GUIDELINES FOR THE USE OF ANTIRETROVIRAL AGENTS IN ADULTS AND ADOLESCENTS WITH HIV

Developed by the HHS Panel on Antiretroviral Guidelines for Adults and Adolescents—A Working Group of the NIH Office of AIDS Research Advisory Council (OARAC)

How to Cite the Adult and Adolescent Antiretroviral Guidelines:

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. Available at https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv. Accessed (insert date) [insert page number, table number, etc., if applicable].

It is emphasized that concepts relevant to HIV management evolve rapidly. The Panels have a mechanism to update recommendations on a regular basis, and the most recent information is available on the Clinicalinfo website (https://clinicalinfo.hiv.gov).

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Table 1. Outline of the Guidelines Development Process

Updated: September 24, 2026
Reviewed: September 24, 2026

Topic	Comment
Goal of the Guidelines	Provide guidance to HIV care practitioners on the optimal use of antiretroviral (ARV) medications for the treatment of HIV in adults and adolescents in the United States.
Panel Members	The U.S. Department of Health and Human Services (HHS) Panel on Antiretroviral Guidelines for Adults and Adolescents (the Panel) is composed of approximately 50 voting members who have expertise in HIV care and research, and includes at least one representative from each of the following HHS agencies: Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration (FDA), Health Resources and Services Administration (HRSA), and National Institutes of Health (NIH). Approximately two-thirds of the Panel members are nongovernmental scientific members from academia or clinical practice, with expertise in such areas as HIV and antiretroviral therapy (ART) clinical care, research, virologic failure and drug resistance, adolescent medicine, HIV immunology, viral hepatitis, women's health, biostatistics, and pharmacology. The Panel also includes four to five community members with knowledge of HIV treatment and care. The U.S. government representatives are appointed by their respective agencies. Nongovernmental members are selected after an open call for nominations. Each member serves on the Panel for a 4-year term, with an option for reappointment for an additional term. Panel members lead or serve on up to four writing teams in drafting and revising the guidelines chapters. See the Panel Roster for a list of current Panel members. On occasion, the Panel invites outside consultants with expertise in specific topics (e.g., HIV-2, transplantation, pharmacology) to assist in writing the guidelines.
Financial Disclosure	All members of the Panel submit a written financial disclosure annually, reporting any association with manufacturers of ARV drugs or diagnostics used to manage HIV. The latest version of the Financial Disclosure list is available on the Clinicalinfo website.
Users of the Guidelines	HIV treatment providers, infectious disease specialists, other health care professionals, and trainees.
Developer	Panel on Antiretroviral Guidelines for Adults and Adolescents—a working group of the Office of AIDS Research Advisory Council (OARAC)
Funding Source	Office of AIDS Research, NIH
Evidence Collection	The recommendations in the guidelines are based on studies published in peer-reviewed journals or data available in FDA drug labels. On some occasions, particularly when new information may affect patient safety, unpublished data presented at major conferences or prepared by the FDA and/or manufacturers as warnings to the public may be used as evidence to revise the guidelines. When sufficient data are not available to provide guidance, the Panel occasionally makes recommendations based on expert opinion.
Recommendation Grading	As described in Table 2 below
Method of Synthesizing Data	Each section of the guidelines is assigned to a working group of Panel members with expertise in the section's area of interest. The working groups synthesize available data and propose recommendations to the Panel. The Panel discusses all proposals during monthly teleconferences. To be included in the guidelines, a recommendation must be endorsed by a majority of voting members. Recommendations endorsed by the Panel are included in the guidelines.

Table 1. Outline of the Guidelines Development Process

Topic	Comment
Other Guidelines	These guidelines focus on ART for adults and adolescents with HIV. For a more detailed discussion on the use of ART in children and prepubertal adolescents (those with sexual maturity ratings of 1 to 3), clinicians should refer to the Pediatric Antiretroviral Guidelines. These guidelines also include a brief discussion on the management of women of childbearing potential and pregnant women. For more details on the use of ARV drugs during pregnancy, see the Perinatal Guidelines.
Update Plan	The Panel meets monthly by teleconference to review data that may warrant modification of the guidelines. Updates may be prompted by new drug approvals (or new indications, dosing formulations, or frequency of dosing), new safety or efficacy data, or other information relating to ARV drugs that may have an impact on the clinical care of people with HIV. In the event of new data of clinical importance, the Panel may post an interim announcement with recommendations on the Clinicalinfo website until the guidelines can be updated with the appropriate changes. Updated guidelines are available on the Clinicalinfo website.
Public Comments	A 2-week public comment period follows the release of the updated guidelines on the Clinicalinfo website. The Panel reviews comments to determine whether additional revisions to the guidelines are indicated. The public also may submit comments to the Panel at any time at HIVinfo@NIH.gov.

Table 2. Rating Scheme for Recommendations

Updated: September 24, 2026
Reviewed: September 24, 2026

Recommendations in these guidelines are based on scientific evidence and expert opinion. Each recommendation statement includes a letter **(A**, **B**, or **C)** that represents the strength of the recommendation and a Roman numeral **(I**, **II**, or **III)** that represents the quality of the evidence that supports the recommendation (see Table 2 below).

Strength of Recommendation	Quality of Evidence for Recommendation
A: Strong recommendation for the statement **B:** Moderate recommendation for the statement **C:** Weak recommendation for the statement	**I:** One or more randomized trials with clinical outcomes and/or validated laboratory endpoints **II:** One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes **III:** Expert opinion

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation[a]

Updated: October 27, 2026
Reviewed: October 27, 2026

This table provides general guidance for laboratory monitoring for people with HIV before and after antiretroviral therapy (ART) initiation. Clinicians should use their clinical judgment to determine the monitoring frequency for an individual person based on clinical needs. This schedule is not intended to be a guide on how often people with HIV should undergo clinical evaluation, as some individuals may need to be seen more frequently to accomplish other aspects of clinical care. Please refer to Table 4 for laboratory monitoring guidance if ART initiation is deferred.

Laboratory Test	Timepoint or Frequency of Testing							
	Entry Into Care	ART Initiation[b] or Modification	After ART Initiation or Modification	Every 3–4 Months	Every 6 Months	Every 12 Months	Treatment Failure	Clinically Indicated
HIV Antigen/ Antibody Test	✓ If HIV diagnosis not confirmed							
HIV Viral Load	✓	✓	✓[c] At 4–8 weeks	✓[d]	✓[d]		✓	✓

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

Laboratory Test	Timepoint or Frequency of Testing							
	Entry Into Care	ART Initiation[b] or Modification	After ART Initiation or Modification	Every 3–4 Months	Every 6 Months	Every 12 Months	Treatment Failure	Clinically Indicated
CD4 Count	✓	✓	✓ 3 months (after ART initiation only)	✓[e] If CD4 count is <300 cells/mm^3	✓ During the First 1–2 Years on ART and With Viral Suppression, if CD4 Count Is ≥300 Cells/mm^3: • Every 6 months After 1–2 Years on ART With Consistently Suppressed Viral Load and CD4 Count ≥300 Cells/mm^3: • Optional unless clinically indicated		✓ Monitor CD4 count every 3–6 months.	✓
Genotypic Resistance Testing (PR/RT Genes)[f]	✓	✓					✓	✓
Genotypic Resistance Testing (Integrase Genes)[f]	✓ If transmitted INSTI resistance is suspected or if there is a history of CAB-LA use for PrEP or INSTI use for PEP	✓ If transmitted INSTI resistance is suspected or if there is a history of INSTI use					✓ If there is a history of INSTI use for treatment or prevention	✓

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

Laboratory Test	Timepoint or Frequency of Testing							
	Entry Into Care	ART Initiation[b] or Modification	After ART Initiation or Modification	Every 3–4 Months	Every 6 Months	Every 12 Months	Treatment Failure	Clinically Indicated
Tropism Testing		✓ If considering a CCR5 antagonist					✓ If considering a CCR5 antagonist, or upon virologic failure on a CCR5 antagonist	✓
HLA-B*5701 Testing		✓ If considering ABC (perform once; keep result in health record)						
Hepatitis B Serology (HBsAb, HBsAg, HBcAb total)[g,h,i] Also see Hepatitis B Virus/HIV Coinfection	✓	✓ In people not immune to HBV, repeat testing if switching to a regimen that does not contain TAF or TDF.						✓ Before starting HCV DAA In people not immune to HBV and at high risk for HBV,[j] periodic testing may be considered.
Hepatitis C Screening (HCV antibody or, if indicated, HCV RNA)[k]	✓					✓ Repeat HCV screening for at-risk people.[j]		✓

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

Laboratory Test	Timepoint or Frequency of Testing							
	Entry Into Care	ART Initiation[b] or Modification	After ART Initiation or Modification	Every 3–4 Months	Every 6 Months	Every 12 Months	Treatment Failure	Clinically Indicated
Basic Metabolic Panel[l,m]	✓	✓	✓ At 4–8 weeks For people with preexisting conditions or at risk of laboratory changes after ART initiation		✓ Every 6–12 months			✓
ALT, AST, Total Bilirubin	✓	✓	✓ At 4–8 weeks For people with preexisting conditions, at risk for laboratory changes after ART initiation, or with HBV coinfection		✓ Every 6–12 months			✓
CBC With Differential[n]	✓	✓		✓ When monitoring CD4 count (if required by lab)	✓ When monitoring CD4 count (if required by lab)	✓ When no longer monitoring CD4 count		✓

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

Laboratory Test	Timepoint or Frequency of Testing							
	Entry Into Care	ART Initiation[b] or Modification	After ART Initiation or Modification	Every 3–4 Months	Every 6 Months	Every 12 Months	Treatment Failure	Clinically Indicated
Lipid Profile[o]	✓	✓	✓ At 3–6 months once viral suppression is reached			✓ If on a statin (Every 1–3 years if not on a statin)		✓ If there are changes in CV risk factors[p]
Random or Fasting Glucose[q]	✓	✓						✓
Urinalysis[m,r]	✓							✓ e.g., in people with CKD or DM
Pregnancy Test[s]	✓	✓ For ART initiation; for modification only if clinically indicated						✓

[a] This table pertains to laboratory tests done to select an ARV regimen and monitor for treatment responses or ART toxicities. Please refer to the HIV Medicine Association of the Infectious Diseases Society of America's (HIVMA/IDSA) Primary Care Guidance for Providers Who Care for Persons With HIV for other laboratory tests generally recommended for primary health care maintenance of HIV people.[1]

[b] If ART is initiated soon after HIV diagnosis and entry into care, repeat baseline laboratory testing is not necessary.

[c] If HIV RNA is detectable at 4–8 weeks, repeat testing every 4–8 weeks until viral load is suppressed to <50 copies/mL. Thereafter, repeat testing every 3–6 months.

[d] For people on ART, viral load is typically measured every 3–6 months. More frequent monitoring may be considered in individuals having difficulties with ART adherence or at risk for nonadherence. However, for adherent people with consistently suppressed viral load and stable immunologic status for more than 1 year, monitoring can be extended to 6-month intervals.

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

[e] After 1–2 years of consistently suppressed HIV RNA, less frequent monitoring (e.g., every 6 months) may be considered.

[f] Standard genotypic drug-resistance testing in ARV-naive persons should focus on testing for mutations in the PR and RT genes. If transmitted INSTI resistance is a concern, or if a person may have a history of INSTI use as PrEP, PEP, or treatment, or a person presents with viremia while on an INSTI, providers also should test for resistance mutations in the integrase gene. In people who are ARV-naive and who do not immediately begin ART, repeat testing before initiation of ART is optional if drug-resistance testing was performed at entry into care. In people with virologic suppression who are switching therapy because of toxicity or for convenience, viral amplification will not be possible; see the Drug-Resistance Testing section for a discussion of the potential limitations and benefits of proviral DNA assays in this situation. Results from prior drug-resistance testing should be used in constructing a new regimen.

[g] If a person has HBV infection (as determined by a positive HBsAg or HBV DNA test result), TDF or TAF plus either FTC or 3TC should be used as part of the ARV regimen to treat both HBV and HIV infections (see the Hepatitis B Virus/HIV Coinfection section).

[h] If HBsAg, HBsAb, and HBcAb test results are negative, HBV vaccine series should be administered. Refer to the HIVMA/IDSA's Primary Care Guidance for Persons With HIV and the Adult and Adolescent Opportunistic Infection Guidelines for detailed recommendations.[1,2]

[i] Most people with isolated HBcAb have resolved HBV infection with loss of HBsAb. Consider performing an HBV viral load test for confirmation. If the HBV viral load test is positive, the person may be acutely infected (and will usually display other signs of acute hepatitis) or chronically infected. If the test is negative, the person should be vaccinated. Refer to the HIVMA/IDSA's Primary Care Guidance for Persons With HIV and the Adult and Adolescent Opportunistic Infection Guidelines for more detailed recommendations.[2]

[j] Injection drug users, people with a history of incarceration, men with HIV who have unprotected sex with men, and people with percutaneous/parenteral exposure to blood in unregulated settings are at risk of HBV or HCV infection.

[k] The HCV antibody test may not be adequate for screening in the setting of recent HCV infection (acquisition within the past 6 months) or advanced immunodeficiency (CD4 count <100 cells/mm^3). HCV RNA screening is indicated in persons who have been successfully treated for HCV or who spontaneously cleared prior infection. HCV antibody-negative people with elevated ALT may need HCV RNA testing.

[l] Serum Na, K, HCO_3, Cl, BUN, creatinine, glucose, and Cr-based eGFR. Serum P should be monitored in people with CKD who are on TDF-containing regimens.[3]

[m] Consult the HIVMA/IDSA's Clinical Practice Guideline for the Management of Chronic Kidney Disease in People Infected With HIV for recommendations on managing people with renal disease.[3] More frequent monitoring may be indicated for people with evidence of kidney disease (e.g., proteinuria, decreased glomerular function) or increased risk of renal insufficiency (e.g., people with diabetes, hypertension).

[n] CBC with differential should be done when a CD4 count is performed. When CD4 count is no longer being monitored, the recommended frequency of CBC with differential is once a year. More frequent monitoring may be indicated for people receiving medications that potentially cause cytopenia (e.g., TMP-SMX).

[o] If random lipids are abnormal, fasting lipids should be obtained. Consult the American College of Cardiology/American Heart Association/Multisociety Dyslipidemia Guideline for diagnosis and management of people with dyslipidemia.[4]

[p] Changes in CV risk factors such as new diagnosis of hypertension, weight gain, or new medications (including ART) that may raise lipid levels or overall CV risk.

[q] If random glucose is abnormal, fasting glucose should be obtained. HbA1C is no longer recommended for diagnosis of diabetes in people with HIV on ART (see the American Diabetes Association Guidelines).[5]

[r] Urine glucose and protein should be assessed before initiating TAF- or TDF-containing regimens and monitored during treatment with these regimens.

[s] For women of reproductive potential.

Table 3. Laboratory Testing Schedule Before and After Antiretroviral Therapy Initiation

Key: 3TC = lamivudine; ABC = abacavir; ALT = alanine aminotransferase; ART = antiretroviral therapy; ARV = antiretroviral; AST = aspartate aminotransferase; BUN = blood urea nitrogen; CAB-LA = cabotegravir long-acting; CBC = complete blood count; CD4 = CD4 T lymphocyte; CKD = chronic kidney disease; Cl = chloride; Cr = creatinine; CV = cardiovascular; DAA = direct-acting antiviral; DM = diabetes mellitus; eGFR = estimated glomerular filtration rate; FTC = emtricitabine; HbA1C = hemoglobin A1c; HBcAb = hepatitis B core antibody; HBsAb = hepatitis B surface antibody; HBsAg = hepatitis B surface antigen; HBV = hepatitis B virus; HCO_3 = bicarbonate; HCV = hepatitis C virus; INSTI = integrase strand transfer inhibitor; K = potassium; Na = sodium; P = phosphorus; PEP = post-exposure prophylaxis; PR = protease; PrEP = pre-exposure prophylaxis; RT = reverse transcriptase; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TMP-SMX = trimethoprim-sulfamethoxazole

Table 4. Laboratory Monitoring If ART Is Deferred

Updated: October 27, 2026
Reviewed: October 27, 2026

Antiretroviral therapy (ART) is recommended for all people with HIV **(AI).** People with HIV should be advised to begin ART as soon as feasible to reduce morbidity and mortality and to prevent transmission of HIV to others. This table provides guidance for laboratory monitoring in the rare occasions when ART initiation is deferred.

Laboratory Test	Initial Assessment	Monitoring Frequency If ART Is Deferred	Comments
CD4 Count	✓	Every 3–6 months	To assess for urgency of ART initiation and the need for OI prophylaxis
HIV Viral Load	✓	Every 3–6 months	
Genotypic Resistance Testing (PR/RT +/- integrase gene) See Drug Resistance Testing for more information.	✓		Repeat genotypic resistance testing at the time of ART initiation is optional.
Hepatitis B Serology (HBsAb, HBsAg, HBcAb) See Hepatitis B in the Adult OI Guidelines for more detailed guidance.	✓	Clinically indicated	Before starting HCV DAA If HBsAg Positive: • ART with HBV-active drugs that include TAF or TDF should be initiated. If Not Immune at Baseline: • Repeat after vaccination or before starting an NRTI-sparing (or limited) ART regimen.
Hepatitis C Screening (HCV antibody, or, if indicated, HCV RNA)	✓	Every 12 months for at-risk people, or if clinically indicated	
Basic Metabolic Panel	✓	Every 6–12 months or if clinically indicated	
ALT, AST, Total Bilirubin	✓	Every 6–12 months or if clinically indicated	
CBC With Differential	✓	When monitoring CD4 count or if clinically indicated	
Pregnancy Test (when pregnancy is possible)	✓	If clinically indicated	ART should be initiated as soon as possible after confirming pregnancy to prevent perinatal HIV transmission.

Key: ALT = alanine aminotransferase; ART = antiretroviral therapy; AST = aspartate aminotransferase; CBC = complete blood count; CD4 = CD4 T lymphocyte; DAA = direct-acting antiviral; HBcAb = hepatitis B core antibody; HBsAb = hepatitis B surface antibody; HBsAg = hepatitis B surface antigen; HBV = hepatitis B virus; HCV = hepatitis C virus; NRTI = nucleoside reverse transcriptase inhibitor; OI = opportunistic infection; PR = protease; RT = reverse transcriptase; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Table 5. Recommendations for the Use of Drug-Resistance Assays

Updated: September 12, 2024
Reviewed: September 12, 2024

Clinical Setting and Recommendation	Rationale
In Early (Acute and Recent) HIV Drug-resistance testing is recommended **(AII).** A genotypic assay is generally preferred **(AIII).** Treatment should not be delayed while awaiting resistance testing results **(AIII).** See Early (Acute and Recent) HIV Infection for discussion on ART selection.	Drug-resistance testing can determine whether drug-resistant virus was transmitted or acquired while using PrEP. The initial ARV regimen can be modified, if necessary, once resistance test results are available. Genotypic testing is preferred to phenotypic testing because of lower cost, faster turnaround time, and greater sensitivity for detecting mixtures of wild-type and resistant virus.
If ART is deferred, repeat genotypic resistance testing may be considered when therapy is initiated **(CIII).** A genotypic assay is preferred **(AIII).**	Repeat testing when ART is initiated may be considered because the person may have acquired a drug-resistant virus (i.e., superinfection).
Before ART Initiation in People With Chronic HIV Drug-resistance testing is recommended at entry into HIV care to guide the selection of initial ART **(AII).** A genotypic assay is generally preferred **(AIII).** Treatment should not be delayed while awaiting resistance testing results **(AIII).**	Transmitted HIV with baseline resistance to at least one drug has been reported, and suboptimal virologic responses may be seen in people with baseline resistance mutations to ARVs in the prescribed regimen. Some drug-resistance mutations can remain detectable for years in untreated people with chronic HIV.
If transmitted or acquired INSTI resistance (including among people who had received INSTI for post-exposure prophylaxis) is a concern, providers should supplement standard resistance testing with a specific INSTI genotypic resistance assay, which may need to be ordered separately **(AIII).** Given the prolonged half-life of CAB-LA, INSTI-resistance testing should be considered in all people with HIV who previously received CAB-LA for PrEP, regardless of the time since drug discontinuation **(AIII).** See What to Start for discussion on ART selection.	Genotypic assays provide information on resistance to NRTIs, NNRTIs, PIs, and INSTIs. In some circumstances, INSTI-resistance tests need to be ordered separately (clinicians should check with the testing laboratory). Currently, transmitted INSTI resistance is infrequent, but the risk of people acquiring INSTI-resistant strains may be greater in certain known exposure settings. INSTI-resistance testing should be ordered for all people with prior exposure to CAB-LA for PrEP or an INSTI-based regimen for post-exposure prophylaxis.
For pregnant women or people who will initiate ART on the day of or soon after HIV diagnosis, treatment can be initiated prior to receiving resistance testing results.	If necessary, the ARV regimen can be modified once resistance test results are available.
If therapy is deferred, repeat genotypic resistance testing may be considered before initiation of ART **(CIII).** A genotypic assay is generally preferred **(AIII).**	Repeat testing before initiation of ART may be considered, because the person may have acquired a drug-resistant virus (i.e., a superinfection). Genotypic testing is preferred to phenotypic testing because of lower cost, faster turnaround time, and greater sensitivity for detecting mixtures of wild-type and resistant virus.

Table 5. Recommendations for the Use of Drug-Resistance Assays

Clinical Setting and Recommendation	Rationale
In People With Virologic Failure Drug-resistance testing is recommended in people on ART with HIV RNA >200 copies/mL (**AI** for >1,000 copies/mL**, AIII** for 501–1,000 copies/mL) and a confirmed HIV RNA 201–500 copies/mL **(CIII).** In people with confirmed HIV RNA levels between 201–500 copies/mL, testing may not be successful but should still be considered.	Drug-resistance testing can help determine the role of resistance in virologic failure and maximize the ability to select active drugs for the new regimen. Resistance testing for HIV RNA levels 201–500 copies/mL may need to be conducted within a research setting.
Resistance testing should be done while the person is taking ART or, if that is not possible, within 4 weeks after discontinuation of non–long-acting ARV drugs **(AII).** If >4 weeks have elapsed, resistance testing may still be useful to guide therapy; however, previously selected mutations can be missed due to lack of drug-selective pressure **(CIII).**	The absence of detectable resistance in such people with HIV must be interpreted with caution when designing subsequent ARV regimens, as mutations may decay with time.
For people who previously received LA CAB/RPV and present with virologic failure, resistance testing (including INSTI genotypic testing) should be performed regardless of the time since the last dose of LA CAB/RPV **(AIII).**	Because of the long half-lives of LA CAB and RPV, resistance mutations to INSTI and NNRTI may emerge even months after the last doses of these drugs.
Reverse transcriptase and protease genotypic resistance testing should be performed on people with virologic failure. Integrase resistance testing should be performed on individuals who have virologic failure and have a history of prior use of an INSTI (for prevention or treatment) or are currently receiving an INSTI-based regimen **(AII).**	Genotypic testing is preferred to phenotypic testing because of lower cost, faster turnaround time, and greater sensitivity for detecting mixtures of wild-type and resistant HIV. INSTI-resistance tests may need to be ordered separately. (Clinicians should check with the testing laboratory.)
All prior and current drug-resistance testing results should be reviewed and considered when designing a new ARV regimen for a person experiencing virologic failure **(AIII).**	Drug-resistance mutations may decay with time, and mutations detected in prior resistance tests may not be detected in current tests, though they remain clinically relevant.
Adding phenotypic testing to genotypic testing is generally preferred in people with known or suspected complex drug-resistance patterns **(BIII).**	Phenotypic testing can provide additional useful information in people with complex drug-resistance mutation patterns.
If use of a CCR5 antagonist is being considered, a co-receptor tropism assay should be performed **(AI).**	See Co-Receptor Tropism Assays section.
In People With Suboptimal Suppression of Viral Load Drug-resistance testing is recommended in people with suboptimal viral load suppression after initiation of ART **(AII).**	Testing can determine the role of resistance in suboptimal viral suppression, and it can help the clinician identify the number of active drugs available in the current ARV regimen and assess the need for a new regimen.

