today's antiretroviral therapies, the risk of sexual HIV transmission by individuals who maintain an undetectable viral load is negligible.²

References:

¹Cohen MS, Pilcher CD. Amplified HIV transmission and new approaches to HIV prevention. *J Infect Dis*. 2005;191:1392.

²Centers for Disease Control and Prevention. Evidence of HIV treatment and viral suppression in preventing the sexual transmission of HIV. p. 3. Published December 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/pdf/risk/art/cdc-hiv-art-viral-suppression.pdf>

Speaker's Notes, Slide 22:

- In an estimated 40%–90% of individuals, HIV seroconversion is associated with a clinical syndrome known as acute (or primary) HIV infection or acute retroviral syndrome.¹
- Common symptoms include fever, rash, lymphadenopathy, nonexudative pharyngitis, and myalgias/arthralgias.^{2,3}

References:

¹ Morgado J, Póvoas MI, Cruz C, Teixeira A. A severe manifestation of primary HIV-1 infection in an adolescent. *BMJ Case Rep.* 2014;2014:bcr2014205697.

² Hoenigl M, Green N, Camacho M, et al. Signs or symptoms of acute hiv infection in a cohort undergoing community-based screening. *Emerg Infect Dis.* 2016;22(3):533.

³ Centers for Disease Control and Prevention. Patient information sheet – Acute HIV infection. p. 1. Accessed January 8, 2019. https://www.cdc.gov/hiv/pdf/prep_gl_patient_factsheet_acute_hiv_infection_english.pdf

Speaker's Notes, Slide 23:

Please consider the following case study:

- A 46-year-old woman visited a primary care clinic for the first time complaining of a 2-day history of sore throat, fever, and rash.
- She had no significant medical history and was not taking any medications.
- On physical exam, her temperature was 100.4°F; she had a generalized erythematous maculopapular rash and red, inflamed throat.
- She was diagnosed with “viral illness” and advised to take acetaminophen to reduce the fever and return if symptoms persisted after 7–10 days.

Speaker's Notes, Slide 24:

Please consider the following case study:

- The patient's symptoms resolved, so she didn't initially return.
- 8 weeks later, however, she comes back with news that one of her male friends “with benefits” told her he was recently diagnosed with HIV.
- She now reveals that she has had unprotected sex with several partners over the past 6 months.
- An antigen-antibody combination test is ordered but gives a negative result.
- Because the patient's symptoms were consistent with acute HIV infection, and she was likely exposed to HIV, a nucleic acid test is ordered and comes back positive.

Speaker's Notes, Slide 25:

Based on the case study presented on the previous two slides, please answer the following question: The patient's initial presentation is consistent with acute HIV seroconversion. Which of the following is *false*?

- Seroconversion is the interval during which antibodies are first produced and rise to detectable levels.
- Seroconversion is often, although not always, accompanied by flu-like symptoms.
- Symptoms usually last about 14 days.
- People are less infectious during acute vs chronic infection.

Speaker's Notes, Slide 26:

Correct answer:

D. The false statement is, "People are less infectious during acute vs chronic infection"

- During and just before seroconversion, there is uncontrolled viral replication, and people with HIV are extremely infectious; HIV can be readily transmitted by sexual contact.
- Recognition of primary HIV infection is especially important for improving prognosis and limiting transmission.

Speaker's Notes, Slide 27:

Let's move onto the recommendations and guidelines for routine HIV screening and testing.

Speaker's Notes, Slide 28:

- CDC's revised 2006 recommendations advocate routine voluntary HIV screening as a normal part of medical practice, similar to screening for other treatable conditions.
- Screening is a basic public health tool used to identify unrecognized health conditions so that treatment can be offered before symptoms develop and, for communicable diseases, so that interventions can be implemented to reduce the likelihood of continued transmission.
- HIV infection is consistent with all generally accepted criteria that justify screening:
 1. HIV infection is a serious health condition that can be diagnosed before symptoms develop.
 2. It can be detected using reliable, inexpensive, and noninvasive tests.
 3. Infected patients can gain years of life if they initiate treatment early, before symptoms develop.
 4. Screening has little to no cost in relation to expected benefits.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 29:

- CDC's 2006 recommendations for HIV testing are far-reaching and represent a major revision of CDC's previous guidelines. They aim to reduce the number of people with undiagnosed HIV in the United States and to reduce the stigma and barriers associated with testing.
- The guidelines represent a policy shift from testing only people at high risk for HIV to universal testing for adolescents and adults. CDC recommends that all people aged 13–64 years in all health care settings be tested for HIV after the patient is notified that testing will be performed, unless they decline (i.e., opt-out screening). This slide presents a summary of key screening recommendations:
 - All people ages 13-64 should be tested at least once, regardless of risk, in a health care setting where the prevalence of undiagnosed HIV is $\geq 0.1\%$.
 - All patients initiating tuberculosis treatment should be tested for HIV.
 - All patients seeking treatment for a sexually transmitted infection (STI) should be tested for HIV, and testing should be repeated each time a patient seeks STI treatment.
 - All patients and their prospective sex partners should be tested for HIV before initiating a new sexual relationship.
 - All pregnant people should be tested for HIV as part of the routine panel of prenatal screening tests.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 30:

- CDC's revised 2006 recommendations for HIV testing also include recommendations for specific populations at risk for HIV:^{1,2}
 - People who inject drugs and their sex partners.
 - People who exchange sex for money or drugs.
 - Sex partners of people with HIV.
 - Men who have sex with men.*
 - Heterosexual people who themselves or whose sex partners have had ≥ 1 sex partner since their most recent HIV test.

*More frequent testing (every 3–6 months) can be considered for asymptomatic, sexually active men who have sex with men, based on their individual risk factors, local HIV epidemiology, and local policies.²

References:

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² DiNenno EA, Prejean J, Irwin K, et al. Recommendations for HIV screening of gay, bisexual, and other men who have sex with men — United States, 2017. *MMWR Morb Mortal Wkly Rep.* 2017;66:831.

<https://www.cdc.gov/mmwr/volumes/66/wr/mm6631a3.htm>

Speaker's Notes, Slide 31:

- Compared with active choice testing, opt-out screening can substantially increase HIV testing, whereas opt-in schemes may reduce testing.
- To improve patients' acceptance of HIV testing, CDC's revised 2006 screening guidelines recommend routine, nontargeted, opt-out testing.
- Opt-out HIV screening is carried out after notifying the patient that an HIV test will be performed and that the patient may elect to decline or defer testing.
- CDC believes that opt-out screening for HIV will:
 - Increase the number of people who are aware of their HIV infection.
 - Identify HIV infections earlier, reducing HIV-related morbidity and mortality.
 - Reduce mother–child HIV transmission.
 - Reduce the stigma associated with HIV testing.
 - Enable those who are infected to take steps to protect the health of their partners.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 32:

- Diagnostic testing for HIV infection, especially acute HIV infection, remains a stalwart of good clinical care.
- CDC's diagnostic testing recommendations for people with clinical signs or symptoms consistent with HIV infection are summarized in this slide.
 - All patients with signs or symptoms consistent with HIV infection, or an opportunistic illness characteristic of AIDS, should be tested for HIV.
 - Health care providers should maintain a high level of suspicion for acute HIV infection in all patients who have a compatible clinical syndrome and who report recent high-risk behavior.

- When acute retroviral infection is possible, and an antigen-antibody combination test gives a negative result, an RNA test (or nucleic acid test) should be performed.
- People with HIV should receive or be referred for clinical care promptly.
- For health care providers who provide clinical care for patients with HIV, the US Department of Health and Human Services has published guidelines for the use of antiretroviral therapy, which can be accessed at clinicalinfo.hiv.gov.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep*. 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 33:

- HIV testing is important for identifying undiagnosed infections, promptly initiating HIV treatment, providing other care services for patients with diagnosed HIV, and linking patients (including HIV-negative patients considered to be at risk for HIV) and their partners to HIV prevention services.¹
- The CDC-recommended testing approach consists of two steps: initial screening with an antigen-antibody test, followed by confirmatory testing of reactive samples with an HIV-1/2 differentiation assay and/or nucleic acid test.²

