HIV Infection

This is a PDF version of the following document:
Module 1: STD Question Bank
Lesson 14: HIV Infection

You can always find the most up-to-date version of this document at https://www.std.uw.edu/go/2021-guidelines/hiv/core-concept/all.

References

- Barbee LA, Tat S, Dhanireddy S, Marrazzo JM. Implementation and Operational Research: Effectiveness and Patient Acceptability of a Sexually Transmitted Infection Self-Testing Program in an HIV Care Setting. J Acquir Immune Defic Syndr. 2016;72:e26-31.
[PubMed Abstract] -

- Bentsen C, McLaughlin L, Mitchell E, et al. Performance evaluation of the Bio-Rad Laboratories GS HIV Combo Ag/Ab EIA, a 4th generation HIV assay for the simultaneous detection of HIV p24 antigen and antibodies to HIV-1 (groups M and O) and HIV-2 in human serum or plasma. J Clin Virol. 2011;52 Suppl 1:S57-61.
[PubMed Abstract] -

- Bissessor M, Bradshaw CS, Fairley CK, Chen MY, Chow EP. Provision of HIV test results by telephone is both safe and efficient for men who have sex with men. Int J STD AIDS. 2017;28:39-44.
[PubMed Abstract] -

- Branson BM, Handsfield HH, Lampe MA, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep. 2006;55:1-17.
[PubMed Abstract] -

- Branson BM, Mermin J. Establishing the diagnosis of HIV infection: new tests and a new algorithm for the United States. J Clin Virol. 2011;52 Suppl 1:S3-4.
[PubMed Abstract] -

- Branson BM. Home sample collection tests for HIV infection. JAMA. 1998;280:1699-701.
[PubMed Abstract] -

- Branson BM. State of the art for diagnosis of HIV infection. Clin Infect Dis. 2007;45 Suppl 4:S221-5.
[PubMed Abstract] -

- Centers for Disease Control and Prevention (CDC). HIV Testing Technologies: CLIA-Waived Rapid HIV Tests.
[CDC] -

- Centers for Disease Control and Prevention (CDC). Technical Update on HIV-1/2 Differentiation Assays. August 12, 2016.

[CDC] -

- Centers for Disease Control and Prevention and Association of Public Health Laboratories. 2018 Quick reference guide: Recommended laboratory HIV testing algorithm for serum or plasma specimens. Published January 27, 2018.
[CDC] -

- Centers for Disease Control and Prevention and Association of Public Health Laboratories. Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Published June 27, 2014.
[CDC] -

- Centers for Disease Control and Prevention. Estimated HIV Incidence and Prevalence in the United States, 2010–2016. HIV Surveillance Supplemental Report. 2019;24(No. 1):1-89. Published February 2019.
[CDC] -

- Centers for Disease Control and Prevention. HIV-2 Infection Surveillance--United States, 1987-2009. MMWR Morb Mortal Wkly Rep. 2011;60:985-8.
[PubMed Abstract] -

- Chou R, Huffman LH, Fu R, Smits AK, Korthuis PT. Screening for HIV: a review of the evidence for the U.S. Preventive Services Task Force. Ann Intern Med. 2005;143:55-73.
[PubMed Abstract] -

- Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011;365:493-505.
[PubMed Abstract] -

- Cohen MS, Gay CL, Busch MP, Hecht FM. The detection of acute HIV infection. J Infect Dis. 2010;202 Suppl 2:S270-7.
[PubMed Abstract] -

- Cornett JK, Kirn TJ. Laboratory diagnosis of HIV in adults: a review of current methods. Clin Infect Dis. 2013;57:712-8.
[PubMed Abstract] -

- Eshleman SH, Khaki L, Laeyendecker O, et al. Detection of individuals with acute HIV-1 infection using the ARCHITECT HIV Ag/Ab Combo assay. J Acquir Immune Defic Syndr. 2009;52:121-4.
[PubMed Abstract] -

- Fiebig EW, Wright DJ, Rawal BD, et al. Dynamics of HIV viremia and antibody seroconversion in plasma donors: implications for diagnosis and staging of primary HIV infection. AIDS. 2003;17:1871-9.
[PubMed Abstract] -

- Flagg EW, Weinstock HS, Frazier EL, Valverde EE, Heffelfinger JD, Skarbinski J. Bacterial sexually transmitted infections among HIV-infected patients in the United States: estimates from the Medical Monitoring Project. Sex Transm Dis. 2015;42:171-9.
[PubMed Abstract] -

- Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect. 1999;75:3-17.
[PubMed Abstract] -