Table 5. Recommendations for the Use of Drug-Resistance Assays

Clinical Setting and Recommendation	Rationale
In Pregnant Women With HIV Genotypic resistance testing is recommended for all pregnant women before initial ART **(AIII)** and for those entering pregnancy with detectable HIV RNA levels while on therapy **(AI).**	The goals of ART in pregnant women with HIV are to achieve maximal viral suppression for treatment of HIV in the pregnant woman and to prevent perinatal transmission of HIV. Genotypic resistance testing will assist the clinician in selecting the optimal ARV regimen. However, treatment should not be delayed while awaiting resistance testing results. The initial regimen can be modified once resistance test results are available, if needed.
In People With Undetectable Viral Load or Low-Level Viremia Who Are Planning to Change Their ARV Regimen HIV-1 proviral DNA resistance assays may be useful if HIV RNA is below the limit of detection or with low-level viremia, where an HIV RNA genotypic assay is unlikely to be successful **(CIII).**	HIV-1 proviral DNA resistance assays may provide information about previously circulating resistant viral variants that are archived within proviral DNA. These assays may miss some or all prior resistance mutations that have occurred within the viral quasi-species and, therefore, they should be interpreted with caution. The clinical utility of HIV-1 proviral DNA assays has not been fully determined.

Key: ART = antiretroviral therapy; ARV = antiretroviral; CAB-LA = long-acting cabotegravir; CCR5 = cysteine-cysteine chemokine receptor 5; INSTI = integrase strand transfer inhibitor; LA = long-acting; LA CAB/RPV = long-acting cabotegravir/rilpivirine; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PrEP = pre-exposure prophylaxis; RPV = rilpivirine

Table 6a. Recommended Initial Regimens for Most People With HIV

Updated: September 24, 2026
Reviewed: September 24, 2026

Selection of an ARV regimen should be based on the regimen's virologic efficacy, potential adverse effects, pill burden, dosing frequency, drug–drug interaction potential, cost, access, resistance test results, and select comorbid conditions of the person with HIV. A pregnancy test should be performed in women of childbearing potential, and choice of ART for pregnant women should be guided by recommendations from the Perinatal Guidelines. Drug classes and regimens within each class are arranged first by evidence rating and, when ratings are equal, in alphabetical order. Additional initial ARV regimen options for certain clinical scenarios are listed in Table 6b below.

Table 6a. Recommended Initial Regimens for Most People With HIV

Recommended regimens are those with demonstrated durable virologic efficacy, favorable tolerability and toxicity profiles, and ease of use. Choice of ART during pregnancy should be guided by recommendations from the Perinatal Guidelines.

For people who do not have a history of using CAB-LA as PrEP, one of the following regimens is recommended[a]:

- BIC/TAF/FTC **(AI)**
- DTG plus (TAF or TDF)[b] plus (FTC or 3TC) **(AI)**
- DTG/3TC **(AI),** except for individuals—
  - With HBV coinfection.
  - With unknown HBV serostatus.
  - Without results from genotypic resistance testing for reverse transcriptase.
  - For whom rapid ART initiation is planned.

For people who have a history of CAB-LA use as PrEP, INSTI genotypic resistance testing should be performed before starting INSTI-based ART. If ART is to be started before results of genotypic testing, the following regimen is recommended:

- DRV/c[c] or DRV/r plus (TAF or TDF)[b] plus (FTC or 3TC)—pending the results of the genotype test **(AIII)**

Rating of Recommendations: *A = Strong; B = Moderate; C = Weak*

Rating of Evidence: *I = Data from randomized controlled trials; II = Data from well-designed nonrandomized trials, observational cohort studies with long-term clinical outcomes, relative bioavailability/bioequivalence studies, or regimen comparisons from randomized switch studies; III = Expert opinion*

[a] Because of the current low rates of transmitted INSTI resistance in the United States, even when there is suspicion that HIV was acquired from a partner with virologic failure while on an INSTI, an INSTI-based regimen can be started pending the results of the INSTI genotype.

[b] TAF and TDF are two forms of TFV approved by the U.S. Food and Drug Administration. TAF has fewer bone and kidney toxicities than TDF, while TDF is associated with lower lipid levels. Safety, cost, and access are among the factors to consider when choosing between these drugs.

[c] COBI should be avoided in pregnancy because lower concentrations of COBI and DRV have been reported during the second and third trimesters. For further information, refer to the Perinatal Guidelines.

Note: Of regimens listed in Table 6a, the following are available as coformulated drugs: BIC/TAF/FTC, DRV/c/TAF/FTC, DTG/3TC, TAF/FTC, TDF/3TC, and TDF/FTC.

Table 6a. Recommended Initial Regimens for Most People With HIV

Key: 3TC = lamivudine; ART = antiretroviral therapy; BIC = bictegravir; CAB-LA = long-acting cabotegravir; COBI = cobicistat; DRV = darunavir; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; FTC = emtricitabine; HBV = hepatitis B virus; INSTI = integrase strand transfer inhibitor; PrEP = pre-exposure prophylaxis; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TFV = tenofovir

Table 6b. Initial Antiretroviral Regimens for Certain Clinical Scenarios

Updated: September 24, 2026
Reviewed: September 24, 2026

Several antiretroviral regimens are found to be effective and tolerable as initial regimens but have some disadvantages or have fewer supporting data from randomized clinical trials compared with the recommended regimens listed in Table 6a. However, one of these regimens may be preferred for an individual with HIV in certain clinical situations (also see Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios). These regimens are listed below.

Type of Regimen	ARV Regimen	Rapid Start	For Certain Clinical Scenarios	Other Considerations
INSTI Plus Two NRTIs	DTG/ABC/3TC **(BI)** (if HLA-B*5701-negative)	No	When concern about renal- or bone-associated AEs precludes the use of TDF or TAF or when DTG/3TC cannot be used	Test for HLA-B*5701 before prescribing ABC; ABC is **contraindicated** if HLA-B*5701-positive. Consider alternative ARV medications in place of ABC in people with HIV and higher underlying ASCVD risk or known CVD. Do not use in people with HBV unless an HBV-active drug other than 3TC (i.e., entecavir) is also used. Do not use following exposure to CAB-LA unless INSTI genotype shows sensitivity to DTG.
Boosted PI Plus Two NRTIs	(DRV/c[a] or DRV/r) plus (TAF or TDF[b]) plus (FTC or 3TC) **(BI)**	Yes	To avoid an INSTI-based regimen (e.g., suspected or documented INSTI resistance)	Assess for potential RTV- or COBI-related DDIs (see the Liverpool HIV Drug Interaction Checker). Needs to be taken with a meal.
	(DRV/c[a] or DRV/r) plus ABC/3TC **(BII)** (if HLA-B*5701-negative)	No	To avoid an INSTI-based regimen (e.g., with suspected or documented INSTI resistance), *and*	Test for HLA-B*5701 before prescribing ABC; do not prescribe if HLA-B*5701-positive.

Table 6b. Initial Antiretroviral Regimens for Certain Clinical Scenarios

Type of Regimen	ARV Regimen	Rapid Start	For Certain Clinical Scenarios	Other Considerations
			When concerns about renal or bone-associated AEs preclude the use of TDF or TAF	Consider alternative ARV medications in place of ABC in people with HIV and higher underlying ASCVD risk or known CVD. Do not use in people with HBV unless used with an HBV-active drug other than 3TC (i.e., entecavir). Assess for potential RTV- or COBI-related DDIs. Needs to be taken with a meal.
Boosted PI Plus One NRTI	DRV/r plus (3TC **[BI]** or FTC **[BII]**), *or* DRV/c plus (3TC or FTC) **(BII)**	No	To avoid TFV and ABC in people who are not candidates for DTG/3TC	Do not use if genotypic resistance testing for reverse transcriptase is not yet available. Do not use in people with HBV unless used with an HBV-active drug other than 3TC (i.e., entecavir). Assess for potential RTV- or COBI-related DDIs (see the Liverpool HIV Drug Interaction Checker). Needs to be taken with a meal.
NNRTI Plus Two NRTIs	DOR/TDF/3TC[b] **(BI)** *or* DOR plus TAF/FTC[b] **(BIII)**	No	To avoid an INSTI-based regimen (e.g., with suspected or documented INSTI resistance), *and* To avoid a PI-based regimen (e.g., with significant DDIs with concomitant medications)	
	RPV/TAF/FTC **(BII)** Only if HIV RNA ≤100,000 copies/mL **and** CD4 count ≥200 cells/mm^3	No	To avoid an INSTI-based regimen (e.g., with suspected or documented INSTI resistance), *and* To avoid a PI-based regimen (e.g., with significant DDIs with concomitant medications), *and* When a single-tablet regimen containing	**Contraindicated** with PPI; space apart from H2 antagonist or antacids. Needs to be taken with a meal.

Table 6b. Initial Antiretroviral Regimens for Certain Clinical Scenarios

Type of Regimen	ARV Regimen	Rapid Start	For Certain Clinical Scenarios	Other Considerations
			an NNRTI and TAF is desired	

Rating of Recommendations: *A = Strong; B = Moderate; C = Weak*

Rating of Evidence: *I = Data from randomized controlled trials; II = Data from well-designed nonrandomized trials, observational cohort studies with long-term clinical outcomes, relative bioavailability/bioequivalence studies, or regimen comparisons from randomized switch studies; III = Expert opinion*

[a] COBI-boosted DRV **is not recommended** as part of initial therapy in pregnancy because lower concentrations of COBI and DRV have been observed during the second and third trimesters. For further information, refer to the Perinatal Guidelines.

[b] TAF and TDF are two forms of TFV approved by the U.S. Food and Drug Administration. TAF has fewer bone and kidney toxicities than TDF, while TDF is associated with lower lipid levels. Safety, cost, and access are among the factors to consider when choosing between these drugs.

Note: The following are available as coformulated drugs: ABC/3TC, DOR/TDF/3TC, DRV/c, DRV/c/TAF/FTC, DTG/ABC/3TC, RPV/TAF/FTC, TAF/FTC, TDF/3TC, and TDF/FTC.

Key: 3TC = lamivudine; ABC = abacavir; AE = adverse event; ARV = antiretroviral; ASCVD = atherosclerotic cardiovascular disease; CAB-LA = long-acting cabotegravir; CD4 = CD4 T lymphocyte; COBI = cobicistat; CVD = cardiovascular disease; DDI = drug–drug interaction; DOR = doravirine; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; FTC = emtricitabine; H2 = histamine type 2; HBV = hepatitis B virus; HLA = human leukocyte antigen; INSTI = integrase strand transfer inhibitor; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PPI = proton pump inhibitor; RPV = rilpivirine; RTV = ritonavir; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TFV = tenofovir

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Updated: September 24, 2026
Reviewed: September 24, 2026

This table guides clinicians in choosing an initial antiretroviral (ARV) regimen according to various individual and regimen characteristics and specific clinical scenarios. ARV drugs/regimens that are listed as *Recommended Initial Regimens for Most People With HIV* or *Initial Antiretroviral Regimens for Certain Clinical Scenarios* are included in this table. When more than one scenario applies to a person with HIV, clinicians should review considerations for each relevant scenario and use their clinical judgment to select the most appropriate regimen. Please see Advantages and Disadvantages of Antiretroviral Components for additional information regarding the advantages and disadvantages of particular ARV medications recommended to be used as part of initial therapy.

Individual or Regimen Characteristics	Clinical Scenario	Consideration(s)	Rationale/Comments
Pre-ART Characteristics	CD4 count <200 cells/mm^3	**Do not use** RPV-based regimens.	Higher rates of virologic failure have been observed in those with low pre-treatment CD4 counts.
	HIV RNA >100,000 copies/mL	**Do not use** RPV-based regimens.	Higher rates of virologic failure have been observed in those with high pre-treatment HIV RNA levels.
	HLA-B*5701 positive or result unknown	**Do not use** ABC-containing regimens.	ABC hypersensitivity is a potentially fatal reaction that is highly associated with the HLA-B*5701 allele.
	Prior exposure to oral TDF/(3TC or FTC) or TAF/3TC PrEP	**Use** • BIC/TAF/FTC, *or* • DTG plus (TAF or TDF)[a] plus (3TC or FTC) DTG/3TC could be considered if testing confirms no 3TC resistance mutations.	DTG/3TC should be avoided if resistance testing results are not available, as presence of 3TC resistance mutations may lead to increased risk of treatment failure with DTG resistance.

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Individual or Regimen Characteristics	Clinical Scenario	Consideration(s)	Rationale/Comments
	Prior exposure to CAB-LA for PrEP	INSTI genotype resistance testing should be performed. **If INSTI Resistance Is Present or If ART Needs to Be Started Before Genotype Test Results, Use:** • (DRV/r or DRV/c) plus (TAF or TDF)[a] plus (3TC or FTC) **If No INSTI Resistance Is Identified, Use:** • BIC/TAF/FTC, *or* • DTG plus (TAF or TDF)[a] plus (3TC or FTC), *or* • DTG/3TC	Mutations conferring resistance to INSTIs have been seen in association with CAB-LA PrEP. CAB-LA has a very long half-life, and drug exposure may persist at levels suboptimal to prevent infection and may select for INSTI-resistant virus.
	No prior exposure to CAB-LA for PrEP *and* rapid ART initiation is desired (i.e., before drug resistance results are available)	**Use** • BIC/TAF/FTC, *or* • DTG plus (TAF or TDF)[a] plus (3TC or FTC)	Transmitted mutations conferring NNRTI and NRTI resistance are more likely than mutations associated with PI or INSTI resistance. HLA-B*5701 results may not be available rapidly; thus, ABC **is not recommended.**

	Prior exposure to INSTI-based PEP *or* suspected acquisition from someone with virologic failure on an INSTI-based regimen	• Obtain INSTI genotypic resistance test and start one of the following regimens:
		
		  • BIC/TAF/FTC, *or*
		
		  • DTG plus (TAF or TDF)[a] plus (3TC or FTC)
			Because of the current low rates of transmitted INSTI resistance in the United States, even when there is suspicion that HIV was acquired from a partner with virologic failure while on an INSTI, and because selection of INSTI-resistant virus is likely to be uncommon in the setting of INSTI-based PEP, an INSTI-based regimen can be started, pending the results of the INSTI genotype.

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Individual or Regimen Characteristics	Clinical Scenario	Consideration(s)	Rationale/Comments
ART-Specific Characteristics	A one-pill, once-daily regimen is desired.	**STR Options as *Recommended Initial Regimens For Most People With HIV*:** • BIC/TAF/FTC • DTG/3TC • DRV/c/TAF/FTC (if history of CAB-LA use as PrEP without INSTI genotype results) **STR Options as *Initial ARV Regimens For Certain Clinical Scenarios*:** • DOR/TDF/3TC • DTG/ABC/3TC • RPV/TAF/FTC	**Do not use** DTG/ABC/3TC if the person is HLA-B*5701 positive. **Do not use** DTG/ABC/3TC or DTG/3TC in the setting of HBV coinfection without another potent, high barrier HBV agent (i.e., entecavir). **Do not use** RPV/TAF/FTC if HIV RNA is >100,000 copies/mL and/or CD4 count is <200 cells/mm^3.
	Food effects	BIC-, DOR-, or DTG-based regimens can be taken without regard to food.	Oral bioavailability of these regimens is not significantly affected by food.
		DRV/r- or DRV/c-based regimens and RPV/TAF/FTC should be taken with food.	Food improves absorption of these regimens.
Presence of Other Conditions	Chronic kidney disease	**Avoid** TDF, if possible, for CrCl <60 mL/min **Avoid** TAF for CrCl <30 mL/min (unless on HD) Refer to Appendix B for specific ARV dosing recommendations in people with renal impairment. For people with progressively declining renal function, consider avoiding all TFV-containing (TAF or TDF) regimens.	TDF has been associated with proximal renal tubulopathy. Higher rates of renal dysfunction have been reported in people using TDF in conjunction with RTV- or COBI- containing regimens. TAF has less impact on renal dysfunction than TDF. If a TDF- or TAF-based regimen cannot be used in the setting of HBV coinfection or unknown HBV status, use entecavir (see HBV/HIV Coinfection).

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Individual or Regimen Characteristics	Clinical Scenario	Consideration(s)	Rationale/Comments
	Liver disease with cirrhosis	Some ARVs are contraindicated or may require dosage modification in people with Child-Pugh class B or C disease.	Refer to Appendix B for specific dosing recommendations. People with cirrhosis should be carefully evaluated by an expert in advanced liver disease.
	Concern for weight gain	For many people with HIV, gaining weight after starting ART is part of a "return to health." However, some ARV regimens are associated with greater weight increase than others.	See Weight Gain in People With Treated HIV for more information.
	Osteoporosis	**Avoid TDF,** if possible.[a]	TDF is associated with decreases in BMD, along with renal tubulopathy, urine phosphate wasting, and resultant osteomalacia, especially with RTV- or COBI-boosted regimens. TAF[a] and ABC are associated with smaller declines in BMD than TDF.
	Psychiatric illnesses	**Consider avoiding** RPV-based regimens. People on INSTI-based regimens who have preexisting psychiatric conditions should be closely monitored. Some ARVs are contraindicated, and some psychiatric medications need dose adjustments when coadministered with certain ARVs.	RPV can exacerbate psychiatric symptoms and may be associated with suicidality. Some INSTIs have been associated with adverse neuropsychiatric effects in some retrospective cohort studies and case series. Refer to the Liverpool HIV Drug Interaction Checker for dosing recommendations when drugs used for psychiatric illnesses are used with certain ARVs.
	Cardiac QTc interval prolongation	**Consider avoiding** RPV-based regimens if the person is taking other medications with known risk of Torsades de Pointes or in people at higher risk of Torsades de Pointes.	High RPV concentrations may cause QTc prolongation.

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Individual or Regimen Characteristics	Clinical Scenario	Consideration(s)	Rationale/Comments
	High risk for CV events	**Consider avoiding** ABC-based regimens. Refer to Hyperlipidemia, below, for regimens associated with more favorable lipid profiles.	Evidence increasingly supports a relationship between ABC and major CV events.
	Hyperlipidemia	PI/c and PI/r have been associated with hyperlipidemia. BIC, DOR, DTG, and RPV have fewer lipid effects.	TDF has been associated with lower lipid levels than ABC or TAF.
	History of poor adherence to non-ARV medications or inconsistent engagement in care	Consider using regimens with a high genetic barrier to resistance, such as BIC, DTG, or a boosted PI.	In people with inconsistent adherence, DRMs are less likely to emerge if they are on regimens with a high genetic barrier to resistance.
	Pregnancy	Refer to the Perinatal Guidelines for further guidance on ARV use during pregnancy.	
Presence of Coinfections	HBV infection	**Avoid regimens** without TFV. **If TDF and TAF Are Contraindicated** • Entecavir should be added to a fully suppressive ARV regimen (see HBV/HIV Coinfection).	TDF, TAF, FTC, and 3TC are active against both HIV and HBV. However, 3TC and FTC are insufficient for HBV treatment when used alone due to the emergence of resistance.
	HCV treatment required	Refer to recommendations in HCV/HIV Coinfection, with special attention to potential interactions between ARV drugs and HCV drugs.	
	Concomitant use with rifamycin antibiotics (e.g., rifabutin, rifampin, and rifapentine)	Recommended regimens may require dose adjustment. See the drug–drug interaction tables (see the Liverpool HIV Drug Interaction Checker).	Rifamycin antibiotics are inducers of CYP3A4 and UGT1A1 enzymes, causing significant decreases in concentrations of PIs, INSTIs, and RPV.

[a] TAF and TDF are two U.S. Food and Drug Administration–approved forms of TFV. TAF has fewer bone and kidney toxicities than TDF, whereas TDF is associated with lower lipid levels. Safety, cost, and access are among the factors to consider when choosing between these drugs.

Table 7. Antiretroviral Regimen Considerations for Initial Therapy Based on Specific Clinical Scenarios

Key: 3TC = lamivudine; ABC = abacavir; ART = antiretroviral therapy; ARV = antiretroviral; BIC = bictegravir; BMD = bone mineral density; CAB-LA = long-acting cabotegravir; CD4 = CD4 T lymphocyte; COBI = cobicistat; CrCl = creatinine clearance; CV = cardiovascular; CYP = cytochrome P450; DOR = doravirine; DRM = drug resistance mutation; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; FTC = emtricitabine; HBV = hepatitis B virus; HCV = hepatitis C virus; HD = hemodialysis; HLA = human leukocyte antigen; INSTI = integrase strand transfer inhibitor; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PI/c = cobicistat-boosted protease inhibitor; PI/r = ritonavir-boosted protease inhibitor; PEP = post-exposure prophylaxis; PrEP = pre-exposure prophylaxis; QTc = QT corrected for heart rate; RPV = rilpivirine; RTV = ritonavir; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TFV = tenofovir; UGT = uridine diphosphate glucuronosyltransferase

Table 8a. Characteristics of Nucleoside Reverse Transcriptase Inhibitor Options for People Without Prior Antiretroviral Treatment

Updated: September 24, 2026
Reviewed: September 24, 2026

Note: Listed in order of the Panel's recommendations in Tables 6a and 6b.