References:

¹ Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep*. 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

² Centers for Disease Control and Prevention, Association of Public Health Laboratories. Laboratory testing for the diagnosis of HIV infection: Updated recommendations. Published June 27, 2014. Accessed September 17, 2019. <https://stacks.cdc.gov/view/cdc/23447>

Speaker's Notes, Slide 34:

- In 2014, CDC and the Association of Public Health Laboratories (APHL) issued joint recommendations for HIV testing using HIV tests available at the time.¹
- Updates of these guidelines in 2016² and 2017³ provided information on the use, interpretation, and reporting of results of tests that were unavailable or had insufficient evidence supporting their use in 2014.
 - Among these tests were rapid HIV-1/-2 antigen/antibody combination test, tests that more precisely differentiate between HIV-1 and -2, and HIV nucleic acid tests.
- HIV testing begins with a combination antigen/antibody immunoassay that detects HIV-1 and -2 antibodies and the HIV-1 p24 antigen.
- If the combination immunoassay produces a negative (nonreactive) result, then the patient is considered to not have HIV, unless acute HIV infection is suspected.

- Acute HIV infection may be suspected if the patient had or may have had a recent exposure to HIV or if they report symptoms consistent with acute HIV infection in the past 14 days. Such symptoms include fever, fatigue, myalgia, and headache, among others.⁴
- In this case, HIV-1 nucleic acid testing should be performed to check for acute HIV infection.
- Specimens that give a positive (reactive) result on the initial combination antigen/antibody immunoassay should be sent for supplemental testing with an immunoassay that differentiates between HIV-1 and HIV-2 antibodies.
 - If the antibody differentiation immunoassay gives a positive (reactive) result, this means that HIV antibodies were detected, and the patient has HIV.
 - If the antibody differentiation immunoassay produces nonreactive or indeterminate results, HIV-1 nucleic acid testing should be conducted to obtain conclusive results.
- Once the testing algorithm has generated a conclusive result, the patient should be linked to status-neutral HIV prevention and care services
 - Patients who are HIV negative should be given access to HIV prevention, such as PrEP, to help them stay HIV negative.
 - Patients found to have HIV should be provided HIV treatment and care to help them achieve viral suppression and stay healthy.

References:

¹ Centers for Disease Control and Prevention. Laboratory testing for the diagnosis of HIV infection: Updated recommendations. p. 17-20. Published June 27, 2014. Accessed January 8, 2019. <https://stacks.cdc.gov/view/cdc/23447>

² Centers for Disease Control and Prevention. Technical update on HIV-1/2 differentiation assays. p. 1-3. Published August 2016. Accessed January 8, 2019. <https://stacks.cdc.gov/view/cdc/40790>

³ Centers for Disease Control and Prevention. Technical update: Use of the determine HIV 1/2 Ag/Ab combo test with serum or plasma in the laboratory algorithm for HIV diagnosis. Accessed January 13, 2021. <https://stacks.cdc.gov/view/cdc/48472>

⁴ Hoenigl M, Green N, Camacho M, et al. Signs or symptoms of acute HIV infection in a cohort undergoing community-based screening. *Emerg Infect Dis*. 2016;22(3):533.

Speaker's Notes, Slide 35:

- In addition to CDC, leading professional groups also recommend routine HIV screening but differ on the age when screening should begin.
- In 2013, the US Preventive Services Task Force (USPSTF) expanded its 2005 recommendations and now recommends that physicians and other health professionals should screen all adolescents and adults aged 15–65 years for HIV, as well as younger adolescents and older adults who are at increased risk for contracting the disease. The USPSTF also recommends that health care providers screen all pregnant people for HIV, including those presenting in labor whose HIV status is unknown. **[Strength of recommendation: Grade A: high certainty that the net benefit is substantial; Suggestion for practice: offer or provide this service.]**¹

- Section 2713 of the Affordable Care Act requires private insurers to cover preventive services recommended by the USPSTF with a grade of A or B. These services must be covered with no cost sharing (i.e., no deductible and no copay).²

References:

¹ Moyer VA. Screening for HIV: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2013;159:52.

