### Comprehensive Primary Care for Adults With HIV

**Table 3: Recommended Laboratory Testing for Adults With HIV**

*Frequency Key: I = initial (baseline) visit; A = annual visit; N = as needed*

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<th>Laboratory Test</th>
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| HIV-1 RNA quantitative viral load           | • **Regular monitoring** is the most accurate and meaningful measure of effective ART.  
• Check every 3 to 6 months during years 1 and 2, and every 4 to 6 months thereafter.  
• Monitor every 1 to 3 months if adherence is unstable or patient has detectable viral load.                                                                 | I A N      |
| CD4 lymphocyte count                        | • Check every 3 to 6 months if CD4 count <200 cells/mm$^3$; not indicated if viral load is consistently undetectable (CD4 count ≥200 cells/mm$^3$).  
• Monitor every 3 months if diagnosis is recent (<2 years), viral load suppression is inconsistent, or CD4 count is close to or below 200 cells/mm$^3$.  
• See NYSDOH AI guideline *Virologic and Immunologic Monitoring in HIV Care.*                                                                 | I A N      |
| HIV-1 resistance testing (genotypic)        | • Perform at treatment initiation.  
• Perform if HIV RNA (viral load) is ≥500 copies/mL; archive genotype may be considered if viral load is <500 copies/mL.  
• Consult with an expert in HIV care in the event of treatment failure.                                                                 | I N        |
| G6PD                                         | • Screen for deficiency to avoid use of oxidant drugs, including dapsone, primaquine, sulfonamides.  
• Prevalence of G6PD deficiency is highest among people of African, Asian, or Mediterranean descent, but consider in all patients given diversity of backgrounds. | I          |
| Complete blood count                        | • For patients not taking zidovudine, check at initiation of ART and repeat as clinically indicated.  
• For patients taking zidovudine, check at initiation and 4 weeks after initiation; follow every 3 months for the first year, then every 6 months.  
• Consider with any change in medication.                                                                 | I A        |
| Estimated glomerular filtration rate        | • For patients taking TDF, check at initiation, then repeat at 4 weeks, 3 months, 6 months, and 12 months for the first year, then every 6 months thereafter.  
• For patients not taking TDF, check at initiation, at 6 months during the first year, then annually thereafter.  
• Check after initiation of medication with risk for renal disease (e.g., use of nonsteroidal anti-inflammatory agents, angiotensin-converting enzyme inhibitors).  
• Check if patient has history of diabetes or other renal diseases.                                                                 | I A N      |
| Hepatic panel:                               | • Aspartate aminotransferase  
• Alanine aminotransferase  
• Alkaline phosphatase  
• Total bilirubin  
• Check 3 months after initiation of ART, after initiating medication with risk for liver disease (e.g., statins, azoles), or if there is a history of viral hepatitis, and then at 12 months.  
• Check every year if patient is stable and without above risks.                                                                 | I A N      |
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| Random blood glucose (fasting or hemoglobin A1C if high) | • Check every 6 to 12 months if a patient has risk factors for diabetes (family history, obesity, use of protease inhibitors or integrase strand transfer inhibitors).  
  • If abnormal, repeat random glucose as a fasting glucose or A1C.  
  • Results are used to diagnose diabetes. See Standards of Medical Care in Diabetes—2019 Abridged for Primary Care Providers. | I A N      |
| Tuberculosis screening                              | • Obtain IGRA TB test (such as T-SPOT or QuantiFERON-TB) or tuberculin skin test (commonly known as PPD) at baseline for diagnosis of latent TB infection, unless the patient has previously tested positive for or has documented TB.  
  • Repeat annually for patients at risk (e.g., unstable housing, incarceration, travel, or immigration).  
  • Consider preventive therapy for patients with ≥5 mm reaction to PPD. See CDC TB Treatment for Persons with HIV and DHHS Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV > Mycobacterium tuberculosis Infection and Disease. | I A        |
| Hepatitis A                                         | • Anti-hepatitis A immunoglobulin  
  • Repeat after vaccination to ensure immunity.  
  • See NYSDOH AI guideline Prevention and Management of Hepatitis A Virus Infection in Adults With HIV > Transmission and Prevention for testing and vaccination recommendations. | I N        |