Characteristics	TAF/FTC	TDF/FTC	TDF/3TC	3TC or FTC	ABC/3TC
Dosing Frequency	Once daily	Once daily	Once daily	Once daily	Once daily
Available Coformulations for People Without Prior ARV Treatment	TAF 25 mg/FTC BIC/TAF 25 mg/FTC DRV/c/TAF 10 mg/FTC RPV/TAF 25 mg/FTC	TDF/FTC	TDF/3TC DOR/TDF/3TC	DTG/3TC	ABC/3TC DTG/ABC/3TC
Adverse Effects	**TAF** • Renal insufficiency, proximal renal tubulopathy (less frequent than with TDF) • Decrease in BMD (less than with TDF)	**TDF** • Renal insufficiency, proximal renal tubulopathy • Decrease in BMD • Renal and bone toxicity are exacerbated by pharmacologic boosters.	**TDF** • Renal insufficiency, proximal renal tubulopathy • Decrease in BMD • Renal and bone toxicity are exacerbated by pharmacologic boosters.	**3TC or FTC** • No notable adverse effects	**ABC** • HSR to ABC is associated with the presence of HLA-B*5701 allele.[a] • Evidence increasingly supports a relationship between ABC and major CV events.
Other Considerations	• Also used for HBV treatment. Discontinuation may precipitate HBV flare. • See Appendix B for dosing recommendations in people with renal insufficiency. • Some studies reported less weight gain and lower LDL, HDL, TC, and triglycerides with TDF than with TAF. • TDF should be avoided, if possible, in people with renal disease (CrCl <60 mL/min) and/or osteopenia/osteoporosis. • For people with progressively declining renal function, consider avoiding TDF and TAF.			• 3TC or FTC or ABC/3TC **should not be used** as treatment for HBV without adding a potent anti-HBV therapy, such as tenofovir or entecavir. • Consider alternative ARV medications in place of ABC in people with higher underlying ASCVD risk or known ASCVD **(AII).**	

Table 8a. Characteristics of Nucleoside Reverse Transcriptase Inhibitor Options for People Without Prior Antiretroviral Treatment

[a] Perform HLA-B*5701 testing before initiating ABC; if result is positive, do not start ABC and add ABC to patient's allergy list. See the HLA-B*5701 Screening section for more information.

Key: 3TC = lamivudine; ABC = abacavir; ART = antiretroviral therapy; ARV = antiretroviral; ASCVD = atherosclerotic cardiovascular disease; BIC = bictegravir; BMD = bone mineral density; CrCl = creatinine clearance; CV = cardiovascular; DOR = doravirine; DRV = darunavir; DRV/c = darunavir/cobicistat; DTG = dolutegravir; FTC = emtricitabine; HBV = hepatitis B virus; HDL = high-density lipoprotein; HLA = human leukocyte antigen; HSR = hypersensitivity reaction; LDL = low-density lipoprotein; NRTI = nucleoside reverse transcriptase inhibitor; RPV = rilpivirine; TAF = tenofovir alafenamide; TC = total cholesterol; TDF = tenofovir disoproxil fumarate

Table 8b. Characteristics of Integrase Strand Transfer Inhibitors That Are Recommended as Part of Initial Antiretroviral Therapy

Updated: September 24, 2026
Reviewed: September 24, 2026

	BIC	DTG
Dosing Frequency	Once daily	**Once Daily** • As initial ART or for people with no INSTI-resistance mutations **Twice Daily** • If used with certain CYP3A4 and UGT1A1 inducers; *or* • In people with certain INSTI drug resistance mutations
STR Available as Initial ART	BIC/TAF/FTC	• DTG/ABC/3TC • DTG/3TC
Available as a Single Drug Tablet	No	Yes
Virologic Efficacy Against EVG- or RAL-Resistant HIV	*In vitro* data indicate activity, but clinical trial data are not available.	Yes, for some isolates; effective with DTG 50 mg twice daily
Adverse Reactions	• ↑ CPK • CNS side effects were rarely reported in clinical trials. • Diarrhea, nausea, and headache may occur in some cases.	• ↑ CPK, myositis • CNS side effects such as insomnia and headache have been reported; depression and suicidality are rare, occurring primarily in people with preexisting conditions. • Hypersensitivity, hepatotoxicity
CYP3A4 Drug–Drug Interactions	CYP3A4 substrate	CYP3A4 substrate (minor)
Chelation With Polyvalent Cation Supplements and Antacids	Oral absorption may be reduced by polyvalent cations. See the Liverpool HIV Drug Interaction Checker for recommendations regarding dosing separations and these drugs.	
Other Key Potential Drug Interaction Mechanisms	P-gp substrate, UGT1A1 substrate, OCT2 and MATE1 inhibitor	P-gp substrate, UGT1A1 substrate, OCT2 inhibitor, potential MATE1 inhibitor
Other Factors	Not recommended for initial therapy in those with a history of CAB-LA use as PrEP unless INSTI sensitivity is documented on genotypic resistance testing.	

Table 8b. Characteristics of Integrase Strand Transfer Inhibitors That Are Recommended as Part of Initial Antiretroviral Therapy

	BIC	DTG
	Both BIC and DTG decrease tubular secretion of creatinine without affecting glomerular function. This may result in an increase in serum creatinine of approximately 0.1–0.2 mg/dL.	

Key: 3TC = lamivudine; ABC = abacavir; ART = antiretroviral therapy; BIC = bictegravir; CAB-LA = long-acting injectable cabotegravir; CNS = central nervous system; CPK = creatine phosphokinase; CYP = cytochrome P450; DTG = dolutegravir; EVG = elvitegravir; FTC = emtricitabine; INSTI = integrase strand transfer inhibitor; MATE1 = multidrug and toxic compound extrusion 1; OCT2 = organic cation transporter 2; P-gp = p-glycoprotein; PrEP = pre-exposure prophylaxis; RAL = raltegravir; STR = single-tablet regimen; TAF = tenofovir alafenamide; UGT = uridine diphosphate glucuronosyltransferase

Table 8c. Characteristics of Non-nucleoside Reverse Transcriptase Inhibitors That Are Recommended as Initial Antiretroviral Therapy in Certain Clinical Scenarios

Updated: September 24, 2026
Reviewed: September 24, 2026

Characteristics	DOR	RPV[a]
Dosing Frequency	Once daily	Once daily
Food Requirement	With or without food	With a meal
STR Available as *Initial ARV Regimens for Certain Clinical Scenarios*	DOR/TDF/3TC	RPV/TAF/FTC
Available as a Single-Drug Tablet	Yes	Yes
Adverse Effects	• Skin rash • SJS/TEN (rarely observed) • DRESS (rarely observed)	• Depression • Headache • Skin rash • SJS/TEN (rarely observed) • DRESS (rarely observed) • QTc prolongation
CYP3A4 Drug–Drug Interactions	CYP3A4 substrate	CYP3A4 substrate
Other Significant Drug Interactions	None	RPV oral absorption is reduced with increased gastric pH. Use of RPV with PPIs **is contraindicated;** see the Liverpool HIV Drug Interaction Checker for dosing recommendations when RPV is coadministered with an H2 blocker or antacids.

[a] See Optimizing Antiretroviral Therapy in the Setting of Viral Suppression and Appendix A, Table 6 for information regarding injectable RPV.

Key: 3TC = lamivudine; ARV = antiretroviral; CYP = cytochrome P450; DOR = doravirine; DRESS = drug reaction with eosinophilia and systemic symptoms; FTC = emtricitabine; H2 = histamine 2; PPI = proton pump inhibitor; QTc = QT corrected for heart rate; RPV = rilpivirine; SJS = Stevens-Johnson syndrome; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TEN = toxic epidermal necrolysis

Table 8d. Characteristics of Protease Inhibitor Options as Initial Antiretroviral Therapy

Updated: September 24, 2026
Reviewed: September 24, 2026

Characteristic	DRV
Dosing Frequency	Once daily
PK Boosting	DRV should only be used with a PK booster (i.e., RTV or COBI).
Fixed-Dose Formulation	• DRV/c • DRV/c/TAF/FTC
Available as a Single-Drug Tablet	Yes
Adverse Effects	• Skin rash • Increase in serum transaminase • Hyperlipidemia • Diarrhea, nausea
CYP3A4 Drug–Drug Interactions	CYP3A4 substrate, inhibitor
Other Significant Drug Interactions	N/A

Key: COBI = cobicistat; CYP = cytochrome P450; DRV = darunavir; DRV/c = darunavir/cobicistat; FTC = emtricitabine; N/A = not applicable; PK = pharmacokinetic; RTV = ritonavir; TAF = tenofovir alafenamide

Table 9. Advantages and Disadvantages of Antiretroviral Components of Initial Antiretroviral Therapy Recommended for Most People With HIV or for Certain Clinical Scenarios

Updated: September 24, 2026
Reviewed: September 24, 2026

Note: All drugs within an ARV class are listed in alphabetical order. Information based on *Recommended Initial Regimens for Most People With HIV* and *Initial Antiretroviral Regimens for Certain Clinical Scenarios*. See Adverse Effects of Antiretroviral Medications for additional details.

ARV Class	ARV Agent(s)	Advantage(s)	Disadvantage(s)
Dual NRTI	**ABC/3TC**	• Coformulated with DTG • Generic formulations are available for ABC/3TC, ABC, and 3TC.	• May cause life-threatening HSRs in people who test positive for the HLA-B*5701 allele. As a result, HLA-B*5701 testing is required before use. • Evidence increasingly supports a relationship between ABC and major CV events.
	TAF/FTC	• Coformulated with BIC, DRV/c, or RPV • Active against HBV; a recommended dual-NRTI option for people with HBV/HIV coinfection • Smaller decline in renal function, less proteinuria, and smaller reductions in BMD than TDF/FTC • Approved for people with CrCl ≥30 mL/min • Can be used in people on chronic hemodialysis without dose adjustment	• See text in the NRTI and Weight Gain sections regarding weight changes with TAF when compared with TDF.
	TDF/3TC	• Active against HBV; a recommended dual-NRTI option for people with HBV/HIV coinfection • Coformulated with DOR • Generic formulations are available for TDF, 3TC, or TDF/3TC.	• **Not recommended** for people with CrCl <60 mL/min. The coformulated products **are not recommended** for CrCl <50 mL/min or hemodialysis. • Renal toxicity is associated with TDF use, including proximal tubulopathy and acute or chronic renal insufficiency, especially when combined with pharmacologic boosters. • Osteomalacia has been reported as a consequence of proximal tubulopathy. • Decreased BMD is associated with TDF use, especially when combined with pharmacologic boosters.

Table 9. Advantages and Disadvantages of Antiretroviral Components of Initial Antiretroviral Therapy Recommended for Most People With HIV or for Certain Clinical Scenarios

ARV Class	ARV Agent(s)	Advantage(s)	Disadvantage(s)
	TDF/FTC	• Active against HBV; a recommended dual-NRTI option for people with HIV/HBV coinfection • TDF is associated with lower lipid levels than TAF.	• **Not recommended** in people with CrCl <60 mL/min, but if used, requires dose adjustment for CrCl <50 mL/min. The coformulated tablet **is not recommended** if CrCl <30 mL/min or on hemodialysis. • Renal toxicity is associated with TDF use, including proximal tubulopathy and acute or chronic renal insufficiency, especially when combined with pharmacologic boosters. • Osteomalacia has been reported as a consequence of proximal tubulopathy. • Decreased BMD is associated with TDF use, especially when combined with pharmacologic boosters.
Single NRTI	**3TC or FTC**	• 3TC is coformulated with DTG as STR • Avoids potential toxicities associated with TDF, TAF, or ABC use (as coformulation)	• DTG/3TC, DTG + FTC, and boosted DRV + (3TC or FTC) **are not recommended** for individuals— o With HBV coinfection, unless on another HBV active drug (i.e., entecavir) o With unknown HBV serostatus o Without genotypic resistance testing results o In whom rapid ART initiation is planned
INSTI	**BIC**	• Coformulated with TAF/FTC • No food requirement	• Oral absorption of BIC can be reduced by simultaneous administration with drugs or supplements containing polyvalent cations (e.g., Al-, Ca-, or Mg-containing antacids or supplements or multivitamin tablets with minerals). See the Liverpool HIV Drug Interaction Checker. • CYP3A4 and UGT1A1 substrate; monitor for drug–drug interactions. See the Liverpool HIV Drug Interaction Checker. • Depression and suicidal ideation have been rarely observed (usually in people with preexisting psychiatric conditions). • See text in the INSTI and Weight Gain sections regarding weight gain and INSTI use.

Table 9. Advantages and Disadvantages of Antiretroviral Components of Initial Antiretroviral Therapy Recommended for Most People With HIV or for Certain Clinical Scenarios

ARV Class	ARV Agent(s)	Advantage(s)	Disadvantage(s)
	DTG	• Coformulated with ABC/3TC and 3TC as STR • No food requirement • Less impacted by CYP3A4-mediated interactions than BIC • Favorable lipid profile	• Oral absorption of DTG can be reduced by simultaneous administration with drugs containing polyvalent cations (e.g., Al-, Ca-, or Mg-containing antacids or supplements or multivitamin tablets with minerals). See the Liverpool HIV Drug Interaction Checker. • CYP3A4 (minor) and UGT1A1 substrate; monitor for drug interactions. See the Liverpool HIV Drug Interaction Checker. • Depression and suicidal ideation have been rarely observed (usually in people with preexisting psychiatric conditions). • See text in the INSTI and Weight Gain sections regarding weight gain and INSTI use.
NNRTI	**DOR**	• Coformulated with TDF/3TC • Fewer CNS side effects compared to EFV and RPV • No food requirement • Potentially higher barrier to resistance than other NNRTIs (but not comparable to that of boosted PIs or second-generation INSTIs)	• Monitor for CYP drug interactions. See the Liverpool HIV Drug Interaction Checker.
	RPV	• Coformulated with TAF/FTC	• **Not recommended** in people with pre-ART HIV RNA >100,000 copies/mL or CD4 counts <200 cells/mm^3 because of higher risk for virologic failure. • Depression and suicidality • QTc interval prolongation; consider using an alternative to RPV in people with higher risk of Torsades de Pointes, whether due to concomitant medications, prolonged QTc, or other risk factors. • Rash • Transmitted drug resistance is more common than with PIs and INSTIs. • More NNRTI-, TDF-, and 3TC-associated mutations at virologic failure than with regimens that contain EFV and two NRTIs

Table 9. Advantages and Disadvantages of Antiretroviral Components of Initial Antiretroviral Therapy Recommended for Most People With HIV or for Certain Clinical Scenarios

ARV Class	ARV Agent(s)	Advantage(s)	Disadvantage(s)
			• Monitor for CYP drug interactions (see the Liverpool HIV Drug Interaction Checker). • Meal requirement • Requires acid for adequate absorption o **Contraindicated** with PPIs. o Use with H2 antagonists or antacids with caution.
PI	**DRV/c** or **DRV/r**	• Higher barrier to resistance than NNRTIs • PI resistance at the time of treatment failure is uncommon with PK-enhanced PIs.	• CYP3A4 inhibitors and substrates; monitor for drug interactions. See the Liverpool HIV Drug Interaction Checker. • Skin rash • Food requirement with dosing • GI adverse effects • Increased CVD risk reported in one observational cohort study[a] • Hepatotoxicity has been reported, especially in those with preexisting liver disease.
	DRV/c Specific considerations	• Coformulated as DRV/c and DRV/c/TAF/FTC	• Coadministration with TDF **is not recommended** in people with CrCl <70 mL/min. • COBI (like RTV) is a potent CYP3A4 inhibitor, which can result in significant interactions with CYP3A substrates. • DRV/c-based regimens **are not recommended** as initial therapy in pregnancy because levels of COBI and DRV are lower in the second and third trimesters. If women who are pregnant with suppressed viral load on DRV/c-based regimens elect to continue on the drug, frequent viral load monitoring is recommended.

[a] D:A:D international prospective multicohort study[1]

Key: 3TC = lamivudine; ABC = abacavir; Al = aluminum; ART = antiretroviral therapy; ARV = antiretroviral; BIC = bictegravir; BMD = bone mineral density; Ca = calcium; CD4 = CD4 T lymphocyte; CNS = central nervous system; COBI = cobicistat; CrCl = creatinine clearance; CV = cardiovascular; CVD = cardiovascular disease risk; CYP = cytochrome P450; DOR = doravirine; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EFV = efavirenz; FTC = emtricitabine; GI = gastrointestinal; H2 = histamine 2; HBV = hepatitis B virus; HLA = human leukocyte antigen; HSR = hypersensitivity reaction; INSTI = integrase strand transfer inhibitor; Mg = magnesium; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PK = pharmacokinetic; PPI = proton pump inhibitor; QTc = QT corrected for heart rate; RPV = rilpivirine; RTV = ritonavir; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; UGT = uridine diphosphate glucuronosyltransferase

Table 10. Antiretroviral Options for People With HIV and Virologic Failure

Updated: September 12, 2024
Reviewed: September 12, 2024

Designing a new regimen for people with HIV who are experiencing treatment failure should always be guided by ARV history and results from current and past resistance testing. This table summarizes the text above and displays the most common or likely clinical scenarios seen in people with virologic failure. For more detailed descriptions, please refer to the texts above and/or consult an expert in HIV drug resistance to assist in the design of a new regimen. It is also crucial to provide continuous adherence support before and after regimen changes.

Clinical Scenario	Type of Failing Regimen	Resistance Considerations	New Regimen Options[a]	Goal
First Regimen Failure	NNRTI plus two NRTIs	Most likely resistant to NNRTI +/– 3TC or FTC (i.e., NNRTI mutations +/– M184V/I).[b] Additional NRTI mutations also may be present.	DTG (or possibly BIC) plus two NRTIs (preferably at least one fully active[c]) **(AI);** *or* Boosted PI plus two NRTIs (preferably at least one fully active) **(AI);** *or* Boosted PI plus INSTI (boosted DRV plus DTG **[AI]**; LPV/r plus RAL **[CI]**)	Resuppression
	Boosted PI plus two NRTIs	Most likely no resistance or resistance only to 3TC or FTC (i.e., M184V/I, without resistance to other NRTIs)[b]	DTG, or possibly BIC, plus two NRTIs (preferably at least one fully active; if only one of the NRTIs is fully active[c] or if adherence is a concern, DTG is currently preferred over other INSTIs) **(AIII);** *or* Continue same regimen **(AII);** *or* Boosted PI plus INSTI (boosted DRV plus DTG **[AI]**; LPV/r plus RAL **[CI]**); *or* Another boosted PI plus two NRTIs (at least one fully active[c]) **(AIII).**	Resuppression
	INSTI plus two NRTIs	If failure with no INSTI resistance	Boosted PI plus two NRTIs (preferably at least one fully active[c]) **(AIII);** *or* DTG, or likely BIC, plus two NRTIs (preferably at least one fully active[c]) **(AIII);** *or* DRV/r plus DTG **(AIII)**	Resuppression

Table 10. Antiretroviral Options for People with HIV and Virologic Failure

Clinical Scenario	Type of Failing Regimen	Resistance Considerations	New Regimen Options[a]	Goal
		If failure on EVG or RAL, often have INSTI resistance, but potentially susceptible to DTG Can have 3TC or FTC resistance.	Boosted PI plus two NRTIs (preferably at least one fully active[c]) **(AIII);** *or* DTG[d] twice daily or possibly BIC (if HIV is sensitive) plus two fully active NRTIs **(BIII);** *or* DTG[d] twice daily or possibly BIC (if HIV is sensitive) plus a boosted PI (preferably DRV/r) **(AIII).**	Resuppression
	INSTI plus NNRTI (DTG/RPV or LA CAB/RPV)	INSTI and/or NNRTI resistance possible	Use ART history and past and current resistance testing to design a new regimen. Consult an expert in drug resistance as needed.	Resuppression
Second Regimen Failure and Beyond	Drug resistance with fully active treatment options—	Use past and current genotypic- +/– phenotypic-resistance testing and ART history when designing new regimen.	New regimen according to original treatment type—	Resuppression
	(i) Boosted PI, but not second-generation INSTI, fully active		(i) Boosted PI with two NRTIs (preferably at least one fully active)	
	(ii) Second-generation INSTI, but not boosted PI, fully active		(ii) DTG or BIC with two NRTIs (preferably at least one fully active)	
	(iii) Both PI and INSTI fully active		(iii) The two options above or boosted PI with INSTI	
	Multiple or extensive drug resistance with few treatment options (e.g., fully active boosted PI or second-generation INSTI unavailable)	Use past and current genotypic- and phenotypic-resistance testing to guide therapy. Confirm with a viral tropism assay when use of MVC is considered. Consult an expert in drug resistance if needed.	New regimen should include at least two, and preferably three, fully active agents, including those with novel mechanisms of action (e.g., IBA, FTR, LEN). If fewer than three fully active drugs, include as many fully active drugs as possible, along with potentially partially active drugs **(BII).** Consider enrollment into clinical trials or expanded access programs for investigational agents if available. Discontinuation of all ARV drugs **is not recommended (AI).**	Resuppression if possible; otherwise, keep viral RNA levels as low as possible and CD4 count as high as possible.

Table 10. Antiretroviral Options for People with HIV and Virologic Failure

Clinical Scenario	Type of Failing Regimen	Resistance Considerations	New Regimen Options[a]	Goal
People With Suspected Drug Resistance and Limited or Incomplete ARV and Resistance History	Unknown	Obtain medical records if possible. Resistance testing may be helpful in identifying drug-resistance mutations, even if the person has been off ART. Keep in mind that resistance mutations may not be detected in the absence of drug pressure.	Consider restarting the old regimen with careful monitoring of virologic response and early resistance testing if inadequate virologic suppression. If no ARV history is available, consider initiating a regimen with drugs with high genetic barriers to resistance (e.g., DTG, BIC, and/or boosted DRV) with careful monitoring of virologic response and early resistance testing, if inadequate virologic suppression.	Resuppression

[a] When switching an ARV regimen in a person with HBV/HIV coinfection, ARV drugs that are active against HBV and have a high resistance barrier to HBV (i.e., tenofovir) should be continued as part of the new regimen, or another HBV drug (i.e., entecavir) should be started. Discontinuation of these drugs may lead to the reactivation of HBV, which may result in serious hepatocellular damage.

[b] If other NRTI-resistance mutations are present, use resistance test results to guide NRTI usage in the new regimen.

[c] See text for details and additional options in special settings.

[d] Response to DTG depends on the type and number of INSTI mutations.

Key: 3TC = lamivudine; ART = antiretroviral therapy; ARV = antiretroviral; BIC = bictegravir; CD4 = CD4 T lymphocyte; DRV = darunavir; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EVG = elvitegravir; FTC = emtricitabine; FTR = fostemsavir; HBV = hepatitis B virus; IBA = ibalizumab; INSTI = integrase strand transfer inhibitor; LEN = lenacapavir; LPV/r = lopinavir/ritonavir; MVC = maraviroc; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; RAL = raltegravir

Table 11a. HIV-Related ASCVD Risk Enhancers

Updated: October 27, 2026
Reviewed: October 27, 2026

HIV-Related ASCVD Risk Enhancers
• Prolonged duration of HIV infection
• Acquisition of HIV perinatally or during adolescence
• History of prolonged HIV viremia
• Delay in ART initiation
• ART non-adherence
• Low current or nadir CD4 count (<350 cells/mm^3)
• Exposure to older ARVs with cardiometabolic toxicity, including ABC
• Lipodystrophy/lipoatrophy
• MASLD
• HCV coinfection

Key: ABC = abacavir; ART = antiretroviral therapy; CD4 = CD4 T lymphocyte; HCV = hepatitis C virus; MASLD = metabolic dysfunction-associated steatotic liver disease

Table 11b. ASCVD Risk Enhancers

Updated: October 27, 2026
Reviewed: October 27, 2026

ASCVD Risk Enhancers
• HIV infection
Additional ASCVD risk enhancers as reported in the 2026 Dyslipidemia Guideline[a]
• History of premature ASCVD in a parent or sibling (onset aged <55 years for men, <65 years for women)
• Higher-risk ancestry (e.g., South Asian, Filipino)
• High polygenic risk (if measured)
• Chronic inflammatory diseases (e.g., systemic lupus, rheumatoid arthritis, advanced psoriasis, inflammatory arthritis)
• Lp(a) ≥125 nmol/L or ≥50 mg/dL
• hsCRP ≥2 mg/L on more than one occasion (if measured)
• TG persistently ≥175 mg/dL (if nonfasting) and ≥150 mg/dL (if fasting)
• Cardiovascular-kidney-metabolic (CKM) syndrome
• LDL-C persistently ≥160–189 mg/dL, non–HDL-C ≥190–219 mg/dL, or ApoB ≥120 mg/dL
• Reproductive risk markers (premature menopause, preeclampsia, gestational diabetes, gestational hypertension, preterm delivery)

[*] Refer to the 2026 Dyslipidemia Guideline, Table 13, page e1188.

