COMPLIMENTARY GLOBAL WEBINAR

Ending the HIV Epidemic: Partnering for Success

Thursday, November 30, 2023 1:00 – 2:00 PM ET 7:00 – 8:00 PM CET



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MODERATOR

NORMAN MOORE, PHD

Director, Medical Affairs Infectious Diseases, North America Abbott Scarborough, ME

Disclosures

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Objectives

- Review risk factors and clinical presentations suggestive of HIV
- Discuss practical methods to implement and improve access for HIV screening
- Examine options for testing, treatment and prevention
- Assess strategies for linking and keeping patients in care

HIV Disease is Not a Thing of the Past

Current U.S. Epidemiology

1.2 million persons in the U.S. living with HIV 1

- **58%**, aged 13 - 34 years¹

1 in 8 are unaware of their HIV serostatus ¹

Generate ~40% of new infections²

In 2021: **36,136** new infections in the U.S.¹

2. Li Z, Purcell DW, Sansom SL, et al. Vital Signs: HIV Transmission Along the Continuum of Care - United States, 2016. MMWR Morb Mortal Wkly Rep. 2019 Mar 22;68(11):267-272.

^{1.} HIV.gov. U.S. Statistics. <u>https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics/</u>, updated Oct 3 2023.

Estimated HIV Incidence among Persons Aged ≥13 Years, by Area of Residence 2019—United States and Puerto Rico



Note. Estimates were derived from a CD4 depletion model using HIV surveillance data. Estimates rounded to the nearest 100 for estimates >1,000 and to the nearest 10 for estimates ≤1,000 to reflect model uncertainty. †Total estimate for the United States does not include data for Puerto Rico.

CDC. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Estimated HIV Incidence and Prevalence in the United States, 2010–2019, accessed Nov 14, 2023.

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⁺Total estimate for the United States does not include data for Puerto Rico.

CDC. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Estimated HIV Incidence and Prevalence in the United States, 2010–2019, accessed Nov 14, 2023.

HIV Disease is Not a Thing of the Past

Current Global Epidemiology

39 million persons worldwide living with HIV

- Females 15-24 made up **46%** of new infections in 2022

40.4 million AIDS related deaths since the start of the pandemic in 1981 In 2022: **1.3 million** new infections worldwide

- 49% increase in new HIV infections in Eastern Europe and central Asia since 2010

American Foundation for AIDS Research (amfAR). HIV/AIDS in the World. 2022. https://www.amfar.org/about-hiv-aids/statistics-worldwide/, accessed Nov 14, 2023.

HIV Global and Regional Prevalence (Current Infections) 2022

Adults and children estimated to be living with HIV, 2022

North America and western and central Europe

- Caribbean
- 🕖 Latin America
- Eastern Europe and central Asia
- Middle East and North Africa
- Western and central Africa
- Eastern and southern Africa
- Asia and the Pacific



HIV Global and Regional Incidence (New Infections) 2022

Estimated adults and children newly infected with HIV, 2022

North America and western and central Europe
Caribbean
Latin America
Eastern Europe and central Asia
Middle East and North Africa
Western and central Africa
Eastern and southern Africa
Asia and the Pacific



UNAIDS Core Epidemiology Slides, 2022. Core epidemiology slides | UNAIDS

From the Past to Future | Ending the Epidemic



1. Gottlieb MS, et al. MMWR June 5, 1981/ 30:250-252.

- 2. HIV.gov. A Timeline of HIV and AIDS. 1983. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-1983
- 3. HIV.gov. A Timeline of HIV and AIDS. 1985. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-1985
- 4. HIV.gov. A Timeline of HIV and AIDS. 1987. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-1987
- 5. HIV.gov. A Timeline of HIV and AIDS. 1990. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-1990
- 6. Food and Drug Administration. FDA approves first viral-load test. AIDS Alert. 1996 Aug;11(8):94.
- 7. HIV.gov. A Timeline of HIV and AIDS. 2006. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-2006
- 8. HIV.gov. A Timeline of HIV and AIDS. 2012. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-2012
- 9. HIV.gov. FDA approves first rapid diagnostic test to detect both HIV-1 antigen and HIV-1/2 antibodies. Aug 8, 2013.
- 10. The Lancet HIV. <u>U=U taking off in 2017.</u> Lancet HIV. 2017 Nov;4(11):e475.