² Seiler N, Malcarney M-B, Horton K, Dafflito S. Coverage of clinical preventive services under the Affordable Care Act: from law to access. *Public Health Rep.* 2014;129:526.

Speaker's Notes, Slide 36:

- Other medical associations that support CDC's recommendations for routine HIV screening include:
 - American Academy of HIV Medicine (AAHIVM)¹
 - HIV Medicine Association (HIVMA)²
 - American Medical Association (AMA)³
 - Society of General Internal Medicine (SGIM)⁴
 - American College of Obstetricians and Gynecologists⁵

References:

¹ AAHIVM. <https://aahivm.org/hiv-testing/> ↗

² HIVMA. <https://www.hivma.org/clinical-practice/prevention-and-screening-resources/> ↗

³ AMA. <https://www.ama-assn.org/delivering-care/ethics/routine-universal-screening-hiv> ↗

⁴ SGIM. <https://www.sгим.org/communities/clinical-practice/hiv-aids-testing-resources> ↗

⁵ American College of Obstetricians and Gynecologists. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2014/05/routine-human-immunodeficiency-virus-screening> ↗.

Speaker's Notes, Slide 37:

This section will review some best practices for implementing routine HIV screening in primary care settings.

Speaker's Notes, Slide 38:

- Screening for HIV should be as routine as testing for blood pressure, cholesterol, blood glucose, or other tests that would routinely be offered based on a patient's age and gender, such as a prostate-specific antigen test and Pap smear—something that is routinely offered to patients.
- Use all clinical opportunities to offer an HIV test, which include the patient's first visit to your office, every time you order a blood test, and every time you do a Pap smear or sexually transmitted disease test.

- Offer the test as part of routine care. For example: “I’m ordering some blood tests today and I see you have not had an HIV test in the past year. I normally order an HIV test for all my patients and would like to add it to your blood tests today.”
- Adopting an HIV screening approach “normalizes” the process of HIV risk assessment and testing as patients come to expect these services within their routine primary care.
- This slide and the next one offer some suggestions on how to integrate routine HIV screening into clinical practice.

Speaker’s Notes, Slide 39:

- When integrating HIV screening as part of the standard of care in your clinical practice, take the following steps:
 - Train staff to perform HIV opt-out screening
 - Instruct nurses and physician assistants to review the wellness visit checklist
 - Provide easily understood patient informational materials
 - Include testing reminders in patients’ electronic medical records
- Furthermore, you may need to address your patients’ misconceptions about HIV screening. For instance:
 - Your patients may not know the basic facts about HIV
 - Many patients believe they were previously tested for HIV, particularly if blood was drawn
 - Many patients assume an HIV test was performed and, if they didn’t receive a call from the doctor, that they don’t have HIV
- Finally, if you will not be providing HIV treatment yourself, be sure have an established referral process to rapidly link your patients with positive test results to HIV treatment and care.

Speaker’s Notes, Slide 40:

- Determine the cause of your patient’s reluctance to be screened so you can address it appropriately.
- Encouraging screening after an initial refusal can be uncomfortable, but it is in line with current recommendations. The following are possible responses to common reasons for refusal:
 - Your patient doesn’t think they have HIV, perhaps because they are in a monogamous relationship.
 - Gently remind them that the only way to be sure is to be tested.
 - Your patient is worried that someone will find out about their HIV status.
 - Assure them that their medical records are confidential, in accordance with the Health Insurance Portability and Accountability Act (HIPAA).
 - Your patient thinks nothing can be done if the test is positive.

- Discuss the highly effective drug therapies that are now available. Explain that these drug regimens can prolong the lives of people with HIV and can help to reduce the risk of transmitting HIV to others.
- Your patient thinks they don't need retesting because they had a negative result in the past.
 - Remind them of the importance of knowing their status early on. If the test result is positive, antiretroviral therapy can be initiated.
- Your patient has a fear of needles.
 - Consider offering to draw blood for the HIV screening and other preventive screening tests simultaneously, so they won't have to be "stuck" more than necessary. You may also offer your patient an oral fluid test.
- Your patient is concerned about job loss, the loss of personal relationships, or even domestic violence.
 - Talk through the relevant issues with them; direct them to the appropriate services for additional assistance, if necessary.
- Your patient thinks testing won't be covered by their health plan.
 - Assure them that most plans do cover HIV screening. Also let them know that in most states, the AIDS Drug Assistance Program facilitates access to early HIV treatment for people without health insurance.