| Hepatitis B                                         | • Surface antibody  
  • Surface antigen  
  • Core antibody  
  • If HBsAg-positive, perform an HBV DNA viral load test.  
  • Repeat anti-HBs test after vaccination to ensure immunity.  
  • See NYSDOH AI guideline Prevention and Management of Hepatitis B Virus Infection in Adults With HIV > HBV Screening and Diagnosis and > HBV Vaccination for testing and vaccination recommendations. | I N        |
| Hepatitis C                                         | • HCV antibody  
  • HCV RNA quantitative viral load  
  • If patient was previously treated for HCV or is antibody-positive, perform HCV viral load test.  
  • Check at entry to care; repeat as clinically indicated for patients with exposure risk.  
  • See NYSDOH AI guideline Hepatitis C Virus Screening, Testing, and Diagnosis in Adults > HCV Testing Sequence and Diagnosis. | I N        |
| Measles titer                                       | • Vaccinate if patient is not immune and has a CD4 count >200 cells/mm³. | I          |
| Varicella titer                                      | • For patients with no evidence of immunity and CD4 count >200 cells/mm³, consider vaccination for chicken pox (Varivax; 2 doses, 3 months apart); engage patients in shared decision-making, taking into consideration the potential risks of a live vaccine.  
  • Live vaccines are contraindicated for patients with CD4 counts <200 cells/mm³.  
  • For patients ≥50 years old, regardless of varicella titer status or CD4 cell count, consider vaccination for herpes zoster with recombinant zoster virus (Shingrix; 2 doses, 2 to 6 months apart). | I          |
| Urinalysis                                          | • Evaluate for proteinuria.  
  • Check for symptoms of UTI or change in creatinine or other urinary symptoms (including glucosuria for patients on tenofovir).  
  • See NYSDOH AI guideline Laboratory Monitoring for Adverse Effects of ART. | I A N      |
| Urine pregnancy test                                | • Perform for all individuals of childbearing potential who are sexually active.  
  • Repeat at patient request. | I N        |
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<td>Lipid panel</td>
<td>• Perform at least every 3 years if patient has increased risk for CVD. • Consider annual screening if patient is taking protease inhibitors. • For adults &gt;75 years old, initiate discussion of possible benefits of age-appropriate preventive therapies in the context of comorbidities and life expectancy. • HIV is considered a risk-enhancing factor for CVD; clinicians may opt to perform more frequent lipid testing in patients with cardiovascular comorbidities.</td>
<td>I +/- N</td>
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<tr>
<td>Serum thyroid-stimulating hormone</td>
<td>• Insufficient evidence exists for routine screening of nonpregnant adults. • Adults with HIV have higher incidence of thyroid dysfunction than those without HIV. Discuss annual screening. See USPSTF Thyroid Dysfunction: Screening.</td>
<td>I +/-</td>
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<tr>
<td>Gonorrhea and chlamydia</td>
<td>• Perform baseline testing at oral, anal, urethral, and cervical sites for MSM and TGW and others as indicated by individual exposure. • Repeat based on risk factors and sites of exposure. • Repeat every 3 months for MSM and TGW. See NYSDOH STI self-collection outside of a clinic setting in New York State (NYS) Question &amp; Answer. • See Update to the CDC’s Treatment Guidelines for Gonococcal Infection, 2020.</td>
<td>I A N</td>
</tr>
<tr>
<td>Syphilis</td>
<td>• Use same laboratory test consistently. • Repeat at least annually • Repeat every 3 months for patients with risk of exposure (e.g., MSM). See NYSDOH STI self-collection outside of a clinic setting in New York State (NYS) Question &amp; Answer.</td>
<td>I A N</td>
</tr>
<tr>
<td>Trichomonas</td>
<td>• Perform screening test if the patient has a vagina and is sexually active.</td>
<td>I A N</td>
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<tr>
<td>HLA-B*5701</td>
<td>• Must be performed before initiation of abacavir, otherwise not routine.</td>
<td>N</td>
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Abbreviations: anti-HBs, hepatitis B surface antibody; ART, antiretroviral therapy; CDC, Centers for Disease Control and Prevention; MSM, men who have sex with men; CVD, cardiovascular disease; DHHS, U.S. Department of Health and Human Services; FDA, U.S. Food and Drug Administration; G6PD, glucose-6-phosphate dehydrogenase; HBsAg, hepatitis B surface antigen; HBV, hepatitis B virus; HCV, hepatitis C virus; IGRA, interferon-gamma release assay; MSM, men who have sex with men; NYSDOH AI, New York State Department of Health AIDS Institute; PPD, purified protein derivative; TB, tuberculosis; TDF, tenofovir disoproxil fumarate; TGW, transgender women; USPSTF, U.S. Preventive Services Task Force; UTI, urinary tract infection.