HIV Treatment as Prevention



Must take ART to <u>achieve</u> and <u>maintain</u> undetectable viral load With an undetectable HIV count, there is no risk of transmitting HIV to sexual partner

PANELISTS



Sean Doucette

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Disclosures

• Doucette

• Speaker honorarium for this program - Abbott

Ramgopal

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• Van Der Pol

- Research Grants to my Institution:
 - NIH
 - Abbott Molecular
 - BD Diagnostics
 - BioFire
 - Cepheid
 - Cue
 - FIND
 - Hologic
 - Rheonix
 - Roche Molecular

- Salary/Consulting Honoraria:
 - UAB
 - FDA
 - Abbott Molecular
 - BD Diagnostics
 - Preventx
 - Roche Molecular

It is a duty of academicians and experienced scientists paid using tax-payer dollars to advise industry in bringing forward new technologies to advance medicine and public health. Not doing so would be detrimental to the public interest by limiting access to expertise. I have several disclosures, but none represents a conflict of interest as my primary interest is public health.

HIV CLINICAL PERSPECTIVES What are the clinical presentations of HIV?

What are the clinical presentations of HIV?



Pre-HAART v Post-HAART



HAART, highly active antiretroviral therapy

Image:https://www.amboss.com/us/knowledge/human-immunodeficiency-virus-infection

HIV CLINICAL PERSPECTIVES

What are some of the risk factors for HIV? Which of these do you attribute to the delay in diagnosis?

Effect of Syphilis Infection on Risk of HIV among Sexual Minority Men

Author &Year	RR (95%CI)	%Weight
Lam 2017	0.95 (0.13, 6.9	94) 1.71
Page-Shafer 1997	1.11 (0.52, 2.3	34) 5.56
Pathela 2013	1.27 (0.49, 3.3	29) 4.52
Jin 2010	1.37 (0.33, 5.6	59) 2.82
Jia 2015	- 1.47 (1.09, 1.9	8.09
van Griensven 2013	• <u>1.82 (1.05, 3.</u>	15) 6.71
Cheung 2016	• 1.90 (0.70, 5.1	16) 4.32
Lam 2017 -	2.50 (1.44, 4.3	34) 6.70
Solomon 2014 -	2.60 (1.60, 4.3	22) 7.09
Li 2012 -	2.62 (1.53, 4.4	49) 6.78
Yang 2010 —	2.82 (1.31, 6.0	5.46
Wang 2014b —	2.96 (1.31, 6.3	70) 5.19
Thienkrua 2016b	3.16 (1.73, 5.3	6.40
Zhao 2013	+ 3.38 (1.13, 10	.11) 3.91
Beymer 2016	3.41 (1.78, 6.9	56) 6.11
Meireles 2015a	• 3.89 (0.47, 32	.19) 1.55
Desai 2017	4.10 (2.00, 8.4	40) 5.74
Giuliani 2014	→→ 7.71 (5.00, 11	.89) 7.39
Xu 2010 —	10.06 (1.20, 8	4.56) 1.53
Xu 2013		7.02) 2.41
Overall (I-squared = 67.9%, p = 0.000)	2.68 (2.00, 3.5	58) 100.0
NOTE: Weights are from random effects analysis		
.1 .5 1 1.	2 5 10	