Reference:

Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17.

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 41:

- Delivering HIV test results is an important interaction between health care providers and patients. Information must be communicated simply and clearly, and it is essential support the patient's response to the news, provide information about medical care or other services, and offer immediate referral for any other assistance that may be required.
- Results are best conveyed in person, and positive test results should always be communicated face to face.
- Health care providers should be prepared for patients' responses to test results, which may be strong, particularly if their test results are positive, and should remain flexible to respond to their needs on an individualized basis.
- Health care providers should also have at their disposal resources to provide emotional and practical support for patients who need it, so that patients have quick, easy access to necessary information and counseling.

Reference:

U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 1. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

Speaker's Notes, Slide 42:

- A negative test offers an opportunity to counsel a patient about high-risk behaviors and how to reduce personal risk. When results of initial testing are negative, you will need to help the patient understand the concept of possible seroconversion and the need to repeat the HIV test. It is important to communicate the extreme importance of follow-up testing.^{1,2}

References:

¹ U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

² Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 43:

- Patients who are known to the screening health care provider to be at high risk for HIV should be aware of the need for ongoing, periodic retesting.^{1,2}
- Most importantly, patients who receive a negative HIV test result should receive or be referred for prevention services and counseling, including counseling about HIV risk behaviors and risk reduction strategies, prescribing pre-exposure prophylaxis (PrEP), and/or referral for mental health service.¹

References:

¹ U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

² Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker's Notes, Slide 44:

- The reporting of a positive HIV test result to a patient with HIV is more complex and requires linkage to clinical and counseling services. The health care provider must ensure confidentiality and acknowledge the patient's concerns.
 - Initial counseling by the health care provider should include how to prevent transmission of HIV to the patient's partner and guidance on getting the partner tested.^{1,2}

- It is important to emphasize the benefits of medical care and treatment and the likelihood that, with appropriate care (including antiretroviral therapy), they will lead healthy and productive lives (i.e., this is not a “death sentence,” as many patients may fear).¹
- The health care provider should encourage the patient to seek support from family members and friends to help manage the anxiety surrounding a positive diagnosis.
- It is also crucial to link patients to a source of medical care and ensure they have a follow-up appointment within 1–2 weeks, if possible; this greatly reduces the risk of a patient not following up and increases the likelihood of early treatment.¹

References:

¹ U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

² Branson B, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Morb Mortal Wkly Rep.* 2006;55:1-17. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

Speaker’s Notes, Slide 45:

- When delivering a positive HIV test result to a patient, it is vital to provide them with appropriate support, education, and counseling, being aware that the patient may be overwhelmed by information and not capable of absorbing additional information.
- After supporting the patient emotionally, provide HIV information, if possible:
 - HIV can affect overall health and be transmitted to others.
 - HIV can be treated effectively, and with treatment, people can live long, healthy lives.
 - Transmission to others can be prevented.
 - You will help them obtain HIV medical care (if you will not be providing HIV treatment yourself).
- During this process, it is also important to help the patient stabilize their emotions, particularly if they have a psychiatric or substance use history. Strategies for doing this include having the patient describe their coping strategies and supporting them to make a plan for the rest of the day.
- If appropriate, refer the patient to mental health services and/or other sources of emotional support.