Key: ApoB = apolipoprotein B; ASCVD = atherosclerotic cardiovascular disease; CKM = cardiovascular-kidney-metabolic; HDL-C = high-density lipoprotein cholesterol; hsCRP = high-sensitivity C-reactive protein; LDL-C = low-density lipoprotein cholesterol; Lp(a) = lipoprotein(a); TG = triglycerides

Table 11c. Intensity of Statin Therapy

Updated: October 27, 2026
Reviewed: October 27, 2026

Moderate Intensity (30% to 49% LDL-C Lowering Effect)	High Intensity (≥50% LDL-C Lowering Effect)
Pitavastatin 4 mg (AI)[a]	Atorvastatin[b] 40–80 mg
Atorvastatin 20 mg (AII)[a,b]	Rosuvastatin[b] 20–40 mg
Rosuvastatin 10 mg (AII)[a,b]	
Fluvastatin XL 80 mg	
Fluvastatin 40 mg twice daily	
Lovastatin[c] 40–80 mg	
Pravastatin 40–80 mg	
Simvastatin[c] 20–40 mg	

[a] Bolded statins are included in recommendations from the Panel for the Use of Antiretroviral Agents in Adults and Adolescents With HIV; see Rationale for the Panel's Recommendation on Choice and Dose of Statin above.

[b] Atorvastatin and rosuvastatin have known drug–drug interactions with ritonavir- and cobicistat-boosted antiretrovirals (ARVs); see the Liverpool HIV Drug Interaction Checker.

[c] Simvastatin and lovastatin are contraindicated with ritonavir- and cobicistat-boosted ARVs.

Key: LDL-C = low-density lipoprotein cholesterol; XL = extended-release

Table 12. Strategies to Improve Antiretroviral Therapy Adherence

Updated: September 24, 2026
Reviewed: September 24, 2026

Category	Strategies to Improve ART Adherence
Regimen selection	• Simple ART regimens (e.g., fixed-dose, once daily combinations) with high barriers to resistance are preferable, if possible. • Long-acting injectables may also be considered, including for youth with adherence challenges due to social environment (e.g., unstable housing, coexisting substance use). • Minimal side effects • Small pill size
Treatment plan	• Develop the plan in partnership with AYA with HIV, considering daily schedule; disclosure; tolerance of pill number, size, and frequency; issues affecting absorption; dietary considerations; and potential adverse effects and interactions with other medications. • Design youth-friendly reminder systems (e.g., apps, cell phone/text reminders, pill boxes) for adherence support.
Motivators	• Emphasize personal benefits (e.g., viral suppression, improved health). • Undetectable equals untransmittable (U=U) status disclosure to sexual partners without HIV may act as a particularly strong motivator for reducing stigma and improving adherence among AYA with HIV.

Key: ART = antiretroviral therapy; AYA = adolescents and young adults

Table 13. Approaches to Optimize Transition to Adult Care for Adolescents and Young Adults With HIV

Updated: September 24, 2026
Reviewed: September 24, 2026

Pediatric/Adolescent	Adult
Personnel	
• Engage a team knowledgeable about medical and psychosocial issues of AYA with HIV, including the challenges of transitioning youth to adult care settings. • Utilize providers with training in medical care across the lifespan, if available, and discuss distinct models of care (i.e., HIV providers as primary care physicians vs. as consultants) with AYA. • Assign a transition point person and have their contact information readily available. • Educate clinic personnel about transitioning AYA with HIV and their needs. • Encourage a member of the pediatric care team to attend the first appointment with the adult provider if feasible.	• Engage an adult care team knowledgeable about medical and psychosocial issues of AYA with HIV, including the challenges of transitioning youth to adult care settings. • Utilize providers with training in medical care across the lifespan and ensure adequate training of adult providers to care for AYA with HIV. • Assign a transition point person and have their contact information readily available. • Identify and engage outreach specialists, navigators, social workers, case managers, and providers with a youth-friendly approach. • Educate clinic personnel about intersection and structural stigmas that many AYA with HIV experience. • Train personnel in cultural competence to address intersectional and structural stigmas that AYA with HIV experience. • Encourage a member of the pediatric care team to attend the first appointment with the adult provider if feasible.
Education and Preparation of AYA With HIV	
• Enhance AYA with HIV health literacy, including understanding of HIV and their medical history. • Address resistance to transition of care caused by lack of information, concerns about stigma or risk of disclosure, and differences in practice styles. • Help AYA develop life skills, including, but not limited to, counseling on appropriate use of a primary care provider and how to manage appointments; prompt symptom recognition and reporting; and self-efficacy in requesting prescriptions, arranging for transportation to appointments, and managing insurance and assistance benefits.	• If possible, meet AYA with HIV before transition, if possible. Clearly outline policies and expectations before and during the first visit, if possible. • Have an orientation plan to acquaint newly transitioned AYA with HIV to the clinic environment and adult clinical care program, including workflows that may be new to them (e.g., using an electronic portal to schedule appointments), and provide concrete examples of when to use different communication modalities (e.g., messaging, leaving a voicemail, paging). • Implement interventions that may improve outcomes, such as patient navigators, peer support groups, mental health assessment, and inclusion of guardians where available.

Table 13. Approaches to Optimize Transition to Adult Care for Adolescents and Young Adults With HIV

Pediatric/Adolescent	Adult
	• Address health literacy and ensure AYA with HIV understand HIV and goals of care. • Continue to work with AYA with HIV toward developing life skills, etc.
Strategies and Approaches	
• Develop a formal, individualized transition plan to address comprehensive care needs, including medical, psychosocial, and financial aspects of transitioning to adult HIV care. • Optimize provider communication between adolescent and adult clinics, including a warm multidisciplinary, medical history handoff that includes prior regimens, outcomes (e.g., adherence, virologic failure and resistance), and primary data (e.g., dated genotypic resistance testing results) whenever possible.	• Develop a clinic model based on specific needs (e.g., simultaneous transition of mental health and/or case management versus a gradual phase-in) and staffing. • Engage in a warm handoff from the pediatric team, which allows a nuanced understanding of challenges and goals for the patient. Devise a plan for how to continue building the skills on the adult side. • Build in flexibility (e.g., permissive grace period for appointments, leniency for missed appointments if feasible), particularly when first transitioning. • Encourage physical spaces, structures, and pins that are supportive of AYA with HIV and their identities (e.g., youth-friendly art, pride flag, expedited rooming, separate waiting areas when space allows). • Incorporate other aspects of care beyond HIV management, if possible (e.g., family planning, sexually transmitted infection testing and treatment, mental health, substance use). • Close the loop with the pediatric/adolescent providers and encourage them to reach out if the AYA continues to contact their former clinic.
Communication	
• Foster regular dialogue between pediatric and adolescent and adult teams before and after transition through regular meetings, case conferences, etc. • Solicit feedback from the AYA with HIV. • Use digital technology (e.g., texting, HIPAA-compliant messaging apps, telemedicine).	
Evaluation	
• Implement ongoing evaluation to measure the success of the selected model (retention in adult care).	

Key: AYA = adolescents and young adults; HIPAA = Health Insurance Portability and Accountability Act

Table 14. Adolescents and Young Adults With HIV Antiretroviral Adherence Barriers and Strategies to Support Adherence

Updated: September 24, 2026
Reviewed: September 24, 2026

ART Adherence Barrier	Adherence Support Strategy	Rationale for Adherence Support Strategy
Prioritization of short-term goals and socialization with peers over daily HIV treatment adherence	Youth-friendly reminder systems (e.g., text, phone, apps, pill boxes, support buddies/peers/groups)	• Daily adherence to ARV regimens may not take priority in the lives of AYA with HIV. • AYA with HIV benefit from reminder systems to facilitate adherence.
	Novel ART delivery strategies (e.g., long-acting oral or injectable ARVs)	• AYA with HIV show high interest in long-acting alternatives for ART delivery. • May obviate disclosure concerns • Promising tool to facilitate adherence for AYA with HIV
	Directly observed therapy (in person or virtual) may be considered	• May provide support and oversight, particularly for AYA with barriers to independently taking ART.
Social concerns related to loss of confidentiality	Simple ARV regimens	• Adolescents do not want to be different from peers; adherence to complex regimens is particularly challenging. • Simple ARV regimens are preferable for AYA with HIV.
	User-friendly and discreet regimens	• Avoidance of HIV-related stigma and of unintentional disclosure of HIV status is a priority for AYA with HIV. • Protect confidentiality with user-friendly and discreet adherence supports (e.g., discreet pill bottles, reminder systems).
Side effects/fear of side effects	ARV regimens that minimize side effects Early and expeditious prevention, recognition, and management of side effects, with transparency about potential side effects	• Side effects are associated with nonadherence to ARVs. • Regimens with minimal side effects and medications that manage side effects have utility for AYA with HIV.
Denial or dismissal of HIV diagnosis	Motivational interviewing and motivational enhancement therapy	• Motivational interviewing and motivational enhancement therapy acknowledge AYA with HIV's autonomy and potential ambivalence about treatment adherence. • Motivational interviewing and motivational enhancement therapy have shown promise for improving adherence to chronic disease treatment, including HIV.

Table 14. Adolescents and Young Adults With HIV Antiretroviral Adherence Barriers and Strategies to Support Adherence

ART Adherence Barrier	Adherence Support Strategy	Rationale for Adherence Support Strategy
	Positive affirmation messages (e.g., text, app, trusted messengers)	• Electronically delivered positive affirmation messages can improve self-esteem and ARV adherence among AYA with HIV. • Some advocacy groups provide other resources with positive affirmations that can improve self-esteem and ARV adherence.
Non-disclosure	Early disclosure and assistance with disclosure	• Early (by age 10–12 years) disclosure of HIV status for those with perinatally acquired HIV enhances adherence and self-esteem and limits stigma. • Assistance with disclosure to partners or peers may enhance outcomes, including self-esteem, self-acceptance, and mood.
Lack of health literacy regarding the benefits of ART	Health literacy support and U=U education	• AYA with HIV may not fully understand the importance of taking ARVs daily or receiving LA CAB/RPV injections, particularly when they are asymptomatic. • Increased health literacy is associated with better adherence to ARV regimens. • U=U education holds promise for AYA with HIV.
Mistrust of providers and the medical establishment	Empathetic and patient-centered communication	• Communication exploring the needs of AYA with HIV can build trust, including exploring needs not directly related to HIV treatment (e.g., school, employment, relationships).
Mental health and/or substance use	Individualized mental health and substance use services	• Comprehensive mental health and substance use services have shown promise for improving viral suppression among AYA with HIV. • Service should be delivered based on individualized needs assessments.
Social isolation and lack of familial and social support	Family and peer support groups	• Family members and peers are a defense against stigma and social isolation, a source of emotional support, and partners in medication management.
Provider views of AYA with HIV as “risky” and/or not ready for ART	Promote development of a positive rather than risk-centered identity among AYA with HIV	• Adolescence and young adulthood are periods of identity development where HIV stigma is particularly problematic. • To reduce stigma and improve ARV adherence, providers should not conceptualize AYA with HIV as “high risk.”
Provider implicit biases regarding AYA with HIV	Implicit bias training	• Consciously changing biased associations and repeated bias self-regulation training can reduce providers’ implicit biases.

Table 14. Adolescents and Young Adults With HIV Antiretroviral Adherence Barriers and Strategies to Support Adherence

ART Adherence Barrier	Adherence Support Strategy	Rationale for Adherence Support Strategy
Lack of youth-friendly services	Dedicated youth HIV clinic or adaptation of youth-friendly services	• Clinic days or hours dedicated to AYA with HIV patients better address unique adherence needs; youth-friendly services include the following: o Flexible hours, easy scheduling, telephone/telehealth appointments o Providers trained in working with AYA with HIV o Youth-friendly waiting rooms and physical spaces o Supplemental services that comprehensively address psychosocial and health needs of AYA with HIV o Incentives for AYA with HIV care engagement
	Youth-friendly hours, staff, and physical space	• Where dedicated hours and services are not possible, youth-friendly service elements can be integrated into existing clinic structures using strategies such as— o Offering evening hours o Staff training on service delivery to AYA with HIV o Youth-friendly waiting rooms and physical spaces
	Referrals to more youth-friendly HIV providers	• Where youth-friendly services are not possible, referrals to more youth-friendly HIV care providers should be considered. • Referral decisions should be made collaboratively with the patient.
Lack of comprehensive services that address common psychosocial stressors	Supplemental health, behavioral health, and psychosocial support services	• Individualized delivery of comprehensive supplemental services helps address unique needs of AYA with HIV, including the following: o Primary care and sexual and reproductive health services o Behavioral health services o Psychosocial support services (e.g., school support, transportation, support groups, housing and food assistance)
	Collaboration with and referrals to outside support services	• Where delivery of comprehensive supplemental services is not possible, collaborations with and referrals to outside support services should be considered. • Emphasize strengths-based supports

Key: ART = antiretroviral treatment; ARV = antiretroviral; AYA = adolescent and young adult; LA CAB/RPV = long-acting cabotegravir plus rilpivirine; U=U = undetectable equals untransmittable

Table 15. Identifying, Diagnosing, and Treating Acute and Recent HIV Infection

Updated: September 12, 2024
Reviewed: September 12, 2024

Suspicion of Acute HIV Infection

- Health care providers should consider the possibility of acute HIV infection in people with the signs, symptoms, or laboratory findings described below and in asymptomatic people with a possible acute (within 2–6 weeks) exposure to HIV.[a]
  - Signs, symptoms, or laboratory findings of acute HIV infection may include but are not limited to, one or more of the following: fever, lymphadenopathy, skin rash, myalgia, arthralgia, headache, diarrhea, pharyngitis, oral ulcers, leucopenia, thrombocytopenia, and transaminase elevation.
  - High-risk exposures include sexual contact with someone who has HIV or is at risk of HIV infection, sharing needles, syringes, or equipment for drug preparation or injection, or any situation where a person's mucous membranes or broken skin come into contact with bodily fluids that may carry HIV.

Differential Diagnosis

- The differential diagnosis of acute HIV infection may include but is not limited to, viral illnesses such as COVID-19, EBV and non-EBV (e.g., CMV) infectious mononucleosis syndromes, influenza, viral hepatitis, streptococcal infection, or syphilis. Diagnosis of any STI should prompt HIV testing and consideration of acute HIV infection.

Testing to Diagnose or Confirm Acute HIV Infection

- Acute HIV infection is defined as detectable HIV RNA or p24 antigen (the specific antigen used in currently available HIV-1/2 Ag/Ab combination assays) in the setting of a negative or indeterminate HIV antibody test result.
- A reactive HIV antibody test result or Ag/Ab combination test result must be followed by supplemental confirmatory testing.
- A negative or indeterminate HIV antibody test result in a person with a reactive Ag/Ab test result or in whom acute HIV infection is suspected requires plasma HIV RNA testing to diagnose acute HIV infection.
- A positive result on a quantitative or qualitative plasma HIV RNA test in the setting of a negative or indeterminate antibody test result indicates that acute HIV infection is highly likely. In this case, the diagnosis of HIV infection should be confirmed by subsequent documentation of HIV antibody seroconversion.
- A positive HIV Ag/Ab test result or a positive HIV RNA test result in the setting of a negative HIV antibody test result in a person taking PrEP should prompt immediate confirmation of HIV diagnosis. It is important to collect a new blood specimen to verify the HIV diagnosis before initiating HIV treatment.

Antiretroviral Therapy After Diagnosis of Early HIV Infection

- ART is recommended for all people with HIV, including those with early HIV infection **(AI).** ART should be initiated as soon as possible after HIV diagnosis **(AII).**
- Once initiated, the goals of ART are to achieve sustained plasma virologic suppression, prevent HIV transmission **(AII),** and preserve immune function **(AIII).**
- All women of childbearing potential who receive a diagnosis of early HIV infection should have a pregnancy test **(AIII).**
- Pregnant women with early HIV infection should begin ART as soon as possible for their own health and to prevent perinatal transmission of HIV **(AI).**

Table 15. Identifying, Diagnosing, and Treating Acute and Recent HIV Infection

- A blood sample for genotypic drug-resistance testing should be obtained before initiating ART to guide the selection of the regimen **(AIII),** but ART should be initiated as soon as possible, often before resistance-test results are available. If resistance is subsequently identified, treatment should be modified as needed.
- Standard genotypic drug-resistance testing should be performed for mutations in the reverse transcriptase and protease genes **(AIII)** for all people with early HIV**.** Genotype testing for INSTI resistance should be performed for those who acquire HIV during or after the use of CAB-LA as PrEP, if transmitted INSTI resistance is suspected, or if HIV diagnosis is made after receiving an INSTI-based regimen for PEP **(AIII).**
- ART can be initiated before the results of drug-resistance testing are known. For individuals who do not have a history of using CAB-LA as PrEP, one of the following ARV regimens is recommended **(AIII):**
  - BIC/TAF/FTC **(AIII);** or
  - DTG with (TAF or TDF)[b] plus (FTC or 3TC) **(AIII)**
- For individuals with a history of using CAB-LA as PrEP, genotypic resistance testing performed before starting ART should include screening for INSTI-resistance mutations **(AIII).** Recommended regimens include the following:
  - (DRV/c[c] or DRV/r) with (TAF or TDF)[b] plus (FTC or 3TC)—pending the results of the genotype **(AIII).** Empiric INSTI-containing regimens **are not recommended (AIII),** because INSTI resistance may be present in those who acquire HIV during the use of CAB-LA and possibly up to 4 years after.

[a] In some settings, activities that increase the risk of HIV infection may not be recognized or perceived as risky by the health care provider, the person at risk, or both. Thus, even in the absence of reported high-risk activities, symptoms and signs consistent with acute retroviral syndrome should motivate health care providers to consider a diagnosis of acute HIV infection.

[b] TAF and TDF are two forms of tenofovir that are approved in the United States. TAF has fewer bone and kidney toxicities than TDF, whereas TDF is associated with lower lipid levels. Safety, cost, and accessibility are among the factors to consider when choosing between these drugs.

[c] COBI should be avoided in pregnancy because lower concentrations of COBI and DRV have been reported during the second and third trimesters.

Key: 3TC = lamivudine; Ag/Ab = antigen/antibody; ART = antiretroviral therapy; ARV = antiretroviral; BIC = bictegravir; CAB-LA = long-acting cabotegravir; CMV = cytomegalovirus; COBI = cobicistat; DRV = darunavir; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EBV = Epstein-Barr virus; FTC = emtricitabine; INSTI = integrase strand transfer inhibitor; PEP = post-exposure prophylaxis; PrEP = pre-exposure prophylaxis; STI = sexually transmitted infection; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Table 16. Medications for Treatment of Substance Use Disorders

Updated: September 24, 2026
Reviewed: September 24, 2026

Medication	Dose and Recommendations	Potential Interaction With ARV Drugs	Comments
Alcohol Use Disorder			
Acamprosate	666 mg PO three times a day *or* 333 mg PO three times a day for people with CrCl 30–50 mL/min	No significant interaction with ARV drugs expected.	**Contraindicated** in people with CrCl <30 mL/min
Disulfiram	250 mg PO once daily	Use with caution when prescribing an ARV oral solution that contains ethanol and/or propylene glycol (e.g., FPV, LPV/r, RTV).	Counsel people regarding disulfiram reaction when taken with alcohol; symptoms for the reaction may include flushing, tachycardia, nausea, vomiting, or hypotension.
Naltrexone	50–100 mg PO once daily 380 mg IM every 4 weeks	No significant interaction with ARV drugs expected.	Has the greatest efficacy of all FDA-approved medications for AUD.
Opioid Use Disorder			
Buprenorphine *or* **Buprenorphine/ Naloxone** (sublingual tablets)	Individualize dosing based on the person's opioid use. See product labels for dosing information.	Potential interaction of buprenorphine with ARV drugs that are CYP inhibitors or inducers. See the Liverpool HIV Drug Interaction Checker.	Verify that the person is using the appropriate technique for sublingual administration before adjusting the dose, because improper administration will result in poor absorption and low drug levels.
Buprenorphine (subcutaneous injection)	Weekly or monthly subcutaneous injection available in various doses. See product label for dosing information.	Potential interaction with ARV drugs that are CYP inhibitors or inducers. See the Liverpool HIV Drug Interaction Checker.	Weekly and monthly formulations are different. Weekly doses cannot be combined to yield an equivalent monthly dose. Because buprenorphine initiation may carry a risk of relapse and subsequent overdose, providing naloxone is strongly recommend.

Table 16. Medications for Treatment of Substance Use Disorders

Medication	Dose and Recommendations	Potential Interaction With ARV Drugs	Comments
Methadone	Individualize the dose. People who receive higher doses (>100 mg PO per day) are more likely to remain in treatment.	Potential interaction with ARV drugs that are CYP inhibitors or inducers. See the Liverpool HIV Drug Interaction Checker.	QTc prolongation is a concern at higher doses. Methadone can be prescribed for OUD only by a licensed OTP.
Naltrexone	50–100 mg PO once daily Depot formulation is a fixed-dose monthly injection.	No significant interaction with ARV drugs expected.	Longer time of continuous abstinence in those who received depot formulation naltrexone compared with placebo after transition from prison to community.
Nicotine Use Disorder			
Nicotine Replacement Therapy	The FDA has approved a wide variety of nicotine replacement products. All formulations are effective.	No significant interaction with ARV drugs expected.	Work with the person to identify the route of delivery that they will use and find most helpful.
Bupropion	Start at 150 mg PO daily for 3 days, then increase to either 150 mg twice daily or 300 mg once daily (use only formulations that are approved for once-daily dosing).	Bupropion is a CYP2D6 inhibitor and a CYP2B6 substrate. See the Liverpool HIV Drug Interaction Checker.	For optimal results, tobacco quit date should occur 1 week after starting therapy.
Varenicline	Titrate the dose based on tolerability until the desired effect is achieved. The goal is to reach a dose of 1 mg PO twice daily. Requires dose adjustment in people with CrCl <30 mL/min.	No significant interaction with ARV drugs expected.	For optimal results, tobacco quit date should occur 1 week after starting therapy.