Malekinejad M, Barker EK, Merai R, et al. Sex Transm Dis. 2021

Effect of Gonorrhea Infection on Risk of HIV among Sexual Minority Men

Author_Yr		ES (95% CI)	Weight
Lam 2017		1.07 (0.68, 1.68)	10.31
Lam 2017 -		1.41 (0.59, 3.37)	7.77
Page-Shafer 1997		1.51 (0.90, 2.54)	9.95
Beymer 2016		1.65 (1.17, 2.31)	10.90
Giuliani 2014		1.66 (1.01, 2.73)	10.07
Desai 2017		2.10 (1.40, 3.15)	10.57
van Griensven 2013	—•—	2.15 (1.29, 3.58)	9.99
Cheung 2016		2.30 (1.40, 3.78)	10.07
Harrison 1999		4.50 (1.10, 18.41)	5.03
Jin 2010		7.12 (2.04, 24.85)	5.73
Sanders 2013		→ 14.70 (8.30, 26.03)	9.62
Overall (I-squared = 84.2%, p = 0.000)	\diamond	2.38 (1.56, 3.61)	100.00
NOTE: Weights are from random effects analysis			
.1 .5	1 1.5 2 5	10	

Malekinejad M, Barker EK, Merai R, et al. Sex Transm Dis. 2021

Effect of Chlamydia Infection on Risk of HIV among Sexual Minority Men



Malekinejad M, Barker EK, Merai R, et al. *Sex Transm Dis.* 2021

HIV SCREENING / KNOW YOUR STATUS

What approach can providers or health systems take to increase the initiative of knowing your status and avoid missed opportunities?

Potential Barriers to Knowing Your Status

Barriers to diagnosis:

- Clinicians may be uncomfortable asking questions about sexual exposure, IVDU
- PCP's may not be aware of high-risk behavior in patients they know well
- Patients may not feel they are high risk
- Clinicians may assume validity of previously negative HIV test even in the high-risk populations

Barriers to care:

- Perceived discrimination from HCPs
- Lack of guidance and follow-up
- Clinic time or location inconvenience
- Privacy disclosure concerns
- Psychological burden of committing to HIV care
- Concerns about care and ART



HIV SCREENING / KNOW YOUR STATUS

How is the HIV acute phase defined and what is the importance of early detection?



The acute phase of HIV

- Acute HIV infection is the earliest stage of HIV infection, and it generally develops within 2 to 4 weeks after infection with HIV
- Early detection is important for improved long-term health outcomes for earlier treatment therefore reducing the risk of AID and non-AIDS health outcomes (heart disease, kidney failure, liver disease and cancer)
- Prevent spread to other partners
- Reduction in the size of latent HIV reservoir
- Typical lag time from infection to diagnosis
 - ~ 3 years



CDC. HIV Basics. https://www.cdc.gov/hiv/basics/whatishiv.html, Jun 30, 2022.

NIH. HIVInfo. The Stages of HIV Infection. <u>https://hivinfo.nih.gov/understanding-hiv/fact-sheets/stages-hiv-infection</u>, Aug 20, 2021.

Gbadamosi SO, Trepka MJ, Dawit R, Jebai R, Sheehan DM. A Systematic Review and Meta-analysis to Estimate the Time from HIV Infection to Diagnosis for People with HIV. AIDS Rev. 2022 Mar 1;24(1):32-40. doi: 10.24875/AIDSRev.21000007. PMID: 34077404; PMCID: PMC8636511.

What approaches help improve detection of HIV in the acute phase?

- Increased Awareness
 - Clinical Suspicion should be low given the signs and symptoms of an acute HIV infection
 - Rashes, mucocutaneous ulcers, ill-defined febrile illness, and lymphadenopathy should increase the suspicion of HIV infection
- Routine Testing Protocols
 - Building rapport with patients and discussing sexual activity and IVDU
- Those patients with high-risk exposure or who have had a recent STI should also warrant suspicion for HIV



HIV SCREENING / KNOW YOUR STATUS

Can you describe the evolution of HIV testing and what that means for diagnosis today?