- Hall HI, Holtgrave DR, Maulsby C. HIV transmission rates from persons living with HIV who are aware and unaware of their infection. AIDS. 2012;26:893-6.
[PubMed Abstract] -

- Jones J, Weiss K, Mermin J, et al. Proportion of Incident Human Immunodeficiency Virus Cases Among Men Who Have Sex With Men Attributable to Gonorrhea and Chlamydia: A Modeling Analysis. Sex Transm Dis. 2019;46:357-63.
[PubMed Abstract] -

- Keating SM, Kassanjee R, Lebedeva M, et al. Performance of the Bio-Rad Geenius HIV1/2 Supplemental Assay in Detecting "Recent" HIV Infection and Calculating Population Incidence. J Acquir Immune Defic Syndr. 2016;73:581-588.
[PubMed Abstract] -

- Keaveney S, Sadlier C, O'Dea S, Delamere S, Bergin C. High prevalence of asymptomatic sexually transmitted infections in HIV-infected men who have sex with men: a stimulus to improve screening. Int J STD AIDS. 2014;25:758-61.
[PubMed Abstract] -

- Malloch L, Kadivar K, Putz J, et al. Comparative evaluation of the Bio-Rad Geenius HIV-1/2 Confirmatory Assay and the Bio-Rad Multispot HIV-1/2 Rapid Test as an alternative differentiation assay for CLSI M53 algorithm-I. J Clin Virol. 2013;58 Suppl 1:e85-91.
[PubMed Abstract] -

- Marks G, Crepaz N, Senterfitt JW, Janssen RS. Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs. J Acquir Immune Defic Syndr. 2005;39:446-53.
[PubMed Abstract] -

- Masciotra S, McDougal JS, Feldman J, Sprinkle P, Wesolowski L, Owen SM. Evaluation of an alternative HIV diagnostic algorithm using specimens from seroconversion panels and persons with established HIV infections. J Clin Virol. 2011;52 Suppl 1:S17-22.
[PubMed Abstract] -

- Miller WC, Rosenberg NE, Rutstein SE, Powers KA. Role of acute and early HIV infection in the sexual transmission of HIV. Curr Opin HIV AIDS. 2010;5:277-82.
[PubMed Abstract] -

- Mitchell EO, Stewart G, Bajzik O, Ferret M, Bentsen C, Shriver MK. Performance comparison of the 4th generation Bio-Rad Laboratories GS HIV Combo Ag/Ab EIA on the EVOLIS™ automated system versus Abbott ARCHITECT HIV Ag/Ab Combo, Ortho Anti-HIV 1+2 EIA on Vitros ECi and Siemens HIV-1/O/2 enhanced on Advia Centaur. J Clin Virol. 2013;58 Suppl 1:e79-84.
[PubMed Abstract] -

- Montesinos I, Eykmans J, Delforge ML. Evaluation of the Bio-Rad Geenius HIV-1/2 test as a confirmatory assay. J Clin Virol. 2014;60:399-401.
[PubMed Abstract] -

- Morin SF, Myers JJ, Shade SB, Koester K, Maiorana A, Rose CD. Predicting HIV transmission risk among HIV-infected patients seen in clinical settings. AIDS Behav. 2007;11:S6-16.
[PubMed Abstract] -

- Myers JJ, Kang Dufour MS, Koester KA, et al. Helping clinicians deliver consistent HIV prevention counseling to their HIV-infected patients. AIDS Care. 2013;25:640-5.

[PubMed Abstract] -

- Nasrullah M, Wesolowski LG, Meyer WA 3rd, et al. Performance of a fourth-generation HIV screening assay and an alternative HIV diagnostic testing algorithm. AIDS. 2013;27:731-7.
[PubMed Abstract] -

- Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Department of Health and Human Services. Considerations for antiretroviral use in special patient populations: acute and recent (early) HIV infection. December 18, 2019.
[HIV.gov] -

- Patel MR, Brooks JT, Tie Y, Garg S, Bradley H. Prevalence of Gonorrhea and Chlamydia Testing by Anatomical Site Among Men Who Have Sex With Men in HIV Medical Care, United States, 2013-2014. Sex Transm Dis. 2018;45:25-27.
[PubMed Abstract] -

- Pilcher CD, Tien HC, Eron JJ Jr, et al. Brief but efficient: acute HIV infection and the sexual transmission of HIV. J Infect Dis. 2004;189:1785-92.
[PubMed Abstract] -

- Pinkerton SD. How many sexually-acquired HIV infections in the USA are due to acute-phase HIV transmission? AIDS. 2007;21:1625-9.
[PubMed Abstract] -

