Table 3. Laboratory Monitoring Schedule for Patients Prior to and After Initiation of Antiretroviral Therapy (Updated January 10, 2011)

	Entry into care	Follow-up before ART	ART initiation or modification[1]	2–8 weeks post-ART initiation or modification	Every 3–6 months	Every 6 months	Every 12 months	Treatment failure	Clinically indicated
CD4 count	√	every 3–6 months	√		√	In clinically stable patients with suppressed viral load, CD4 count can be monitored every 6–12 months (see text)		√	√
Viral load	√	every 3–6 months	√	√[2]	√[3]			√	√
Resistance testing	√		√[4]					√	√
HLA-B*5701 testing			√ if considering ABC						
Tropism testing			√ if considering a CCR5 antagonist					√ if considering a CCR5 antagonist or for failure of CCR5 antagonist-based regimen	√
Hepatitis B serology[5]	√		√ may repeat if HBsAg (-) and HBsAb (-) at baseline						√
Basic chemistry[6]	√	every 6–12 months	√	√	√				√
ALT, AST, T. bilirubin	√	every 6–12 months	√	√	√				√
CBC with differential	√	every 3–6 months	√	√ if on ZDV	√				√
Fasting lipid profile	√	if normal, annually	√	√ consider 4–8 weeks after starting new ART		√ if abnormal at last measurement	√ if normal at last measurement		√
Fasting glucose	√	if normal, annually	√		√ if abnormal at last measurement	√ if normal at last measurement			√
Urinalysis[7]	√		√			√ if on TDF[8]	√		√
Pregnancy test			√ if starting EFV						√

[1]ARV modification may be done for treatment failure, adverse effects, or simplification.
[2]If HIV RNA is detectable at 2–8 weeks, repeat every 4–8 weeks until suppression to <200 copies/mL, then every 3–6 months.
[3]For adherent patients with suppressed viral load and stable clinical and immunologic status for >2–3 years, some experts may extend the interval for HIV RNA monitoring to every 6 months.
[4]For ART-naïve patients, if resistance testing was performed at entry into care, repeat testing is optional; for patients with viral suppression who are switching therapy for toxicity or convenience, resistance testing will not be possible and therefore is not necessary.
[5]If HBsAg is positive at baseline or prior to initiation of ART, TDF + (FTC or 3TC) should be used as part of ARV regimen to treat both HBV and HIV infections. If HBsAg and HBsAb are negative at baseline, hepatitis B vaccine series should be administered.
[6] Serum Na, K, HCO_3, Cl, BUN, creatinine, glucose (preferably fasting); some experts suggest monitoring phosphorus while on TDF; determination of renal function should include estimation of creatinine clearance using Cockcroft-Gault equation or estimation of glomerular filtration rate based on MDRD equation.
[7]For patients with renal disease, consult "Guidelines for the Management of Chronic Kidney Disease in HIV-Infected Patients: Recommendations of the HIV Medicine Association of the Infectious Diseases Society of America" *[1]*.
[8] More frequent monitoring may be indicated for patients with increased risk of renal insufficiency, such as patients with diabetes, hypertension, etc.

Acronyms: 3TC = lamivudine, ABC = abacavir, ALT = alanine aminotransferase, ART = antiretroviral therapy, AST = aspartate aminotranserase, CBC = complete blood count, EFV = efavirenz, FTC = emtricitabine, HBsAb = hepatitis B surface antibody, HBsAg = hepatitis B surface antigen, HBV = hepatitis B virus, MDRD = modification of diet in renal disease (equation), TDF = tenofovir, ZDV = zidovudine