Key: ARV = antiretroviral; AUD = alcohol use disorder; CrCl = creatinine clearance; CYP = cytochrome P450; FDA = U.S. Food and Drug Administration; FPV = fosamprenavir; IM = intramuscular; LPV/r = lopinavir/ritonavir; OTP = opioid treatment program; OUD = opioid use disorder; PO = orally; QTc = QT corrected for heart rate; RTV = ritonavir

Table 17a. Drug Interactions Between Antiretroviral Drugs and Immunosuppressants Used Post-Transplant

Updated: September 12, 2024
Reviewed: September 12, 2024

	Overview of Interaction Potential	Tacrolimus	Sirolimus	Cyclosporine
NRTI	↔ NRTI ↔ Immunosuppressant	Initiate standard doses. Monitor renal function if used with TDF.	Initiate standard doses. Monitor renal function if used with TDF.	Initiate standard doses. Monitor renal function if used with TDF.
NNRTI	↔ NNRTI **With EFV, ETR, and NVP** • ↓ Immunosuppressant expected **With DOR (A Weak Inducer)** • ↓ Immunosuppressant possible **With RPV** • ↔ Immunosuppressant	Initiate standard doses and adjust based on TDM. **With EFV, ETR, and NVP** • May need higher doses **With RPV** • Monitor QTc with RPV.	Initiate standard doses and adjust based on TDM. **With EFV, ETR, and NVP** • May need higher doses **With RPV** • Monitor QTc with RPV.	Initiate standard doses and adjust based on TDM. **With EFV, ETR, and NVP** • May need higher doses. **With RPV** • Monitor QTc with RPV.
PI (With COBI or RTV as PK Booster)	↔ PI ↑ Immunosuppressant requiring dose reduction and/or extending dosing interval	↑ ↑ Tacrolimus Switch to a non-PI/c or PI/r-based regimen. If not possible, consider initiating tacrolimus 0.5 mg PO every 5–7 days. Adjust based on TDM.	↑ ↑ Sirolimus Switch to a non-PI/c or PI/r-based regimen. If not possible, consider initiating sirolimus 1–1.5 mg PO once weekly. Adjust based on TDM.	↑ CsA Consider initiating reduced dose of CsA at 5% to 20% of standard daily dose. Adjust based on TDM.
INSTI	↔ INSTI **For BIC, CAB, DTG, or RAL** • ↔ Immunosuppressant **With EVG/c** • ↑ Immunosuppressant with EVG/c	**For BIC, CAB, DTG, or RAL** • Initiate standard doses and adjust based on TDM. **With EVG/c** • ↑ ↑ Tacrolimus expected	**For BIC, CAB, DTG, or RAL** • Initiate standard doses and adjust based on TDM. With EVG/c • ↑ ↑ Sirolimus expected	**For BIC, CAB, DTG, or RAL** • Initiate standard doses and adjust based on TDM. **With EVG/c** • ↑ CsA expected

Table 17a. Drug Interactions Between Antiretroviral Drugs and Immunosuppressants Used Post-Transplant

	Overview of Interaction Potential	Tacrolimus	Sirolimus	Cyclosporine
		• Switch to a non–EVG/c-based regimen. If not possible, consider initiating tacrolimus 0.5 mg PO every 5–7 days. Adjust based on TDM.	• Switch to a non–EVG/c-based regimen. If not possible, consider initiating sirolimus 1–1.5 mg PO once weekly. Adjust based on TDM.	• Consider initiating reduced CsA at 10% to 20% of total standard daily dose. Adjust based on TDM.
Capsid Inhibitors	↔ LEN expected ↑ Immunosuppressant expected	No data to guide dosing Adjust based on TDM.	No data to guide dosing Adjust based on TDM.	No data to guide dosing Adjust based on TDM.
CCR5 Antagonist, Fusion, Attachment, and Post-Attachment Inhibitors	↔ ARV drugs expected ↔ Immunosuppressant expected	Initiate standard doses. Adjust based on TDM.	Initiate standard doses. Adjust based on TDM.	Initiate standard doses. Adjust based on TDM.

Key: ↔ = No clinically significant change; ↓ = decreased; ↑ = increased; ↑ ↑ = greatly increased; ARV = antiretroviral; BIC = bictegravir; CAB = cabotegravir; CCR5 = chemokine co-receptor 5; COBI = cobicistat; CsA = cyclosporine; DOR = doravirine; DTG = dolutegravir; EFV= efavirenz; ETR = etravirine; EVG/c = elvitegravir/cobicistat; INSTI = integrase strand transfer inhibitor; LEN = lenacapavir; NRTI = nucleos(t)ide reverse transcriptase inhibitor; NNRTI = non-nucleoside reverse transcriptase inhibitor; NVP = nevirapine; PI = protease inhibitor; PI/c = cobicistat-boosted protease inhibitor; PI/r = ritonavir-boosted protease inhibitor; PO = orally; QTc = QT corrected for heart rate; RAL = raltegravir; RPV = rilpivirine; RTV = ritonavir; TDF = tenofovir disoproxil fumarate; TDM = therapeutic drug monitoring

Table 17b. Drug Interactions Between Antiretroviral Drugs and Medications Commonly Used in Transplant Recipients

Updated: September 12, 2024
Reviewed: September 12, 2024

Drug Class	Examples	Effects of Interactions
Azole Antifungals	Isavuconazole Itraconazole Posaconazole Voriconazole	**CYP Inhibition (e.g., With RTV or COBI as PK Booster, Azoles)[a]** • ↑ Azole concentration, ↑ toxicities • ↑ ARV concentration possible, ↑ toxicities **CYP or Glucuronidation Induction (e.g., EFV, NVP)** • ↓ Azole concentration, ↓ efficacy
Chemotherapy	Busulfan Cyclophosphamide Etoposide[b]	**CYP Inhibition or Induction (e.g., With RTV or COBI as PK Booster)** • ↑ or ↓ Chemotherapy concentration with RTV, ↑ toxicities, or ↓ efficacy • ↑ Chemotherapy concentration with COBI, ↑ toxicities **CYP Induction (e.g., EFV, ETR, NVP)** • ↓ Chemotherapy concentration, ↓ efficacy
Corticosteroids	Dexamethasone	**Dose-Dependent CYP3A4 Induction** • ↓ ARVs that are metabolized by CYP3A4
	High-dose Prolonged Use Prednisone/Prednisolone	**CYP3A4 Inhibition (e.g., With RTV or COBI as PK booster)** • ↑ Steroid concentration, ↑ toxicities
Acid-Reducing Medications	PPI, H2 Antagonists	**Increase in Gastric pH** • ↓ Absorption of certain ARVs, including ATV or RPV. See the Liverpool HIV Drug Interaction Checker for recommended timing of administration if concomitant therapy is needed.

Key: ARV = antiretroviral, ATV = atazanavir; COBI = cobicistat; CYP = cytochrome P450; CYP3A4 = cytochrome P3A4; EFV = efavirenz; ETR = etravirine; H2 = histamine 2; NVP = nevirapine; PK = pharmacokinetic; PPI = proton pump inhibitor; RPV = rilpivirine; RTV = ritonavir

[a] CYP inhibition by azoles can ↑ concentrations of immunosuppressants and certain cancer chemotherapy drugs.

[b] The listed are frequently used conditioning therapy pre-hematopoietic transplants that have potential interactions with ART. For other chemotherapeutic agents, consult a clinical pharmacist with expertise in transplant-related drug–drug interactions.

Table 18. Concomitant Use of Selected Antiretroviral Drugs and Hepatitis C Virus Direct-Acting Antiviral Drugs for Treatment of Hepatitis C Virus in Adults With HIV

The recommendations in this table for concomitant use of select HIV drugs with U.S. Food and Drug Administration (FDA)–approved HCV direct-acting antiviral drugs are based on available pharmacokinetic interaction data or are predictions based on the known metabolic pathways of the agents. Whenever HIV and HCV drugs are used concomitantly, people should be closely monitored for HIV and HCV virologic efficacy and potential toxicities. Because the field of HCV therapy is rapidly evolving, readers also should refer to the latest drug product labels and the Liverpool HEP Drug Interaction Checker for updated information.

Note: Interactions with fosamprenavir, nelfinavir, and nevirapine are **not** included in this table because they are no longer commonly used and/or are not recommended by the Panel on Antiretroviral Guidelines for Adults and Adolescents. Please refer to the FDA product labels or the Liverpool HEP Drug Interaction Checker for information regarding drug interactions with these HIV protease inhibitors.

ARV Drugs	Individual Drug	Coformulated				
		May be used in mild, moderate, or severe hepatic impairment (Child-Pugh class A, B, or C)		**May be used in mild hepatic impairment** (Child-Pugh class A) **Should *NOT* be used in those with moderate to severe hepatic impairment** (Cirrhosis classified as Child-Pugh class B or C)		
	Sofosbuvir	**Ledipasvir/ Sofosbuvir**	**Sofosbuvir/ Velpatasvir**	**Sofosbuvir/ Velpatasvir/ Voxilaprevir**	**Glecaprevir/ Pibrentasvir**	**Elbasvir/ Grazoprevir**
3TC	✓	✓	✓	✓	✓	✓
ABC	✓	✓	✓	✓	✓	✓
FTC	✓	✓	✓	✓	✓	✓
TAF	✓	✓	✓	✓	✓	✓
TDF	✓	✓ Monitor for TDF-associated adverse events.	✓ Monitor for TDF-associated adverse events.	✓ Monitor for TDF-associated adverse events.	✓	✓

Table 18. Concomitant Use of Selected Antiretroviral Drugs and Hepatitis C Virus Direct-Acting Antiviral Drugs for Treatment of Hepatitis C Virus in Adults With HIV

ARV Drugs	Individual Drug	Coformulated				
		May be used in mild, moderate, or severe hepatic impairment (Child-Pugh class A, B, or C)		**May be used in mild hepatic impairment** (Child-Pugh class A) **Should *NOT* be used in those with moderate to severe hepatic impairment** (Cirrhosis classified as Child-Pugh class B or C)		
	Sofosbuvir	**Ledipasvir/ Sofosbuvir**	**Sofosbuvir/ Velpatasvir**	**Sofosbuvir/ Velpatasvir/ Voxilaprevir**	**Glecaprevir/ Pibrentasvir**	**Elbasvir/ Grazoprevir**
Unboosted ATV	✓	✓	✓	✖	✖	✖
ATV/r or ATV/c	✓	✓ If a PI/r or PI/c is used with TDF, ↑ TDF concentrations are expected. If coadministration is necessary, monitor for TDF-associated adverse events.[a]	✓ If a PI/r or PI/c is used with TDF, ↑ TDF concentrations are expected. If coadministration is necessary, monitor for TDF-associated adverse events.[a]	✖	✖	✖
DRV/r or DRV/c	✓			✓ Consider monitoring for hepatotoxicity.[b] If a PI/r is used with TDF, ↑ TDF concentrations are expected. Monitor for TDF-associated adverse events.[a]	✖	✖
LPV/r	✓			✖	✖	✖
TPV/r	✖	✖	✖	✖	✖	✖
DOR	✓	✓ If used with TDF, monitor for TDF-associated adverse events.	✓	✓	✓	✓
EFV	✓		✖	✖	✖	✖
ETR	✓		✖	✖	✖	✖
RPV PO and IM	✓		✓	✓	✓	✓

Table 18. Concomitant Use of Selected Antiretroviral Drugs and Hepatitis C Virus Direct-Acting Antiviral Drugs for Treatment of Hepatitis C Virus in Adults With HIV

ARV Drugs	Individual Drug	Coformulated				
		May be used in mild, moderate, or severe hepatic impairment (Child-Pugh class A, B, or C)		**May be used in mild hepatic impairment** (Child-Pugh class A) **Should *NOT* be used in those with moderate to severe hepatic impairment** (Cirrhosis classified as Child-Pugh class B or C)		
	Sofosbuvir	**Ledipasvir/ Sofosbuvir**	**Sofosbuvir/ Velpatasvir**	**Sofosbuvir/ Velpatasvir/ Voxilaprevir**	**Glecaprevir/ Pibrentasvir**	**Elbasvir/ Grazoprevir**
DOR/ISL	✓	✓	✓	✓	✓	✓
BIC	✓	✓	✓	✓	✓	✓
CAB PO and IM	✓	✓	✓	✓	✓	✓
DTG	✓	✓ If used with TDF, monitor for TDF-associated adverse events.	✓	✓	✓	✓
EVG/c/TDF/FTC	✓	✖	✓ If used with TDF, monitor for TDF-associated adverse events.	✓ Consider monitoring for hepatotoxicity.[b] If used with TDF, monitor for TDF-associated adverse events.	✓ Consider monitoring for hepatotoxicity.[c] If used with TDF, monitor for TDF-associated adverse events.	✖
EVG/c/TAF/FTC	✓	✓	✓	✓ Consider monitoring for hepatotoxicity.[b]	✓ Consider monitoring for hepatotoxicity.[c]	✖
RAL	✓	✓	✓	✓	✓	✓

Table 18. Concomitant Use of Selected Antiretroviral Drugs and Hepatitis C Virus Direct-Acting Antiviral Drugs for Treatment of Hepatitis C Virus in Adults With HIV

ARV Drugs	Individual Drug	Coformulated				
		May be used in mild, moderate, or severe hepatic impairment (Child-Pugh class A, B, or C)		**May be used in mild hepatic impairment** (Child-Pugh class A) **Should *NOT* be used in those with moderate to severe hepatic impairment** (Cirrhosis classified as Child-Pugh class B or C)		
	Sofosbuvir	**Ledipasvir/ Sofosbuvir**	**Sofosbuvir/ Velpatasvir**	**Sofosbuvir/ Velpatasvir/ Voxilaprevir**	**Glecaprevir/ Pibrentasvir**	**Elbasvir/ Grazoprevir**
MVC	✓	✓	✓	✓	✓	✓
FTR	✓	✓	✓	✗ Use alternative HCV regimen if possible.	✓	✗ Use alternative HCV regimen if possible.
LEN	✓	✓	✓	✓	✓	✓

[a] Consider using an alternative HCV treatment or ARV regimen to avoid increases in TDF exposure. If coadministration is necessary, monitor for TDF-associated adverse events.

[b] Voxilaprevir exposures can increase when it is coadministered with pharmacologically boosted DRV or EVG. Until more safety data in clinical settings become available, people who are receiving voxilaprevir and pharmacologically boosted DRV or EVG should be monitored for hepatotoxicity.

[c] Glecaprevir exposures can increase when it is coadministered with EVG/c. Until more safety data in clinical settings become available, people who are receiving glecaprevir and EVG/c should be monitored for hepatotoxicity.

Key to Symbols:

✓ = ARV agents that can be used concomitantly
✗ = ARV agents **not recommended**
↑ = Increase

Key: 3TC = lamivudine; ABC = abacavir; ARV = antiretroviral; ATV = atazanavir; ATV/c = atazanavir/cobicistat; ATV/r = atazanavir/ritonavir; BIC = bictegravir; CAB = cabotegravir; DAA = direct-acting antiviral; DOR = doravirine; DRV = darunavir; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EFV = efavirenz; ETR = etravirine; EVG = elvitegravir; EVG/c = elvitegravir/cobicistat; FTC = emtricitabine; FTR = fostemsavir; HCV = hepatitis C virus; IM = intramuscular; ISL = islatravir; LEN = lenacapavir; LPV/r = lopinavir/ritonavir; MVC = maraviroc; PI/c = protease inhibitor/cobicistat; PI/r = protease inhibitor/ritonavir; PK = pharmacokinetic; PO = oral; RAL = raltegravir; RPV = rilpivirine; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TPV/r = tipranavir/ritonavir

Table 19. Strategies to Improve Linkage to Care, Retention in Care, Adherence to Appointments, and Adherence to Antiretroviral Therapy

Updated: September 12, 2024
Reviewed: September 12, 2024

Strategies	Examples
Provide an accessible, trustworthy, nonjudgmental multidisciplinary health care team.	• Include care providers, nurses, social workers, case managers, pharmacists, medication managers, and administrative staff on the care team; train all members on providing compassionate and person-centered care.
Strengthen early linkage to care and retention in care.	• Encourage health care team participation in linkage to and retention in care. • Use ARTAS training (if available). • Actively support linkage to care with assistance in making appointments and linkage to services to overcome barriers to care. • Streamline Ryan White HIV/AIDS Program eligibility verification processes for uninsured and underinsured clients.
Evaluate an individual's knowledge about HIV, HIV prevention, and HIV treatment and provide information based on this assessment.	• Keeping the current knowledge base in mind, provide information about HIV, including the natural history of the disease, HIV viral load and CD4 count and expected clinical outcomes according to these parameters, therapeutic and prevention consequences of poor adherence, and the importance of staying in HIV care.
Identify facilitators, potential barriers to adherence, and necessary medication management skills both when starting ART and thereafter.	• Assess each individual's cognitive competence and impairment. • Assess behavioral and psychosocial challenges, including mental illnesses, trauma, social support levels, alcohol consumption, substance use, nondisclosure of HIV serostatus, and stigma. • Identify and address language and literacy barriers. • Assess beliefs, perceptions, and expectations about taking ART (e.g., impact on health, side effects, disclosure issues, consequences of poor adherence). • Ask about medication-taking skills and foreseeable challenges with adherence (e.g., past difficulty keeping appointments, adverse effects from previous medications, issues managing other chronic medications, need for medication reminders and organizers). • Assess structural issues, including unstable housing, lack of income, unpredictable daily schedule, lack of prescription drug coverage, lack of continuous access to medications, and transportation problems.
Provide needed resources.	• Provide or refer for mental health and/or substance use treatment. • Provide resources to obtain prescription drug coverage (e.g., AIDS Drug Assistance Programs, Pharmaceutical Company HIV Patient Assistance Programs and Cost-Sharing Assistance Programs). • Assist people during insurance enrollment periods to facilitate enrollment in plans that cover antiretrovirals. • Provide resources about stable housing, social support, transportation assistance, income, and food security.

Table 19. Strategies to Improve Linkage to Care, Retention in Care, Adherence to Appointments, and Adherence to Antiretroviral Therapy

Strategies	Examples
Involve people with HIV in ARV regimen selection.	• Review potential side effects, dosing frequency, pill burden, storage requirements, food requirements, and consequences of poor adherence. • Assess daily activities and tailor a regimen to predictable and routine daily events. • Consider preferential use of ART regimen with a high barrier to resistance, such as BIC-, DTG-, or boosted DRV-based ART if poor adherence is anticipated. • Consider the use of STR or fixed-dose-combination formulations to reduce pill burden and/or dosing frequency. • Consider the use of LA CAB/RPV if clinically appropriate (see the Long-Acting Antiretroviral Therapy section above for further discussion). • Assess if the cost or copayment for drugs will affect adherence and access to medications.
Assess adherence at every clinic visit.	• Monitor viral load as a strong biological measure of adherence. • Use a simple behavioral rating scale or self-reported assessment. • Employ a structured format that normalizes or assumes less-than-perfect adherence and minimizes socially desirable or "white-coat adherence" responses. • Ensure that other members of the health care team also assess and support adherence.
Use positive reinforcement to foster adherence success.	• Inform people of the benefits of low or nondetectable levels of HIV viral load (e.g., "Undetectable = Untransmittable") and increases in CD4 counts. • Thank people for attending their appointments.
Identify the type of and reasons for poor adherence and target ways to improve adherence.	Identify if any of the following have contributed to poor adherence: • Failure to understand dosing instructions. • Complexity of regimen (e.g., pill burden, size, dosing schedule, food requirements, polypharmacy). • Pill aversion or pill fatigue. • Adverse effects. • Inadequate understanding of drug resistance and its relationship to adherence. • Appointment reminders and incorporation of input from people with HIV in appointment scheduling. • Cost-related issues (e.g., copays for medications or visits, missed work time). • Mental illness, drug and alcohol use, homelessness, or poverty. • Stigma of taking pills or attending HIV-related appointments. • Nondisclosure of status or privacy concerns leading to missed doses, refills, or appointments.

Table 19. Strategies to Improve Linkage to Care, Retention in Care, Adherence to Appointments, and Adherence to Antiretroviral Therapy

Strategies	Examples
Select from among available effective adherence and retention interventions.	• See the CDC's Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention for a summary of best practice interventions to improve linkage, retention, and adherence. • Use adherence-related tools to complement education and counseling interventions (e.g., text messaging, pill box monitors, pill boxes, alarms). • Use community resources to support adherence (e.g., visiting nurses, community workers, family, peer advocates, transportation assistance, pharmacy delivery). • Use prescription assistance programs (see "Provide needed resources" above in this table). • Use motivational interviews. • Provide outreach for people who drop out of care. • Use peer or paraprofessional treatment navigators. • Recognize positive clinical outcomes resulting from better adherence. • Arrange for DOT for people in substance use treatment (if feasible). • Enhance clinic support and structures to promote linkage and retention (e.g., reminder calls, flexible scheduling, assessment of clinic service satisfaction). • Offer telehealth services for primary care, as well as supportive services when appropriate.
Systematically monitor retention in care.	• Record and follow up on missed visits.

Key: ART = antiretroviral therapy; ARTAS = Anti-Retroviral Treatment and Access to Services; ARV = antiretroviral; BIC = bictegravir; CD4 = CD4 T lymphocyte; CDC = Centers for Disease Control and Prevention; DOT = directly observed therapy; DRV = darunavir; DTG = dolutegravir; LA CAB/RPV = long-acting cabotegravir/rilpivirine; STR = single-tablet regimen

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Updated: September 25, 2025
Reviewed: September 25, 2025

This table focuses on antiretroviral (ARV)-associated adverse effects that a person may experience as a result of taking an ARV regimen. The attribution of adverse effects to individual ARVs is inherently limited by the absence of long-term monotherapy trials, making it difficult to delineate the specific contribution of each medication within the combination regimens. These limitations should be considered carefully when assessing causality, as adverse effects may be related to the ARV regimen as a whole rather than to any single component.

Adverse effects for ARV medications that are no longer on the market or are not commonly used in clinical practice (didanosine [ddI], fosamprenavir/ritonavir, indinavir, lopinavir/ritonavir, nelfinavir, nevirapine, saquinavir/ritonavir, stavudine [d4T], tipranavir/ritonavir, zidovudine [ZDV]), with few exceptions, have been removed from this table. Clinicians should refer to the product labels or to the archived July 10, 2019, version of the Guidelines for information regarding the adverse effects associated with select older ARVs. Because some adverse effects may persist long after discontinuation of the older ARVs—such as d4T, ddI, zalcitabine, and ZDV—and people with HIV may still present with these long-lasting toxicities, these medications remain listed among the ARVs associated with adverse effects such as lipodystrophy and peripheral neuropathy.

For information regarding potential adverse effects of ARVs on fetuses and newborns when certain ARVs are taken around the time of conception or during pregnancy, refer to the Perinatal Guidelines.

This table highlights the common and/or severe adverse effects by ARV class and for individual ARVs, when appropriate. For ARV class–specific adverse effects, the table provides relative comparisons among individual ARVs for each class effect. In some cases, the terms “no known effect,” “rarely observed” (for select severe effects), “not common or severe,” or “no or limited data” are used, especially for the entry inhibitor and capsid inhibitor classes, where the evaluation of safety is based mostly on uncontrolled and nonrandomized clinical trials. See Appendix A. Drug Characteristics Tables for additional information listed by ARV medication.