- Richardson JL, Milam J, Stoyanoff S, et al. Using patient risk indicators to plan prevention strategies in the clinical care setting. J Acquir Immune Defic Syndr. 2004;37 Suppl 2:S88-94.
[PubMed Abstract] -

- Rieg G, Lewis RJ, Miller LG, Witt MD, Guerrero M, Daar ES. Asymptomatic sexually transmitted infections in HIV-infected men who have sex with men: prevalence, incidence, predictors, and screening strategies. AIDS Patient Care STDS. 2008;22:947-54.
[PubMed Abstract] -

- Rodger AJ, Cambiano V, Bruun T, et al. Sexual Activity Without Condoms and Risk of HIV Transmission in Serodifferent Couples When the HIV-Positive Partner Is Using Suppressive Antiretroviral Therapy. JAMA. 2016;316:171-81.
[PubMed Abstract] -

- Rosenberg NE, Pilcher CD, Busch MP, Cohen MS. How can we better identify early HIV infections? Curr Opin HIV AIDS. 2015;10:61-8.
[PubMed Abstract] -

- Schacker T, Collier AC, Hughes J, Shea T, Corey L. Clinical and epidemiologic features of primary HIV infection. Ann Intern Med. 1996;125:257-64.
[PubMed Abstract] -

- Smith MK, Rutstein SE, Powers KA, et al. The detection and management of early HIV infection: a clinical and public health emergency. J Acquir Immune Defic Syndr. 2013 Jul;63 Suppl 2:S187-99.
[PubMed Abstract] -

- Soni S, White JA. Self-screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in the human immunodeficiency virus clinic--high yields and high acceptability. Sex Transm Dis. 2011;38:1107-9.
[PubMed Abstract] -

- US Preventive Services Task Force.. Screening for HIV: recommendation statement. Ann Intern Med. 2005;143:32-7.
[PubMed Abstract] -

- Weintrob AC, Giner J, Menezes P, et al. Infrequent diagnosis of primary human immunodeficiency virus infection: missed opportunities in acute care settings. Arch Intern Med. 2003;163:2097-100.
[PubMed Abstract] -

- Wingood GM, DiClemente RJ, Mikhail I, et al. A randomized controlled trial to reduce HIV transmission risk behaviors and sexually transmitted diseases among women living with HIV: The WiLLOW Program. J Acquir Immune Defic Syndr. 2004;37 Suppl 2:S58-67.
[PubMed Abstract] -

- Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. HIV infection: detection, counseling, and referral. MMWR Recomm Rep. 2021;70(No. RR-4):1-187.
[2021 STI Treatment Guidelines] -

- Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. Screening recommendations and considerations referenced in treatment guidelines and original sources. MMWR Recomm Rep. 2021;70(No. RR-4):1-187.
[2021 STI Treatment Guidelines] -

Table 1. STI Screening Recommendations in Persons with HIV
Table 1.

Sexually Transmitted Infections (STIs) Screening Recommendations in Persons with HIV

STI	Screening Indications and Frequency
Chlamydia	• For sexually active individuals, screen at first HIV evaluation, and at least annually thereafter • More frequent screening might be appropriate depending on individual risk behaviors and the local epidemiology
Gonorrhea	• For sexually active individuals, screen at first HIV evaluation, and at least annually thereafter • More frequent screening might be appropriate depending on individual risk behaviors and the local epidemiology
Syphilis	• For sexually active individuals, screen at first HIV evaluation, and at least annually thereafter • More frequent screening might be appropriate depending on individual risk behaviors and the local epidemiology
Trichomonas	• Recommended for sexually active cisgender women at entry to care and at least annually thereafter
Herpes	• Type-specific HSV serologic testing should be considered for

STI	Screening Indications and Frequency
	• persons presenting for an STI evaluation (especially for those persons with multiple sex partners), persons with HIV infection, and men who have sex with men at increased risk for HIV acquisition
Hepatitis B	• Test for HBsAg and anti-HBc and/or anti-HBs at entry to care
Hepatitis C	• Serologic testing at initial evaluation • Annual HCV testing in men who have sex with men

NOTE: This table is based on recommendations in the 2021 Sexually Transmitted Infections Treatment Guidelines
Source:

- Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. HIV infection: detection, counseling, and referral. MMWR Recomm Rep. 2021;70(No. RR-4):1-187. [2021 STI Treatment Guidelines]
- Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. Screening recommendations and considerations referenced in treatment guidelines and original sources. MMWR Recomm Rep. 2021;70(No. RR-4):1-187. [2021 STI Treatment Guidelines]