Reference:

U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

Speaker’s Notes, Slide 46:

- After delivering a positive test result, it is crucial to provide referrals and link your patient to treatment and care:

- If you will not be providing HIV treatment yourself, refer your patient to a local HIV specialist to initiate treatment immediately.
- Refer the patient to Partner Services (state/local health departments) for assistance with disclosure to partners/partner testing, if appropriate.
- Other referrals may include additional HIV test result counseling, mental health/substance use services, and case management .
- Summarize the discussion and review next steps.
- Provide information and referrals in writing for your patient to review later.
- For patients with HIV, early virologic suppression improves patient outcomes and decreases HIV transmission.¹
 - In 2015, San Francisco, CA, adopted the Citywide RAPID initiative to link all individuals with a new HIV diagnosis to care within 5 days of diagnosis and begin antiretroviral therapy (ART) at the first visit with the care provider.²
 - Compared with 2013, 2016 saw a 54% decrease in the time from HIV diagnosis to first virologic suppression (from 134 to 61 days) in San Francisco.²
 - There were also substantial decreases in time from diagnosis to care (from 8 to 5 days; 38%), and from initiation of care to ART initiation (27 to 1 day; 96%).²
- These steps are critical, as many patients drop out of care early in the process.

References:

¹ U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 3. Published January 2021. Accessed January 12, 2022. <https://www.hiv.va.gov/pdf/HIV-Test-Results-2021-508.pdf>

² Bacon O, et al. The Rapid ART Program Initiative for HIV Diagnoses (Rapid) in San Francisco. Paper presented at CROI 2018. <http://www.croiwebcasts.org/p/2018croi/93> ↗

Speaker's Notes, Slide 47:

- State laws govern policies on HIV reporting, so each provider should be aware of guidelines and requirements in their own state.¹
- Documentation must include test results, counseling that was provided, assessment of the patient's emotional and mental status, and referrals and follow-ups scheduled.²

Reference:

¹ Centers for Disease Control and Prevention. State HIV laws that address high impact prevention efforts. Updated December 14, 2018. Accessed January 8, 2019. <https://www.cdc.gov/hiv/policies/law/states/index.html>

² U.S. Department of Veterans Affairs Veterans Health Administration. Delivering HIV test results. p. 2. Published November 2015. Accessed January 8, 2019. <https://www.hiv.va.gov/pdf/HIV-test-results.pdf>

Speaker's Notes, Slide 48:

- Health care providers have an important role to play in linking their patients to Partner Services.
- For patients who are being tested for HIV or STIs, health care providers can:
 - Talk with your patients about Partner Services and let them know that if they test positive for a reportable disease, they may be contacted by someone from the health department.
 - Discuss how Partner Services can help your patients and their sexual or injection-drug-use partners through early access to testing, treatment, and other services.
 - Emphasize the importance of participating in the Partner Services process as a way to help stop the transmission of HIV and STIs.
 - Conduct brief discussions with your patients on how to reduce high-risk sexual and substance use behaviors.
- A brochure with additional information about Partner Services can be obtained by visiting CDC's *HIV Nexus* at cdc.gov/HIVNexus.

Speaker's Notes, Slide 49:

- Starting the conversation about Partner Services is also important for patients who are newly diagnosed with HIV.
- For these patients, Partner Services can provide linkage to treatment and care, risk-reduction counseling, and other services.
- For partners who test negative, Partner Services can provide information on various HIV-prevention methods, including pre-exposure prophylaxis (PrEP), condoms, and other sexual and substance use options. For partners at high risk for HIV, consider PrEP; when taken as prescribed, PrEP is highly effective for preventing HIV from sex or injection drug use.
- Additionally, access to other services may lead to reductions in high-risk sexual and substance use behaviors.
- A brochure with additional information for patients about Partner Services can be obtained by visiting CDC's *HIV Nexus* at cdc.gov/HIVNexus.

Speaker's Notes, Slide 50:

Let's review a little of what we've discussed.

Speaker's Notes, Slide 51:

- Let's review the information covered in this presentation.
- Health care providers are on the front lines of improving HIV screening rates:
 - Recent advances in HIV tests now allow for earlier HIV diagnosis.
 - Early HIV detection and treatment are correlated with reduced HIV morbidity, mortality, and transmission.

- To stay as healthy as possible, people with HIV should know their HIV status, be linked to care, adhere to antiretroviral therapy, and remain engaged in care.
- Various tools and resources are available to assist health care providers with incorporating HIV testing into their clinical practice. Some resources are available on CDC's *HIV Nexus*.
- Every patient is an opportunity for health care providers to make a difference in HIV diagnosis, prevention, treatment, and care.