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
Cardiovascular Effects	Cardiac Conduction Effects	No known effect	**RPV and EFV:** QTc prolongation **RPV:** QTc prolongation occurred at 3 and 12 times the recommended dose. Consider alternatives when coadministered with drugs with known risk of Torsade de Pointes.	**ATV:** PR prolongation. Risk factors include pre-existing heart disease and concomitant use of medications that may cause PR prolongation.	No known effect	**FTR:** QTc prolongation was seen at 4 times the recommended dose. Consider alternatives when coadministered with drugs with a known risk of Torsade de Pointes.	No known effect

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
	Cardiovascular Disease	**ABC:** Associated with an increased risk of MI in some cohort studies. Absolute risk greatest in people with traditional CVD risk factors.	No known effect	**DRV/r:** Associated with cardiovascular events in some cohorts.	Not common or severe	No or limited data	No or limited data
Dermatologic Effects, Not Including Systemic Hypersensitivity Reaction	Rash	**FTC:** Skin hyperpigmentation	All NNRTIs	ATV, DRV	All INSTIs	MVC, IBA, FTR	Not common or severe
	Stevens-Johnson Syndrome/Toxic Epidermal Necrosis	No known effect	EFV, ETR > DOR, RPV	Rarely observed with DRV and ATV	Rarely observed with BIC, CAB, and RAL	No or limited data	Not common or severe
Gastrointestinal Effects	Cholelithiasis	No known effect	No or limited data	**ATV:** Cholelithiasis and kidney stones may present concurrently. Median onset is 42 months after ARV initiation.	No known effect	No known effect	No known effect
	Gastrointestinal Effects	**ZDV > other NRTIs:** Nausea and vomiting	Not common or severe	GI intolerance (e.g., diarrhea, nausea, vomiting)	**EVG/c:** Nausea and diarrhea	No known effect	Not common or severe

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
Hepatic Effects	Hepatic Effects	**When TAF, TDF, 3TC, and FTC are withdrawn in people with HBV/HIV coinfection or when HBV resistance develops:** People with HBV/HIV coinfection may develop severe hepatic flares.	**EFV:** Most cases relate to an increase in transaminases. Fulminant hepatitis leading to death or hepatic failure requiring transplantation have been reported. **RPV:** Risk may be further increased in people with HBV or HCV coinfection.	**All PIs:** Drug-induced hepatitis and hepatic decompensation have been reported. **ATV:** Jaundice due to indirect hyperbilirubinemia	**DTG:** Rarely observed, but risk may be further increased in people with HBV or HCV coinfection. **BIC, CAB, EVG/c, RAL:** Not common or severe	**MVC:** Hepatotoxicity with or without rash or HSRs has been reported. **FTR:** Transaminase elevation was seen more commonly in patients with HBV/HCV. Transient elevation of bilirubin observed in clinical trials.	Not common or severe
Hypersensitivity Reactions, Not Including Rash Alone or Stevens-Johnson Syndrome	Hypersensitivity Reaction	**ABC: Contraindicated** if person is HLA-B*5701 positive. Median onset for HSR is 9 days after treatment initiation; 90% of reactions occur within 6 weeks.	Rarely observed	No known effect	Rarely observed	**MVC:** HSR reported as part of a syndrome related to hepatotoxicity. **IBA:** HSR, including infusion-related reactions and anaphylactic reactions, were reported.	No known effect

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
		HSR symptoms (in order of descending frequency): Fever, rash, malaise, nausea, headache, myalgia, chills, diarrhea, vomiting, abdominal pain, dyspnea, arthralgia, and respiratory symptoms Symptoms worsen with continuation of ABC. People should not be rechallenged with ABC if HSR is suspected, regardless of their HLA-B*5701 status.					
Injection Site Reactions	Injection Site Reaction	Not applicable	**RPV IM injection:** Reported in >80% of patients; reactions may include localized pain/discomfort (most common), nodules, induration, swelling, erythema, hematoma. **When given with CAB IM, injection site pain:** RPV > CAB.	Not applicable	**CAB IM injection:** Reported in >80% of patients; reactions may include localized pain/discomfort (most common), nodules, induration, swelling, erythema, hematoma. **When given with RPV IM, injection site pain:** RPV > CAB.	Not applicable	**LEN SQ injection:** Reported in 47–65% of people; reactions may include swelling, erythema, pain, nodules, inflammation, and induration. Nodules and induration may persist for months in some people. Injection site necrosis has been reported.

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
Metabolic Effects	Bone Density Effects	**TDF:** Associated with greater loss of BMD than other NRTIs, especially when given with a PK booster. Osteomalacia may be associated with proximal tubulopathy and urine phosphate wasting. **TAF:** Associated with smaller declines in BMD than those seen with TDF.	No known effect	No known effect	Not common or severe	No known effect	No known effect
	Diabetes Mellitus and Insulin Resistance	**ZDV**	No known effect	Rarely observed	No known effect	No or limited data	No or limited data
	Dyslipidemia	**ABC:** ↑ TG and ↑ LDL **TAF:** ↑ TG, ↑ LDL, and ↑ HDL (no change in TC:HDL ratio) **TDF:** Associated with lower lipid levels than ABC or TAF.	**EFV:** ↑ TG, ↑ LDL, ↑ HDL	**All RTV- or COBI-boosted PIs:** ↑ TG, ↑ LDL, ↑ HDL	**EVG/c:** ↑ TG, ↑ LDL, ↑ HDL	No known effect	No known effect
	Lactic Acidosis	Reported with older NRTIs (e.g., d4T, ZDV, ddI), but not with ABC, 3TC, FTC, TAF, or TDF.	No known effect	No known effect	No known effect	No known effect	No known effect

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
	Lipodystrophy	**Lipoatrophy:** Associated with history of exposure to d4T or ZDV (d4T > ZDV). Not reported with ABC, 3TC or FTC, or TAF or TDF.	**Lipohypertrophy:** Trunk fat increase is observed with EFV-containing regimens; however, a causal relationship has not been established.	**Lipohypertrophy:** Trunk fat increase is observed with PI-containing regimens; however, a causal relationship has not been established.	**Lipohypertrophy:** Trunk fat increase is observed with RAL-containing regimens; however, a causal relationship has not been established.	No known effect	No known effect
	Weight Gain	Weight gain has been associated with initiation of ART and subsequent viral suppression. The increase appears to be greater with INSTIs, especially BIC and DTG, than with other drug classes. Greater weight increase has also been reported with TAF than with TDF and with DOR than with EFV.				No known effect	No known effect
Musculoskeletal Effects	Myopathy/ Rhabdomyolysis	ddI, D4T Rarely observed with ABC, TAF, or TDF.	No known effect	No known effect	Rarely observed	No known effect	No known effect

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
Neuropsychiatric Effects	Nervous System/ Psychiatric Effects	**Peripheral neuropathy (can be irreversible):** Associated with history of exposure to ddI, ddC, or d4T.	**Neuropsychiatric events:** EFV > DOR, RPV > ETR **EFV:** Somnolence, insomnia, abnormal dreams, dizziness, impaired concentration, depression, psychosis, suicidal ideation, ataxia, encephalopathy. Some symptoms may subside or diminish after 2–4 weeks. Bedtime dosing and taking without food may reduce symptoms. **RPV:** Depression, suicidality, sleep disturbances **DOR:** Sleep disorders and disturbances, dizziness, altered sensorium; depression, suicidality, and self-harm	No known effect	Insomnia, depression, and suicidality have been reported with INSTI use, primarily in people with pre-existing psychiatric conditions.	Not common or severe	Not common or severe

Table 20. Common and/or Severe Adverse Effects Associated With Antiretroviral Medications

Adverse Effect Type	Adverse Effect	NRTIs	NNRTIs	PIs	INSTIs	EIs	CI
Renal Effects	Renal Effects/ Nephrolithiasis/ Urolithiasis	**TDF:** ↑ SCr, proteinuria, hypophosphatemia, urinary phosphate wasting, glycosuria, hypokalemia, and non-anion gap metabolic acidosis. Concurrent use of TDF with COBI- or RTV-containing regimens appears to increase risk. **TAF:** Less renal effect than TDF.	**RPV:** Inhibits Cr secretion without reducing renal glomerular function	**ATV:** Associated with increased risk of chronic kidney disease in a large cohort study. **ATV:** Stone or crystal formation; adequate hydration may reduce risk **COBI (as a pharmacokinetic booster for DRV or ATV):** Inhibits Cr secretion without reducing renal glomerular function	**DTG, COBI (as a pharmacokinetic booster for EVG), and BIC:** Inhibits Cr secretion without reducing renal glomerular function	No or limited data	No or limited data

Key: 3TC = lamivudine; ABC = abacavir; ART= antiretroviral therapy; ARV = antiretroviral; ATV = atazanavir; BIC = bictegravir; BMD = bone mineral density; CAB = cabotegravir; CI = capsid inhibitor; COBI = cobicistat; Cr = creatinine; CVD = cardiovascular disease; d4T = stavudine; ddC = zalcitabine; ddI = didanosine; DOR = doravirine; DRV = darunavir; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EFV = efavirenz; EI = entry inhibitor; ETR = etravirine; EVG = elvitegravir; EVG/c = elvitegravir/cobicistat; FTC = emtricitabine; FTR = fostemsavir; GI = gastrointestinal; HBV = hepatitis B virus; HCV = hepatitis C virus; HDL = high-density lipoprotein; HSR = hypersensitivity reaction; IBA = ibalizumab; IM = intramuscular; INSTI = integrase strand transfer inhibitor; LDL = low-density lipoprotein; LEN = lenacapavir; MI = myocardial infarction; MVC = maraviroc; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; QTc = QT corrected for heart rate; RAL = raltegravir; RPV = rilpivirine; RTV = ritonavir; SCr = serum creatinine; SQ = subcutaneous; TAF = tenofovir alafenamide; TC = total cholesterol; TDF = tenofovir disoproxil fumarate; TG = triglycerides; ZDV = zidovudine

Table 21. Insurance and Health Program Prescription Drug Pricing and Access

Updated: October 27, 2026
Reviewed: October 27, 2026

Insurance/Health Program	Prescription Drug Pricing and Access
Medicaid	Drug manufacturers must participate in the MDRP for their drugs to be covered by Medicaid and Medicare Part B. Manufacturers are required to pay Medicaid programs a rebate of at least 23.1% of the AMP for most brand-name drugs (13% for generics) sold to retail pharmacies or outpatient care providers (notably infused, injected, implanted, inhaled, or instilled drugs). Manufacturers pay additional rebates if this confidential AMP increases faster than the CPI-U rate of inflation. Additionally, many states negotiate with manufacturers for supplemental rebates. States are permitted to require "nominal" cost sharing for medical and pharmacy benefits for some beneficiaries, although many elect not to do so. States can obtain a waiver to allow them to apply higher cost sharing.
Medicare	ARVs are one of six "protected drug classes" under Medicare Part D. Part D plans must provide access to all, or substantially all, FDA-approved ARVs. Part D plan sponsors, or PBMs on their behalf, negotiate rebates on outpatient drugs with manufacturers; the extent of rebating is unclear. Most physician-administered drugs and biologics are covered under Medicare Part B at a set cost: ASP plus 6%. This pricing mechanism controls spending by narrowing the spread between what is actually paid for the drug and what is actually billed to Medicare. Premiums and cost-sharing payments may be significant for both services and prescription drugs, though caps on out-of-pocket spending for drugs covered by Medicare Part D went into effect in 2025; Part A (hospital care) and Part B place no cap on out-of-pocket spending. Some subsidies and supplemental coverage are offered for low-income beneficiaries. Manufacturer copay assistance programs cannot be applied to Part B or Part D cost sharing; cost-sharing support is available from ADAPs, foundations, and other sources and is based on financial eligibility criteria.
Commercial Insurance	Private insurance plans, or PBMs on their behalf, negotiate rebates on inpatient and outpatient drugs with manufacturers; the extent of rebating is unclear. Formulary restrictions and utilization management (prior authorization, step therapy, higher cost sharing) involving drugs and biologics covered under plans' pharmacy benefit or medical benefit (e.g., infused or injected ARVs) are possible cost-containment measures. Cost sharing can be highly variable. Manufacturer copay assistance programs can be applied in most cases but may not count toward annual ACA cost-sharing limits; cost-sharing support is also available from ADAPs, foundations, and other sources and is based on financial eligibility criteria.

Table 21. Insurance and Health Program Prescription Drug Pricing and Access

Insurance/Health Program	Prescription Drug Pricing and Access
ADAPs	Significant discounting on most ARVs negotiated by the ADAP Crisis Task Force is allowed under the 340B Drug Pricing Program. There is usually no cost sharing for ADAP clients who are uninsured. ADAP can assist with commercial or public insurance out-of-pocket costs.
Veterans Affairs	The FCP is the maximum price manufacturers may charge the four largest federal purchasers of pharmaceuticals (the "Big Four"): the U.S. Department of Veterans Affairs, U.S. Department of Defense, U.S. Public Health Service (including the Indian Health Service), and U.S. Coast Guard. The FCP of a drug includes a 24% discount on a drug's average price paid by nonfederal purchasers. Additional discounts may be applied if nonfederal purchase prices increase faster than the CPI-U inflation rate. Big Four prices may be 40% to 50% below list prices. Veterans Affairs may negotiate further price reductions. Prescription drug cost sharing is generally nominal; medications are not withheld from those who cannot afford cost-sharing expenses.
Community Health Centers	Many community health centers are enrolled in the 340B Drug Pricing Program, which allows discounted drug purchasing using the MDRP formula. Discounts start at 23.1% off AMP, with additional discounts if the AMP increases faster than the CPI-U rate of inflation. Cost sharing in community health centers is first driven by payer source. For clients who are uninsured, cost sharing, if required, is typically based on a sliding fee scale.
Jails and Prisons	Under the U.S. Constitution, correctional facilities have a legal obligation to provide necessary medical care, including prescription drugs, to incarcerated individuals.[a] Jails and prisons generally do not have access to discounted drugs available to government programs, such as Medicaid or "Big Four" purchasers (see Veterans Affairs above), but may benefit from centralized municipal or state purchasing mechanisms. Jails and prisons also may be able to purchase discounted ARV drugs and other medications under the 340B Drug Pricing Program, either as a recipient of certain federal funds associated with STI, HIV, and viral hepatitis prevention, or in partnership with other 340B-covered entities contracted to provide health care services to jailed or incarcerated individuals (e.g., disproportionate share hospital programs, community health centers). Since 2023, states are expected to suspend (not terminate) Medicaid coverage during incarceration and must collaborate with correctional facilities to assist incarcerated individuals who are not currently enrolled in Medicaid with submitting applications during incarceration using presumptive eligibility. Minimum benefits expected by CMS in state waiver proposals include case management services for pre- and post-release (including linkage to outpatient HIV care), medication-assisted therapy for substance use disorders, and at least a 30-day supply of medications at release.

Table 21. Insurance and Health Program Prescription Drug Pricing and Access

Insurance/Health Program	Prescription Drug Pricing and Access
	RWHAP programs and ADAPs also may provide time-limited HIV care and prescription drug access support for people with HIV in local prisons and jails.
Manufacturer and Charitable Prescription Drug Assistance Programs	Manufacturer PAPs are run by, or in association with, pharmaceutical companies to provide free or low-cost medications to people who meet certain eligibility requirements, including FPL-based income limits. A CAP is operated by manufacturers to provide assistance with cost-sharing requirements (including deductibles, copayments, and coinsurance) associated with prescription drug fills/refills for individuals with private health insurance. Pharmaceutical company CAPs cannot be used by individuals covered by Medicaid, Medicare, or other state and federal programs. Charitable third-party assistance programs, such as Patient Advocate Foundation Co-pay Relief, provide cost-sharing assistance to people who meet financial eligibility requirements. NASTAD maintains a number of PAP and CAP resources for use in clinical practice.

[a] *Estelle v. Gamble*[85]

Key: ACA = Affordable Care Act; ADAP = AIDS Drug Assistance Program; AMP = average manufacturer price; ARV = antiretroviral; ASP = average sales price; CAP = cost-sharing assistance program; CMS = Centers for Medicare & Medicaid Services; CPI-U = consumer price index-urban; FCP = federal ceiling price; FPL = federal poverty level; MDRP= Medicaid Drug Rebate Program; NASTAD = National Alliance of State & Territorial AIDS Directors; PAP = patient assistance program; PBM = pharmacy benefits manager; RWHAP = Ryan White HIV/AIDS Program; STI = sexually transmitted infection

Table 22a. Benchmark Prices for Recommended Initial Antiretroviral Therapy Regimens

Updated: October 27, 2026
Reviewed: October 27, 2026

Cash-pay estimate applicability: These estimates approximate out-of-pocket cost for individuals paying cash for antiretroviral therapy (ART) in narrowly defined circumstances—those who are uninsured, underinsured, or otherwise ineligible for the Ryan White HIV/AIDS Program, AIDS Drug Assistance Program, or manufacturer patient assistance programs. They do **not** reflect cost-sharing obligations (copayments, coinsurance, deductibles) where primary health coverage applies to these products. Generic-component estimates reflect direct-to-consumer pharmacy pricing (e.g., Cost Plus Drugs); Wholesale Acquisition Cost (WAC) is used as the acquisition-cost surrogate for branded products without National Average Drug Acquisition Cost (NADAC) data. For hybrid regimens, the WAC and AWP columns reflect the branded component(s) only. The generic component(s) are priced via NADAC in the NADAC column. The Estimated Cash-Pay Cost is the sum of branded WAC + generic NADAC.

Note: All prices are approximate monthly costs based on standard dosing quantities. Prices may vary by pharmacy, geographic region, and patient assistance program eligibility.

Regimen	Evidence Rating[a]	Specific Option	Option Type[b]	WAC	AWP	NADAC	Est. Cash-Pay Cost[c]
Table 6a—Recommended Initial Regimens for Most People With HIV							
BIC/TAF/FTC	**AI**	Biktarvy (bictegravir 50 mg/ tenofovir alafenamide 25 mg/ emtricitabine 200 mg)	Brand-Only	$4,216	$5,059	See WAC	$4,216
DTG + TAF/FTC	**AI**	Tivicay (dolutegravir 50 mg) + Descovy (tenofovir alafenamide 25 mg/emtricitabine 200 mg)	Brand-Only	$4,597	$5,517	See WAC	$4,597
DTG + TDF/FTC	**AI**	Tivicay (dolutegravir 50 mg) + Truvada (tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Brand-Only	$2,395 (DTG) + $1,842 (TDF/FTC)	$2,874 (DTG) + $2,211 (TDF/FTC)	See WAC	$4,237
DTG + TDF/FTC	**AI**	Tivicay (dolutegravir 50 mg) + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Hybrid	$2,395 (DTG)	$2,874 (DTG)	$14 (TDF/FTC)	$2,409

Table 22a. Benchmark Prices for Recommended Initial Antiretroviral Therapy Regimens

Regimen	Evidence Rating[a]	Specific Option	Option Type[b]	WAC	AWP	NADAC	Est. Cash-Pay Cost[c]
DTG/3TC	**AI**	Dovato (dolutegravir 50 mg/ lamivudine 300 mg)	Brand-Only	$3,250	$3,901	See WAC	$3,250
DTG + 3TC	**AI**	Tivicay (dolutegravir 50 mg) + Generic lamivudine 300 mg	Hybrid	$2,395 (DTG)	$2,874 (DTG)	$39 (3TC)	$2,434
Table 6a—For People With History of CAB-LA Use as PrEP (INSTI Genotype Testing Recommended)							
DRV/c/TAF/FTC	**AIII**	Symtuza (darunavir 800 mg/ cobicistat 150 mg/tenofovir alafenamide 10 mg/emtricitabine 200 mg)	Brand-Only	$4,717	$5,660	See WAC	$4,717
DRV/c + TAF/FTC	**AIII**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Descovy (tenofovir alafenamide 25 mg/ emtricitabine 200 mg)	Brand-Only	$4,669	$5,603	See WAC	$4,669
DRV/c + TDF/FTC	**AIII**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Truvada (tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Brand-Only	$2,467 (DRV/c) + $1,842 (TDF/FTC)	$2,960 (DRV/c) + $1,842 (TDF/FTC)	See WAC	$4,309
DRV/c + TDF/FTC	**AIII**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg	Hybrid	$2,467 (DRV/c)	$2,960 (DRV/c)	$14 (TDF/FTC)	$2,481
DRV + r + TDF/FTC	**AIII**	Prezista (darunavir 800 mg) + Norvir (ritonavir 100 mg) + Truvada (tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Brand-Only	$2,158 (DRV) + $257 (r) + $1,842 (TDF/FTC)	$2,590 (DRV) + $309 (r) + $2,643 (TDF/FTC)	See WAC	$4,257
DRV + r + TDF/FTC	**AIII**	Generic darunavir 800 mg + Generic ritonavir 100 mg + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg	Generic	N/A	N/A	$64 (DRV) + $20 (r) + $14 (TDF/FTC)	$98

Table 22a. Benchmark Prices for Recommended Initial Antiretroviral Therapy Regimens

Regimen	Evidence Rating[a]	Specific Option	Option Type[b]	WAC	AWP	NADAC	Est. Cash-Pay Cost[c]
Table 6b—Initial Regimens for Certain Clinical Scenarios							
INSTI Plus Two NRTIs							
DTG/ABC/3TC	**AII**	Triumeq (dolutegravir 50 mg/ abacavir 600 mg/lamivudine 300 mg)	Brand-Only	$4,014	$4,817	See WAC	$4,014
DTG + ABC/3TC	**AII**	Tivicay (dolutegravir 50 mg) + Generic abacavir 600 mg/ lamivudine 300 mg	Hybrid	$2,395 (DTG)	$2,874 (DTG)	$42 (ABC/3TC)	$2,437
Boosted PI Plus Two NRTIs							
DRV/c/TAF/FTC	**BI**	Symtuza (darunavir 800 mg/ cobicistat 150 mg/tenofovir alafenamide 10 mg/emtricitabine 200 mg)	Brand-Only	$4,717	$5,660	See WAC	$4,717
DRV/c + TAF/FTC	**BI**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Descovy (tenofovir alafenamide 25 mg/ emtricitabine 200 mg)	Brand-Only	$4,669	$5,603	See WAC	$4,669
DRV/c + TDF/FTC	**BI**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Truvada (tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Brand-Only	$2,467 (DRV/c) + $1,842 (TDF/FTC)	$2,960 (DRV/c) + $1,842 (TDF/FTC)	See WAC	$4,309
DRV/c + TDF/FTC	**BI**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg	Hybrid	$2,467 (DRV/c)	$2,960 (DRV/c)	$14 (TDF/FTC)	$2,481
DRV + r + TDF/FTC	**BI**	Prezista (darunavir 800 mg) + Norvir (ritonavir 100 mg) + Truvada (tenofovir disoproxil fumarate 300 mg / emtricitabine 200 mg)	Brand-Only	$2,158 (DRV) + $257 (r) + $1,842 (TDF/FTC)	$2,590 (DRV) + $309 (r) + $2,643 (TDF/FTC)	See WAC	$4,257

Table 22a. Benchmark Prices for Recommended Initial Antiretroviral Therapy Regimens

Regimen	Evidence Rating[a]	Specific Option	Option Type[b]	WAC	AWP	NADAC	Est. Cash-Pay Cost[c]
DRV + r + TDF/FTC	**BI**	Generic darunavir 800 mg + Generic ritonavir 100 mg + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg	Generic	N/A	N/A	$64 (DRV) + $20 (r) + $14 (TDF/FTC)	$98
DRV/c + ABC/3TC	**BII**	Prezcobix (darunavir 800 mg/ cobicistat 150 mg) + Generic abacavir 600 mg/lamivudine 300 mg	Hybrid	$2,467 (DRV/c)	$2,960 (DRV/c)	$42 (ABC/3TC)	$2,509
DRV + r + ABC/3TC	**BII**	Generic darunavir 800 mg + Generic ritonavir 100 mg + Generic abacavir 600 mg/lamivudine 300 mg	Generic	N/A	N/A	$64 (DRV) + $20 (r) + $42 (ABC/3TC)	$126
NNRTI Plus Two NRTIs							
DOR/TDF/3TC	**BI**	Delstrigo (doravirine 100 mg/ tenofovir disoproxil fumarate 300 mg/lamivudine 300 mg)	Brand-Only	$2,870	$3,444	See WAC	$2,870
DOR + TAF/FTC	**BIII**	Pifeltro (doravirine 100 mg) + Descovy (tenofovir alafenamide 25 mg/emtricitabine 200 mg)	Brand-Only	$4,084	$4,901	See WAC	$4,084
DOR + TDF/FTC	**BIII**	Pifeltro (doravirine 100 mg) + Truvada (tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg)	Brand-Only	$1,882 (DOR) + $1,842 (TDF/FTC)	$2,258 (DOR) + $2,642 (TDF/FTC)	See WAC	$3,724
DOR + TDF/FTC	**BIII**	Pifeltro (doravirine 100 mg) + Generic tenofovir disoproxil fumarate 300 mg/emtricitabine 200 mg	Hybrid	$1,882 (DOR)	$2,258 (DOR)	$14 (TDF/FTC)	$1,896
RPV/TAF/FTC	**BII**	Odefsey (rilpivirine 25 mg/tenofovir alafenamide 25 mg/emtricitabine 200 mg)	Brand-Only	$4,025	$4,830	See WAC	$4,025

Notes: WAC and AWP data are as of May 2026.[86] NADAC data are from the CMS National Average Drug Acquisition Cost survey,[87] effective date May 27, 2026.