Types of HIV Tests Available

Antibody Test

Antigen/Antibody Test

Nucleic Acid Test (NAT)

CDC. Types of HIV Tests. https://www.cdc.gov/hiv/basics/hiv-testing/test-types.html, updated June 22, 2022.

Rapid Point-of-Care Testing Benefit

<u>Rapid Test</u>: Quick screening option for HIV that takes ~20 minutes.¹

Does not confirm HIV diagnosis alone, confirmatory test required.¹

Used in all clinical settings, best utilized in nonclinical settings for outreach initiatives to facilitate rapid entry to care.²

Estimated about 10.3 billion virions produced every day in people who are not on HIV treatment.³



3. AIDSmap/Hughson. <u>HIV Lifecycle</u>, Nov 2020.

^{1.} Verywell / Emily Roberts. https://www.verywellhealth.com/hiv-diagnosis-3132731

^{2.} CDC. How Does Routine HIV Screening Benefit My Patients? https://www.cdc.gov/hiv/clinicians/screening/patient-benefits.html, Mar 8, 2023.

HIV SCREENING / KNOW YOUR STATUS

How do you decide what test to run based on the individual and risk factors?

How do you decide what test to run based on the individual and risk factors?

- Screening for all adult patients should be offered at least once in their lifetime
- Testing high-risk patients
 - MSM
 - Bisexual men
 - Partners Living with HIV
 - IVDU
- Testing for patient with recent exposure
- Testing options should be discussed with the patient



How do you decide what test to run based on the individual and risk factors?

Diagnostic Algorithm:

• Screening:

 4th generation combined antigen/antibody immunoassay with a confirmatory antibody-only HIV-1/HIV-2 differentiation immunoassay, followed by HIV viral testing if there is a discrepancy

Acute or early HIV infection: RT-PCR viral load test and antigen/antibody test

- Negative Ag/Ab test and undetectable viral load = negative HIV
- Negative Ag/Ab test and detectable viral load = early HIV infection
- Positive Ag/Ab test and detectable viral load = early or established HIV infection

Very recent exposure

- Detectable viremia develops 10-15 days after infection
- If initial testing is negative repeat testing 1-2 weeks later

PrEP Patients

- Any detectable load is suggestive of new HIV infection



CDC. HIV Testing. <u>https://www.cdc.gov/hiv/testing/index.html</u>, updated Jun 9, 2022.

CDC and Prevention and Association of Public Health Laboratories. Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Available at http://stacks.cdc.gov/view/cdc/23447. Published June 27, 2014.





LINKAGE TO CARE / KEEPING IN CARE

What is your testing site's process for linking patients to care, and which have helped improve success rates?

Linkage to Care and Tools for Success

Facilitators of Patient Care:

- Advocacy of HIV-positive counseling
- Standardization of quality HIV care across clinics
- Peer referral and accompaniment
- Patient education on HIV and treatments



U=U

Undetectable = Untransmittable

- Achieve and maintain an undetectable viral load by means of ART as prescribed
 - Can't sexually transmit the virus to others
- Viral load testing is essential in treatment for both the patient and their ability to spread the virus to others
 - high viral loads = high probability of spreading to others and poor disease progression



The more individuals who are virally suppressed will lead to a decrease in the new cases of HIV transmission.



LINKAGE TO CARE / KEEPING IN CARE

What are some strategies for keeping patients in care?

How to Communicate with Patients

Direct Non-Judgemental

Supportive

Provide a **welcoming environment** for your patients to feel comfortable.

Allow them to participate in the conversation of their testing/treatment and other conversations about substance use, sexual, and mental health.

Display and act on interest in **addressing barriers** to patient care.

CDC. Starting the Conversation: HIV Treatment & Care. A Guide for Providers. March 2021.