[a] Evidence ratings correspond to those recommended for initial therapy in the Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents With HIV (see Initial Combination Antiretroviral Regimens for People With HIV).

Table 22a. Benchmark Prices for Recommended Initial Antiretroviral Therapy Regimens

[b] Option types: Brand-Only = all branded components; Hybrid = mix of branded and generic components; Generic = all components available as generics.

[c] Estimated Cash-Pay Cost reflects the sum of NADAC (for generic components) and WAC (for branded components) as a practical floor estimate for uninsured patients using retail or DTC pharmacies.

Key: 3TC = lamivudine; ABC = abacavir; AWP = Average Wholesale Price; BIC = bictegravir; CAB-LA = long-acting cabotegravir; CMS = Centers for Medicare & Medicaid Services; DOR = doravirine; DRV/c = darunavir/cobicistat; DTG = dolutegravir; FTC = emtricitabine; INSTI = integrase strand transfer inhibitor; N/A = not applicable; NADAC = National Average Drug Acquisition Cost; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PrEP = pre-exposure prophylaxis; r = ritonavir; RPV = rilpivirine; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; WAC = Wholesale Acquisition Cost

Table 22b. Benchmark Prices for Switch and Optimization Antiretroviral Therapy Regimens in the Setting of Viral Suppression

Updated: October 27, 2026
Reviewed: October 27, 2026

For people who have no history of resistance or virologic failure, one can likely switch to a regimen recommended for initial antiretroviral therapy (ART) (see Table 22a). Additionally, several regimens not used as initial therapy have been studied extensively as switch therapy. The cost data for these regimens are listed below.

CASH-PAY ESTIMATE APPLICABILITY: These estimates approximate out-of-pocket cost for individuals paying cash for ART in narrowly defined circumstances—those who are uninsured, underinsured, or otherwise ineligible for the Ryan White HIV/AIDS Program, AIDS Drug Assistance Program, or manufacturer patient assistance programs. They **do not** reflect cost-sharing obligations (copayments, coinsurance, deductibles) where primary health coverage applies to these products. Generic-component estimates reflect direct-to-consumer pharmacy pricing (e.g., Cost Plus Drugs); Wholesale Acquisition Cost (WAC) is used as the acquisition-cost surrogate for branded products without National Average Drug Acquisition Cost (NADAC) data. For hybrid regimens, the WAC and AWP columns reflect the branded component(s) only. The generic component(s) are priced via NADAC in the NADAC column. The Estimated Cash-Pay Cost is the sum of branded WAC + generic NADAC.

Note: In Table 22b, WAC, AWP, NADAC, and the Estimated Cash-Pay Cost are **monthly values unless otherwise noted.**

Regimen	Specific Option	Option Type[a]	WAC	AWP	NADAC	Est. Cash-Pay Cost[b]
Two-Drug Oral Regimens						
Two-Drug Regimens—INSTI + Capsid Inhibitor						
BIC/LEN[c]	Bixlenvo (bictegravir 75 mg/lenacapavir 50 mg)	Brand-Only	$4,595	$5,514	See WAC	$4,595
Two-Drug Regimens—INSTI + NNRTI						
DTG/RPV	Juluca (dolutegravir 50 mg/rilpivirine 25 mg)	Brand-Only	$3,762	$4,515	See WAC	$3,762
Two-Drug Regimens—NNRTI + NRTI						
DOR/ISL	Idvynso (doravirine 100 mg/islatravir 0.25 mg)	Brand-Only	$4,455	$5,346	See WAC	$4,455

Table 22b. Benchmark Prices for Switch and Optimization Antiretroviral Therapy Regimens in the Setting of Viral Suppression

Regimen	Specific Option	Option Type[a]	WAC	AWP	NADAC	Est. Cash-Pay Cost[b]
Two-Drug Regimens—Boosted Protease Inhibitor + Lamivudine						
DRV/c + 3TC	Prezcobix (darunavir 800 mg/cobicistat 150 mg) + Epivir (lamivudine 300 mg)	Brand-Only	$2,467 (DRV/c) + $416 (3TC)	$2,960 (DRV/c) + $499 (3TC)	See WAC	$2,883
DRV/c + 3TC	Prezcobix (darunavir 800 mg/cobicistat 150 mg) + Generic lamivudine 300 mg	Hybrid	$2,467 (DRV/c)	$2,960 (DRV/c)	$39 (3TC)	$2,506
DRV + r + 3TC	Prezista (darunavir 800 mg) + Norvir (ritonavir 100 mg) + Epivir (lamivudine 300 mg)	Brand-Only	$2,158 (DRV) + $257 (r) + $416 (3TC)	$2,590 (DRV) + $309 (r) + $499 (3TC)	See WAC	$2,831
DRV + r + 3TC	Generic darunavir 800 mg + Generic ritonavir 100 mg + Generic lamivudine 300 mg	Generic	N/A	N/A	$64 (DRV) + $20 (r) + $39 (3TC)	$123
Two-Drug Regimen—Boosted Darunavir + Dolutegravir						
DRV + r + DTG	Tivicay (dolutegravir 50 mg) + Prezista (darunavir 800 mg) + Norvir (ritonavir 100 mg)	Brand-Only	$2,395 (DTG) + $2,158 (DRV) + $257 (r)	$2,874 (DTG) + $2,590 (DRV) + $309 (r)	See WAC	$4,810
DRV + r + DTG	Tivicay (dolutegravir 50 mg) + Generic darunavir 800 mg + Generic ritonavir 100 mg	Hybrid	$2,395 (DTG)	$2,874 (DTG)	$64 (DRV) + $20 (r)	$2,479
Long-Acting Intramuscular Cabotegravir/Rilpivirine						
CAB/RPV[d] (Every 4 Weeks)	Cabenuva (cabotegravir 400 mg/2 mL + rilpivirine 600 mg/2 mL); 1 IM injection set every 4 weeks	Brand-Only	$4,639 (every 4 weeks)	$5,706 (every 4 weeks)	See WAC	$4,639

Table 22b. Benchmark Prices for Switch and Optimization Antiretroviral Therapy Regimens in the Setting of Viral Suppression

Regimen	Specific Option	Option Type[a]	WAC	AWP	NADAC	Est. Cash-Pay Cost[b]
CAB/RPV[d] (Every 8 Weeks)	Cabenuva (cabotegravir 600 mg / 3 mL + rilpivirine 900 mg / 3 mL); 1 IM injection set every 8 weeks	Brand-Only	$6,959 (every 8 weeks)	$8,560 (every 8 weeks)	See WAC	$6,959

Notes: Cross-references: For pricing of individual ARV components, see Table 22c. For initial-therapy benchmark pricing, see Table 22a.

WAC and AWP data are as of May 2026 (BIC/LEN as of September 2026).[86] NADAC data are from the CMS National Average Drug Acquisition Cost survey,[87] effective date May 27, 2026.

[a] Option types: Brand-Only = all branded components; Hybrid = mix of branded and generic components; Generic = all components available as generics.

[b] Estimated Cash-Pay Cost reflects the sum of NADAC (for generic components) and WAC (for branded components) as a practical floor estimate for uninsured patients using retail or DTC pharmacies.

[c] Pricing does not include the four 300-mg tablets of standalone LEN required as part of the 2-day initiation regimen. WAC and AWP pricing for four LEN tablets, as of May 2026, are $3,250 and $3,900, respectively. Starter packs containing four LEN tablets and a 30-day supply of BIC/LEN are pending commercialization; no pricing data are available as of September 2026.

[d] Thirty-day supplies of oral CAB and RPV for optional lead-in dosing are provided by the manufacturer through non-commercial pharmacy dispensing without cost.

Key: 3TC = lamivudine; ARV = antiretroviral; AWP = Average Wholesale Price; BIC = bictegravir; CAB = cabotegravir; CMS = Centers for Medicare & Medicaid Services; DOR = doravirine; DRV = darunavir; DRV/c = darunavir/cobicistat; DTG = dolutegravir; IM = intramuscular; ISL = islatravir; INSTI = integrase strand transfer inhibitor; LEN = lenacapavir; N/A = not applicable; NADAC = National Average Drug Acquisition Cost; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; RPV = rilpivirine; r = ritonavir; WAC = Wholesale Acquisition Cost

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

Updated: October 27, 2026
Reviewed: October 27, 2026

Table 22c provides benchmark pricing for antiretroviral (ARV) products across drug classes—including individual agents and coformulated products—and is intended as a comprehensive pricing reference. Organized by drug class rather than by clinical indication, it complements Tables 22a and 22b by enabling clinicians to look up the cost of specific ARV products when evaluating individual component substitutions, comparing coformulated options, or assessing costs outside the regimen-level comparisons provided in those tables. Agents no longer recommended by the Panel due to serious adverse effects are not included in this table (see footnote).

Note: In Table 22c, WAC, AWP, and NADAC are **monthly values unless otherwise noted.**

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
NRTIs					
Abacavir *Generic Only*	300-mg tablet	60 tablets	$100–$150	$578–$603	$38
Emtricitabine *Generic or Emtriva*	200-mg capsule	30 capsules	Generic $390–$536/ Emtriva $537	Generic $482–$644/ Emtriva $644	$372[b]
Lamivudine *Generic or Epivir*	300-mg tablet	30 tablets	Generic $40–$415/ Epivir $416	Generic $429/ Epivir $499	$39
Tenofovir Disoproxil Fumarate *Generic or Viread*	300-mg tablet	30 tablets	Generic $27–$300/ Viread $1,254	Generic $167– $1,216/ Viread $1,504	$10
NRTI Combination Products					
Abacavir/Lamivudine *Generic Only*	600-mg/300-mg tablet	30 tablets	$100–$302	$1,393–$1,395	$42
Tenofovir Alafenamide/Emtricitabine *Descovy*	25-mg/200-mg tablet	30 tablets	$2,202	$2,643	See WAC

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
Tenofovir Disoproxil Fumarate/Emtricitabine *Generic or Truvada*	300-mg/200-mg tablet	30 tablets	Generic $25–$853/ Truvada $1,842	Generic $70–$2,100/ Truvada $2,211	$14
Tenofovir Disoproxil Fumarate/Lamivudine *Cimduo*	300-mg/300-mg tablet	30 tablets	$1,244	$1,493	See WAC
NNRTIs					
Doravirine *Pifeltro*	100-mg tablet	30 tablets	$1,882	$2,258	See WAC
Efavirenz *Generic*	600-mg tablet	30 tablets	$80–$894	$1,043–$1,118	$42
Etravirine *Generic or Intelence*	200-mg tablet	60 tablets	Generic $1,287/ Intelence $1,498	Generic $1,609/ Intelence $1,797	$677
Rilpivirine *Generic or Edurant*	25-mg tablet	30 tablets	Generic $1,254/ Edurant $1,483	Generic $1,505/ Edurant $1,780	See WAC
PIs					
Atazanavir *Generic or Reyataz*	200-mg capsule	60 capsules	Generic $178–$316/ Reyataz $1,463	Generic $1,502–$1,668/Reyataz $1,756	$63
Atazanavir *Generic or Reyataz*	300-mg capsule	30 capsules	Generic $178–$316/ Reyataz $1,449	Generic $1,502–$1,652/Reyataz $1,739	$81
Atazanavir/Cobicistat *Evotaz*	300-mg/150-mg tablet	30 tablets	$1,605	$1,927	See WAC
Darunavir *Generic or Prezista*	600-mg tablet	60 tablets	Generic $60–$1,145/ Prezista $2,158	Generic $1,373–$2,388/Prezista $2,590	$69

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
Darunavir *Generic or Prezista*	800-mg tablet	30 tablets	Generic $60–$1,153/ Prezista $2,158	Generic $1,384– $2,388/Prezista $2,590	$64
Darunavir/Cobicistat *Prezcobix*	800-mg/150-mg tablet	30 tablets	$2,467	$2,960	See WAC
Lopinavir/Ritonavir *Generic, or Kaletra*	200-mg/50-mg tablet	120 tablets	Generic $885/ Kaletra $1,024	Generic $1,106/ Kaletra $1,229	$525
Tipranavir *Aptivus*	250-mg capsule	120 capsules	$2,054	$2,466	See WAC
INSTIs					
Dolutegravir *Tivicay*	50-mg tablet	30 tablets (or 60 tablets)	30 tablets $2,395/ 60 tablets $4,790	30 tablets $2,874/ 60 tablets $5,748	See WAC
Raltegravir *Isentress*	400-mg tablet	60 tablets	$2,131	$2,557	See WAC
Raltegravir *Isentress HD*	600-mg tablet	60 tablets	$2,131	$2,557	See WAC
Capsid Inhibitor					
Lenacapavir *Sunlenca*	300-mg tablet, or 927-mg/1.5-mL injection kit	4–5 tablets oral (1-time loading dose) then 1 injection kit (every 6 months)	4 tablets $3,250/ 5 tablets $4,184 (1-time loading dose) Injection kit $19,500 (every 6 months)	4 tablets $3,900/ 5 tablets $5,021 (1-time loading dose) Injection kit $23,400 (every 6 months)	See WAC
CCR5 Antagonist					
Maraviroc *Generic or Selzentry*	150-mg tablet	60 tablets	Generic $700/ Selzentry $1,730	Generic $1,764/ Selzentry $2,076	$549

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
Maraviroc *Generic or Selzentry*	300-mg tablet	60 tablets	Generic $700/ Selzentry $1,730	Generic $1,764/ Selzentry $2,076	$480
CD4-Directed Post-Attachment Inhibitor					
Ibalizumab-uiyk *Trogarzo*	200-mg/mL vial	8 vials per month	$12,196	$14,635	See WAC
gp120-Directed Attachment Inhibitor					
Fostemsavir *Rukobia*	600-mg tablet	60 tablets	$9,651	$11,582	See WAC
Coformulated Complete Regimens—STRs					
Bictegravir/Tenofovir Alafenamide/Emtricitabine *Biktarvy*	50-mg/25-mg/ 200-mg tablet	30 tablets	$4,216	$5,059	See WAC
Bictegravir/Lenacapavir *Bixlenvo*[c]	75-mg/50-mg tablet	30 tablets	$4,595	$5,514	See WAC
Darunavir/Cobicistat/Tenofovir Alafenamide/Emtricitabine *Symtuza*	800-mg/150-mg/ 10-mg/200-mg tablet	30 tablets	$4,717	$5,660	See WAC
Dolutegravir/Abacavir/Lamivudine *Triumeq*	50-mg/600-mg/ 300-mg tablet	30 tablets	$4,014	$4,817	See WAC
Dolutegravir/Lamivudine *Dovato*	50-mg/300-mg tablet	30 tablets	$3,250	$3,901	See WAC
Dolutegravir/Rilpivirine *Juluca*	50-mg/25-mg tablet	30 tablets	$3,762	$4,515	See WAC
Doravirine/Islatravir *Idvynso*	100-mg/0.25-mg tablet	30 tablets	$4,455	$5,346	See WAC

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
Doravirine/Tenofovir Disoproxil Fumarate/Lamivudine *Delstrigo*	100-mg/300-mg/ 300-mg tablet	30 tablets	$2,870	$3,444	See WAC
Efavirenz/Tenofovir Disoproxil Fumarate/Emtricitabine *Generic Only*	600-mg/300-mg/ 200-mg tablet	30 tablets	$82–$252	$302–$3,414	$36
Efavirenz/Tenofovir Disoproxil Fumarate/Lamivudine *Symfi (Generic)*	600-mg/300-mg/ 150-mg tablet	30 tablets	$2,023	$2,427	See WAC
Elvitegravir/Cobicistat/Tenofovir Alafenamide/Emtricitabine *Genvoya*	150-mg/150-mg/ 10-mg/200-mg tablet	30 tablets	$4,423	$5,307	See WAC
Elvitegravir/Cobicistat/Tenofovir Disoproxil Fumarate/Emtricitabine *Stribild*	150-mg/150-mg/ 300-mg/200-mg tablet	30 tablets	$4,639	$5,567	See WAC
Rilpivirine/Tenofovir Alafenamide/Emtricitabine *Odefsey*	25-mg/25-mg/ 200-mg tablet	30 tablets	$4,025	$4,830	See WAC
Rilpivirine/Tenofovir Disoproxil Fumarate/Emtricitabine *Generic or Complera*	25-mg/300-mg/ 200-mg tablet	30 tablets	Generic $3,499/ Complera $4,025	Generic $4,374/ Complera $4,830	$3,450[b]
Copackaged Combination Products—Long-Acting Injectable Regimens					
Cabotegravir/Rilpivirine *Cabenuva*[d]	**Every 4 Weeks:** • 400-mg/2-mL + 600-mg/2-mL vials	2 vials	$4,639 (every 4 weeks)	$5,706 (every 4 weeks)	See WAC
Cabotegravir/Rilpivirine *Cabenuva*[d]	**Every 8 Weeks:** • 600-mg/2-mL + 900-mg/3-mL vials	2 vials (every 8 weeks)	$6,959 (every 8 weeks)	$8,560 (every 8 weeks)	See WAC

Table 22c. Benchmark Prices for Individual Antiretroviral Medications

ARV Drug Brand and Generic Names	Strength, Formulation	Quantity	WAC	AWP	NADAC[a]
PK Enhancers (Boosters)					
Ritonavir *Generic or Norvir*	100-mg tablet	30 tablets	Generic $80–$160/ Norvir $257	Generic $278/ Norvir $309	$20

Notes: NADAC monthly costs are calculated as: average NADAC per unit × standard monthly dispensing quantity. NADAC per unit values reflect the average across all manufacturers with reported data.

WAC and AWP data are as of May 2026 (BIC/LEN as of September 2026).[86] NADAC data are from the CMS National Average Drug Acquisition Cost survey,[87] effective date May 27, 2026.

Certain older ARV medications, such as nevirapine and oral zidovudine, can cause serious adverse effects and are no longer recommended by the Panel for use in adults or adolescents and are not suitable for optimizing ARV in the setting of viral suppression; therefore, they are not included in this table.

[a] NADAC Note: For generic medications, NADAC reflects average pharmacy acquisition cost and provides the most relevant benchmark for cash-pay pricing at retail and DTC pharmacies. “See WAC” indicates NADAC data are unavailable.

[b] NADAC value appears anomalous (unexpectedly high or inconsistent with WAC). This may reflect authorized generic pricing, limited dispensing volume, or data entry issues in the CMS survey. Clinicians and patients should verify current pricing directly with the dispensing pharmacy.

[c] Pricing does not include the four 300-mg tablets of standalone LEN required as part of the 2-day initiation regimen. WAC and AWP pricing for four LEN tablets, as of May 2026, are $3,250 and $3,900, respectively. Starter packs containing four LEN tablets and a 30-day supply of BIC/LEN are pending commercialization; no pricing data are available as of September 2026.

[d] Thirty-day supplies of oral CAB and RPV for optional lead-in dosing are provided by the manufacturer through non-commercial pharmacy dispensing without cost.

Key: ARV = antiretroviral; AWP = Average Wholesale Price; CCR5 = C-C chemokine receptor type 5; CD4 = CD4 T lymphocyte; CMS = Centers for Medicare & Medicaid Services; DTC = direct-to-consumer; gp120 = glycoprotein 120; INSTI = integrase strand transfer inhibitor; NADAC = National Average Drug Acquisition Cost; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside/nucleotide reverse transcriptase inhibitor; PI = protease inhibitor; PK = pharmacokinetic; STR = single-tablet regimen; WAC = Wholesale Acquisition Cost

Table 23. Mechanisms of Antiretroviral-Associated Drug Interactions

Updated: September 24, 2026
Reviewed: September 24, 2026

Pharmacokinetic interactions may occur during absorption, metabolism, or elimination of the antiretroviral (ARV) medication and/or the interacting drug. This table does not include a comprehensive list of all possible mechanisms of interactions for individual ARV drugs; however, the table lists the most common mechanisms of known interactions and focuses on absorption and cytochrome P450 (CYP)– and uridine diphosphate glucuronosyltransferase (UGT) 1A1–mediated interactions.

Note: Information regarding P-glycoprotein, CYP substrate, inhibitor, and inducer status and UGT1A1 is referenced from product labels. N/A indicates that there are no clinically relevant interactions by the mechanism. Identified mechanisms are specific to the ARV medications described in the row and may not be reflective of complete ARV regimens. Some older ARVs—unboosted atazanavir, fosamprenavir, nelfinavir, nevirapine, tipranavir, and oral zidovudine—are not commonly used in clinical practice and/or are no longer recommended by the Panel for the Use of Antiretroviral Agents in Adults and Adolescents With HIV for use in adults and adolescents; therefore, they are **not** included in this table. Please refer to the U.S. Food and Drug Administration product labels or the Liverpool HIV Drug Interaction Checker for information regarding drug interactions for these ARVs.