Preventing Loss to Follow Up

- Exploring opportunities to provide transportation, housing assistance, and insurance through local organizations.
- Connecting patients to other services they need, for example, women's health or primary care.
- Incorporating Case Managers into your practice to assist patients and providers.
- And so much more!

HIV PREVENTION / PrEP

Why is it important to continue regular screening while on PrEP?

Why is it important to continue regular screening while on PrEP?

- Importance of testing
 - Continued monitoring for infection to prevent the spread of HIV infections
 - Early detection and treatment
- POC Testing
 - Laboratory testing
 - Health Department
 - PCP office
 - Specialist office
 - Hospital
- HIV self-test ordered by the individual or clinician available in the USA
 - At-home test for antibodies
 - Mail-in HIV test
- Testing Outside the US
 - Serosurveillance for serum, plasma, and DBS can be stored and tested at a later date
 - Advantages vs Disadvantages of each specimen must be determined
 - Storage will depend on the specimen and the transportation available in the country



HIV PREVENTION / PrEP

What best practices do you suggest for sites when testing patients currently on PrEP?

What best practices do you suggest for sites when testing patients currently on PrEP?

- Patient counseling on adherence and importance of follow-up care and testing
 - Assessing barriers to PrEP adherence
- Follow up 1 month after starting medication, then every 3 months thereafter
- Quarterly screening for bacterial STIs
 - Importance of condom use
- Monitoring for HIV
- Continued risk assessment for PrEP indication annually
 - High-risk behavior assessment



ENDING THE HIV EPIDEMIC

Looking to the future, what is the role of comprehensive care in ending the HIV epidemic?

Thank you!

Additional Resources

- <u>https://www.uptodate.com/contents/acute-and-early-hiv-infection-clinical-manifestations-and-diagnosis?search=HIV&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1 #H98516166</u>
- <u>https://www.cdc.gov/hiv/pdf/prep_gl_patient_factsheet_acute_hiv_infection_english.pdf</u>
- <u>https://www.nih.gov/news-events/news-releases/early-hiv-diagnosis-treatment-important-better-long-term-health-outcomes</u>
- <u>https://www.cdc.gov/mmwr/volumes/66/wr/mm6647e1.htm</u>
- <u>https://www.cdc.gov/hiv/basics/prep/starting-stopping-prep.html</u>
- <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4753635/#:~:text=Major%20barriers%20to%20linkage%20to%3B%20and%20(6)%20concerns%20about</u>
- <u>https://www.niaid.nih.gov/diseases-conditions/treatment-prevention</u>
- <u>https://www.uptodate.com/contents/hiv-pre-exposure-prophylaxis?search=PrEP%20and%20hiv&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H1478872892</u>
- https://www.ncbi.nlm.nih.gov/books/NBK305275/



Questions



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Questions



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- Double-check email address

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Recording

Within a few days following today's event, visit

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Ending the HIV Epidemic: Partnering for Success

Live Event: Thursday, November 30, 2023 | 1:00 - 2:00 PM Eastern Time P.A.C.E.[®] credit available until November 30, 2024 Florida Laboratory CE Credit available

On World AIDS Day, please join for an update on HIV successes and opportunities to eliminate the HIV epidemic. Key areas of focus include the importance of testing, the continuum of care for HIV patients, and impact when all groups involved collaborate effectively. All healthcare settings and community-based organizations are encouraged to take part in this session.

Presenters:



Barbara Van Der Pol, PhD, MPH

RECORDING

SLIDES



Sean Doucette



Moti Ramgopal, MD, FACP, FIDSA

The webinar will:

- Review risk factors and clinical presentations suggestive of HIV
- Discuss practical methods to implement and improve access for HIV screening
- Examine options for testing, treatment and prevention
- Assess strategies for linking and keeping patients in care

Ending the HIV Epidemic: Partnering for Success

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https://www.whitehatcom.com/Abbott_Evals/HIV_113023/Epidemic_113023_eval.html