ARV Drugs by Drug Class	Mechanisms That May Affect Oral Absorption of ARV Drugs			Enzymes That Metabolize or Are Induced or Inhibited by ARV Drugs			
	Increasing Gastric pH	Cationic Chelation	P-gp	CYP Substrate	CYP Inhibitor	CYP Inducer	UGT1A1
INSTIs							
BIC	N/A	Concentrations of PO INSTIs are decreased by products that contain polyvalent cations (e.g., Ca, Mg, Al, Fe, Zn).	Substrate	3A4	N/A	N/A	Substrate
CAB (IM and PO)	N/A		Substrate	N/A	N/A	N/A	Substrate
DTG	N/A		Substrate	3A4 (minor)	N/A	N/A	Substrate
EVG/c	N/A		Inhibitor	3A4	3A4, 2D6	2C9	Substrate
RAL	N/A		N/A	N/A	N/A	N/A	Substrate

Table 23. Mechanisms of Antiretroviral-Associated Drug Interactions

ARV Drugs by Drug Class	Mechanisms That May Affect Oral Absorption of ARV Drugs			Enzymes That Metabolize or Are Induced or Inhibited by ARV Drugs			
	Increasing Gastric pH	Cationic Chelation	P-gp	CYP Substrate	CYP Inhibitor	CYP Inducer	UGT1A1
PIs							
ATV/c	Concentration decreased	N/A	Substrate, inhibitor	3A4	3A4, 2D6, 2C8	N/A	Inhibitor
ATV/r	Concentration decreased	N/A	Substrate, inhibitor	3A4, 2D6	3A4, 2D6, 2C8	1A2, 2B6, 2C8, 2C9, 2C19	**ATV:** Inhibitor **RTV:** Inducer
DRV/c	N/A	N/A	Substrate, inhibitor	3A4	3A4, 2D6	N/A	No data
DRV/r	N/A	N/A	Substrate, inhibitor	3A4, 2D6	3A4, 2D6	1A2, 2B6, 2C8, 2C9, 2C19	Inducer
LPV/r	N/A	N/A	Substrate	3A4, 2D6	3A4	1A2, 2B6, 2C8, 2C9, 2C19	Inducer
NNRTIs							
DOR	N/A	N/A	N/A	3A4, 3A5	N/A	N/A	N/A
EFV	N/A	N/A	N/A	2B6 (primary), 2A6, 3A4	3A4	3A4, 2B6, 2C19	N/A
ETR	N/A	N/A	N/A	3A4, 2C9, 2C19	2C9, 2C19	3A4	N/A
RPV (IM and PO)	**Only RPV PO:** Concentration decreased	N/A	N/A	3A4	N/A	N/A	N/A
NRTIs							
ABC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTC	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 23. Mechanisms of Antiretroviral-Associated Drug Interactions

ARV Drugs by Drug Class	Mechanisms That May Affect Oral Absorption of ARV Drugs			Enzymes That Metabolize or Are Induced or Inhibited by ARV Drugs			
	Increasing Gastric pH	Cationic Chelation	P-gp	CYP Substrate	CYP Inhibitor	CYP Inducer	UGT1A1
3TC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ISL[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TAF	N/A	N/A	Substrate	N/A	N/A	N/A	N/A
TDF	N/A	N/A	Substrate	N/A	N/A	N/A	N/A
Capsid Inhibitor							
LEN (PO and SQ)	N/A	N/A	Substrate, inhibitor	3A4	3A4	N/A	Substrate
CCR5 Antagonist							
MVC	N/A	N/A	Substrate	3A4	N/A	N/A	N/A
gp120-Directed Attachment Inhibitor							
FTR	N/A	N/A	Substrate	3A4	N/A	N/A	N/A
Post-Attachment Inhibitor							
IBA	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[a] See subsection regarding ISL interactions.

Key: 3TC = lamivudine; ABC = abacavir; Al = aluminum; ARV = antiretroviral; ATV = atazanavir; ATV/c = atazanavir/cobicistat; ATV/r = atazanavir/ritonavir; BIC = bictegravir; Ca = calcium; CAB = cabotegravir; CCR5 = C-C chemokine receptor type 5; CYP = cytochrome P450; DOR = doravirine; DRV/c = darunavir/cobicistat; DRV/r = darunavir/ritonavir; DTG = dolutegravir; EFV = efavirenz; ETR = etravirine; EVG/c = elvitegravir/cobicistat; Fe = iron; FTC = emtricitabine; FTR = fostemsavir; gp120 = glycoprotein 120; IBA = ibalizumab; IM = intramuscular; INSTI = integrase strand transfer inhibitor; ISL = islatravir; LEN = lenacapavir; LPV/r = lopinavir/ritonavir; Mg = magnesium; MVC = maraviroc; N/A = not applicable; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; P-gp = P-glycoprotein; PI = protease inhibitor; PO = oral; RAL = raltegravir; RPV = rilpivirine; RTV = ritonavir; SQ = subcutaneous; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; UGT = uridine diphosphate glucuronosyltransferase; Zn = zinc

Appendix A, Table 1. Coformulated and Copackaged Antiretroviral Regimens

Updated: October 27, 2026
Reviewed: October 27, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved coformulated and copackaged antiretroviral regimens for adults with HIV. Not all products are FDA approved for adolescents with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines. Please see the class-specific drug characteristics tables (Appendix A, Tables 3, 4, 5, and 6) for details about the individual drugs included in these products, including information on elimination and metabolic pathways, serum and intracellular half-lives, and adverse effects. The products in this table are listed by drug class and arranged **in alphabetical order** by generic name within each class.

Generic Name (Abbreviation) *Trade Name*	**ARV Drugs Included in the Regimen**	**Dosing Recommendation**[a]
INSTI Plus NRTI		
Two-Drug Regimen		
Dolutegravir/Lamivudine (DTG/3TC) *Dovato*	DTG 50 mg/3TC 300 mg	One tablet PO once daily
Three-Drug Regimens		
Bictegravir/Tenofovir Alafenamide/Emtricitabine (BIC/TAF/FTC) *Biktarvy*	BIC 50 mg/TAF 25 mg/FTC 200 mg	One tablet PO once daily
Dolutegravir/Abacavir/Lamivudine (DTG/ABC/3TC) *Triumeq*	DTG 50 mg/ABC 600 mg/3TC 300 mg	One tablet PO once daily
Elvitegravir/Cobicistat/Tenofovir Alafenamide/Emtricitabine (EVG/c/TAF/FTC) *Genvoya*	EVG 150 mg/COBI 150 mg/TAF 10 mg/FTC 200 mg	One tablet PO once daily with food

Appendix A, Table 1. Coformulated and Copackaged Antiretroviral Regimens

Generic Name (Abbreviation) *Trade Name*	**ARV Drugs Included in the Regimen**	**Dosing Recommendation**[a]
Elvitegravir/Cobicistat/Tenofovir Disoproxil Fumarate/Emtricitabine (EVG/c/TDF/FTC) *Stribild*	EVG 150 mg/COBI 150 mg/TDF 300 mg/ FTC 200 mg	One tablet PO once daily with food
INSTI Plus NNRTI		
Two-Drug Regimens		
Cabotegravir/Rilpivirine (CAB/RPV) *Cabenuva*	**Cabenuva 600-mg/900-mg Kit:** • CAB 600-mg/3-mL vial and RPV 900-mg/3-mL vial **Cabenuva 400-mg/600-mg Kit:** • CAB 400-mg/2-mL vial and RPV 600-mg/2-mL vial	**Optional Lead-In With Oral CAB and RPV** • CAB 30 mg PO and RPV 25 mg PO once daily with food for 4 weeks **Monthly IM CAB and RPV** • Loading dose: CAB 600 mg/3 mL IM for one dose and RPV 900 mg/3 mL IM for one dose • Continuation phase: CAB 400 mg/2 mL IM monthly and RPV 600 mg/2 mL IM monthly **Every 2-Month IM CAB and RPV** • Loading dose: CAB 600 mg/3 mL IM and RPV 900 mg/3 mL IM **once monthly** for two doses • Continuation phase: CAB 600 mg/3 mL IM and RPV 900 mg/3 mL IM every 2 months See FDA prescribing information for dosing guidance in the setting of missed doses.
Dolutegravir/Rilpivirine (DTG/RPV) *Juluca*	DTG 50 mg/RPV 25 mg	One tablet PO once daily with food

Appendix A, Table 1. Coformulated and Copackaged Antiretroviral Regimens

Generic Name (Abbreviation) *Trade Name*	ARV Drugs Included in the Regimen	Dosing Recommendation[a]
INSTI Plus Capsid Inhibitor		
Two-Drug Regimen		
Bictegravir/Lenacapavir (BIC/LEN) *Bixlenvo*	BIC 75 mg[b]/LEN 50 mg	**Initiation** • Day 1: BIC/LEN one tablet PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose • Day 2: BIC/LEN one tablet PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose **Maintenance** • Day 3 and after: BIC/LEN one tablet PO once daily See FDA prescribing information for dosing guidance in the setting of missed doses.
NNRTI Plus NRTI		
Two-Drug Regimen		
Doravirine/Islatravir (DOR/ISL) *Idvynso*	DOR 100 mg/ISL 0.25 mg	One tablet PO once daily
Three-Drug Regimens		
Doravirine/Tenofovir Disoproxil Fumarate/Lamivudine (DOR/TDF/3TC) *Delstrigo*	DOR 100 mg/TDF 300 mg/3TC 300 mg	One tablet PO once daily
Efavirenz/Tenofovir Disoproxil Fumarate/Emtricitabine (EFV/TDF/FTC) *Generic Only*	EFV 600 mg/TDF 300 mg/FTC 200 mg	One tablet PO once daily on an empty stomach, preferably at bedtime

Appendix A, Table 1. Coformulated and Copackaged Antiretroviral Regimens

Generic Name (Abbreviation) *Trade Name*	**ARV Drugs Included in the Regimen**	**Dosing Recommendation[a]**
Efavirenz/Tenofovir Disoproxil Fumarate/Lamivudine (EFV/TDF/3TC) *Generic Only*	EFV 600 mg/TDF 300 mg/3TC 300 mg	One tablet PO once daily on an empty stomach, preferably at bedtime
Rilpivirine/Tenofovir Alafenamide/Emtricitabine (RPV/TAF/FTC) *Odefsey*	RPV 25 mg/TAF 25 mg/FTC 200 mg	One tablet PO once daily with food
Rilpivirine/Tenofovir Disoproxil Fumarate/Emtricitabine (RPV/TDF/FTC) *Complera or Generic*	RPV 25 mg/TDF 300 mg/FTC 200 mg	One tablet PO once daily with food
PI (Boosted) Plus NRTI		
Three-Drug Regimen		
Darunavir/Cobicistat/Tenofovir Alafenamide/Emtricitabine (DRV/c/TAF/FTC) *Symtuza*	DRV 800 mg/COBI 150 mg/TAF 10 mg/ FTC 200 mg	One tablet PO once daily with food

[a] For dose adjustments in people with renal or hepatic insufficiency, see Appendix B. When no food restriction is listed, the product can be taken with or without food.

[b] The difference in BIC dosing between *Biktarvy* (BIC/TAF/FTC) and *Bixlenvo* (BIC/LEN) is related to a *Biktarvy*-specific formulation effect.

Key: 3TC = lamivudine; ABC = abacavir; ARV = antiretroviral; BIC = bictegravir; c or COBI = cobicistat; CAB = cabotegravir; DOR = doravirine; DRV = darunavir; DRV/c = darunavir/cobicistat; DTG = dolutegravir; EFV = efavirenz; EVG = elvitegravir; EVG/c = elvitegravir/cobicistat; FDA = U.S. Food and Drug Administration; FTC = emtricitabine; IM = intramuscularly; INSTI = integrase strand transfer inhibitor; ISL = islatravir; LEN = lenacapavir; NNRTI = non-nucleoside reverse transcriptase inhibitor; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PO = orally; RPV = rilpivirine; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Appendix A, Table 2. Nucleoside Reverse Transcriptase Inhibitor–Based, Fixed-Dose Combination Tablets for Use as Part of an Antiretroviral Regimen

Updated: September 25, 2025
Reviewed: September 24, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved dual nucleoside reverse transcriptase inhibitor fixed-dose combination (FDC) products for adults with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines. These FDC tablets are not complete regimens and must be administered in combination with other antiretroviral drugs. FDC products that contain zidovudine (ZDV) have been removed from this table; oral ZDV is no longer recommended by the Panel on Antiretroviral Guidelines for Adults and Adolescents due to the potential for serious adverse effects. Please see the class-specific drug characteristics tables (Appendix A, Tables 3, 4, 5, and 6) for details about the individual drugs contained in these FDC products, including information on elimination and metabolic pathways, serum and intracellular half-lives, and adverse effects. The FDC tablets in this table are listed by generic name.

Generic Name (Abbreviation) *Trade Name*	**ARV Drugs Included in the FDC Tablet**	**Dosing Recommendation**[a]
Abacavir/Lamivudine (ABC/3TC) *Generic Only*	ABC 600 mg/3TC 300 mg	One tablet PO once daily
Tenofovir Alafenamide/Emtricitabine (TAF/FTC) *Descovy*	TAF 25 mg/FTC 200 mg	One tablet PO once daily
Tenofovir Disoproxil Fumarate/Emtricitabine (TDF/FTC) *Truvada* **Note:** Generic product available.	TDF 300 mg/FTC 200 mg	One tablet PO once daily
Tenofovir Disoproxil Fumarate/Lamivudine (TDF/3TC) *Cimduo*	TDF 300 mg/3TC 300 mg	One tablet PO once daily

[a] For dose adjustments in people with renal or hepatic insufficiency, see Appendix B. All FDC tablets listed in this table can be taken without regard to food.

Key: 3TC = lamivudine; ABC = abacavir; ARV = antiretroviral; FDC = fixed-dose combination; FTC = emtricitabine; PO = orally; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Appendix A, Table 3. Characteristics of Nucleoside Reverse Transcriptase Inhibitors

Updated: September 24, 2026
Reviewed: September 24, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved nucleoside reverse transcriptase inhibitor products for adults with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines. The older nucleoside reverse transcriptase inhibitors didanosine (ddI) and stavudine (d4T) have been discontinued in the United States. Oral zidovudine (ZDV) is no longer recommended by the Panel on Antiretroviral Guidelines for Adults and Adolescents due to the potential for serious adverse effects. Therefore, these antiretrovirals have been removed from this table. Please refer to the FDA product label for ZDV for information regarding this drug.

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathway**	**Serum/ Intracellular Half-Lives**	**Adverse Events**[b]
Abacavir (ABC) *Ziagen* **Note:** Generic products are available.	**Ziagen** • 20-mg/mL oral solution **Generic** • 300-mg tablet • Also available as FDC with 3TC **FDC Tablets That Contain ABC**[c] • ABC/3TC **STRs That Contain ABC**[d] • Triumeq (DTG/ABC/3TC)	*Tablet* • ABC 600 mg PO once daily, *or* • ABC 300 mg PO twice daily See Appendix A, Tables 1 and 2 for dosing information for FDC tablets that contain ABC.	Metabolized by alcohol dehydrogenase and glucuronyl transferase 82% of ABC dose is excreted in the urine as metabolites of ABC. Dose adjustment is recommended in people with hepatic insufficiency (see Appendix B).	1.5 hours/ 12–26 hours	ABC is **contraindicated** in people who test positive for HLA-B*5701 due to an increased risk of HSRs. HLA screening should be done before initiating ABC. For people with a history of HSRs, rechallenge is **contraindicated.** Symptoms of HSRs may include fever, rash, nausea, vomiting, diarrhea, abdominal pain, malaise, fatigue, or respiratory symptoms (e.g., sore throat, cough, or shortness of breath). Evidence increasingly supports a relationship between ABC and major CV events.

Appendix A, Table 3. Characteristics of Nucleoside Reverse Transcriptase Inhibitors

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathway**	**Serum/ Intracellular Half-Lives**	**Adverse Events**[b]
Emtricitabine (FTC) *Emtriva* **Note:** Generic products are available.	**Emtriva** • 200-mg hard gelatin capsule • 10-mg/mL oral solution **Generic** • 200-mg capsule • Also available as FDC with TDF **FDC Tablets That Contain FTC**[c] • Descovy (TAF/FTC) • Truvada (TDF/FTC) **STRs That Contain FTC**[d] • Biktarvy (BIC/TAF/FTC) • Complera (or generic) (RPV/TDF/FTC) • EFV/TDF/FTC (generic) • Genvoya (EVG/c/TAF/FTC) • Odefsey (RPV/TAF/FTC) • Stribild (EVG/c/TDF/FTC) • Symtuza (DRV/c/TAF/FTC)	*Capsule* • FTC 200 mg PO once daily *Oral Solution* • FTC 240 mg (24 mL) PO once daily See Appendix A, Tables 1 and 2 for dosing information for FDC tablets that contain FTC.	86% of FTC dose is excreted renally. See Appendix B for dosing recommendations in people with renal insufficiency.	10 hours/ >20 hours	Minimal toxicity Hyperpigmentation/skin discoloration Severe acute exacerbation of hepatitis may occur in people with HBV/HIV coinfection who discontinue FTC.
Islatravir (ISL)	ISL is available only as a component of the STR Idvynso (DOR/ISL).[d]	• One tablet PO once daily See Appendix A, Table 1 for dosing information.	ADA-mediated metabolism (approximately 53%)	21 hours/ 186 hours	Diarrhea
Lamivudine (3TC) *Epivir* **Note:** Generic products are available.	**Epivir** • 150-mg and 300-mg tablets • 10-mg/mL oral solution	*Tablet* • 3TC 300 mg PO once daily, *or* • 3TC 150 mg PO twice daily	70% of 3TC dose is excreted renally. See Appendix B for dose recommendations in people with renal insufficiency.	5–7 hours/ 18–22 hours	Minimal toxicity Severe acute exacerbation of hepatitis may occur in people with HBV/HIV coinfection who discontinue 3TC.

Appendix A, Table 3. Characteristics of Nucleoside Reverse Transcriptase Inhibitors

Generic Name (Abbreviation) *Trade Name*	Formulations	Dosing Recommendations[a]	Elimination/ Metabolic Pathway	Serum/ Intracellular Half-Lives	Adverse Events[b]
	Generic • 100-mg, 150-mg, and 300-mg tablets • 10-mg/mL oral solution • Also available as FDC with ABC **FDC Tablets That Contain 3TC[c]** • ABC/3TC (generic) • Cimduo (TDF/3TC) **STRs That Contain 3TC[d]** • Delstrigo (DOR/TDF/3TC) • Dovato (DTG/3TC) • EFV/TDF/3TC (generic) • Triumeq (DTG/ABC/3TC)	See Appendix A, Tables 1 and 2 for dosing information for FDC tablets that contain 3TC.			
Tenofovir Alafenamide (TAF) *Vemlidy* **Note:** Vemlidy is available as a 25-mg tablet for the treatment of HBV.	**FDC Tablets That Contain TAF[c]** • Descovy (TAF/FTC) **STRs That Contain TAF[d]** • Biktarvy (BIC/TAF/FTC) • Genvoya (EVG/c/TAF/FTC) • Odefsey (RPV/TAF/FTC) • Symtuza (DRV/c/TAF/FTC)	See Appendix A, Tables 1 and 2 for dosing information for FDC tablets that contain TAF.	Metabolized by cathepsin A. See Appendix B for dosing recommendations in people with renal insufficiency.	0.5 hour/ 150–180 hours	Renal insufficiency, Fanconi syndrome, and proximal renal tubulopathy are less likely to occur with TAF than with TDF. Osteomalacia and decreases in BMD are less likely to occur with TAF than with TDF. Severe acute exacerbation of hepatitis may occur in people with HBV/HIV coinfection who discontinue TAF. Diarrhea, nausea, headache Greater weight increase has been reported with TAF than with TDF.

Appendix A, Table 3. Characteristics of Nucleoside Reverse Transcriptase Inhibitors

Generic Name (Abbreviation) *Trade Name*	Formulations	Dosing Recommendations[a]	Elimination/ Metabolic Pathway	Serum/ Intracellular Half-Lives	Adverse Events[b]
Tenofovir Disoproxil Fumarate (TDF) *Viread* **Note:** Generic products are available.	**Viread** • 150-mg, 200-mg, 250-mg, and 300-mg tablets • 40-mg/g oral powder **Generic** • 300-mg tablet • Also available as FDC with FTC **FDC Tablets That Contain TDF[c]** • Cimduo (TDF/3TC) • Truvada (TDF/FTC) **STRs That Contain TDF[d]** • Complera (or generic) (RPV/TDF/FTC) • Delstrigo (DOR/TDF/3TC) • EFV/TDF/FTC (generic) • EFV/TDF/3TC (generic) • Stribild (EVG/c/TDF/FTC)	*Tablet* • TDF 300 mg PO once daily *Oral Powder* • 7.5 level scoops of oral powder PO once daily (dosing scoop dispensed with each bottle; one level scoop contains 1 g of oral powder). Mix oral powder with 2–4 ounces of a soft food that does not require chewing (e.g., applesauce, yogurt). **Do not mix oral powder with liquid.** See Appendix A, Tables 1 and 2 for dosing information for FDC tablets that contain TDF.	Renal excretion is the primary route of elimination. See Appendix B for dose recommendations in people with renal insufficiency.	17 hours/ >60 hours	Renal insufficiency, Fanconi syndrome, proximal renal tubulopathy Osteomalacia, decrease in BMD Asthenia, headache, diarrhea, nausea, vomiting, flatulence Severe acute exacerbation of hepatitis may occur in people with HBV/HIV coinfection who discontinue TDF.

[a] When no food restriction is listed, the antiretroviral drug can be taken with or without food.

[b] Also see Table 20.

[c] See Appendix A, Table 2 for information about these formulations.

[d] See Appendix A, Table 1 for information about these formulations.

Key: 3TC = lamivudine; ABC = abacavir; ADA = adenosine deaminase; BIC = bictegravir; BMD = bone mineral density; CV = cardiovascular; DOR = doravirine; DRV/c = darunavir/cobicistat; DTG = dolutegravir; EFV = efavirenz; EVG/c = elvitegravir/cobicistat; FDC = fixed-dose combination; FTC = emtricitabine; HB = hepatitis B virus; HLA = human leukocyte antigen; HSR = hypersensitivity reaction; ISL = islatravir; PO = orally; RPV = rilpivirine; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Appendix A, Table 4. Characteristics of Integrase Strand Transfer Inhibitors

Updated: October 27, 2026
Reviewed: October 27, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved integrase strand transfer inhibitor products for adults with HIV. Not all formulations are FDA approved for adolescents with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines.

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathways**	**Serum Half-Life**	**Adverse Events**[b]
Bictegravir (BIC)	BIC is available only as a component of the STR Biktarvy (BIC/TAF/FTC) and Bixlenvo (BIC/LEN).[c]	See Appendix A, Table 1 for dosing information for coformulated regimens that contain BIC.	CYP3A4 substrate UGT1A1-mediated glucuronidation	~17 hours	Diarrhea Nausea Headache Weight gain Depression
Cabotegravir (CAB)	**Copackaged IM Regimen** • Cabenuva (CAB plus RPV) **Also available in oral tablet formulation Vocabria (CAB PO)** • 30-mg tablet • Must be obtained from manufacturer for oral lead-in and oral bridging during administration of Cabenuva (CAB IM/RPV IM)	See Appendix A, Table 1 for dosing information for coformulated and copackaged regimens that contain CAB.	UGT1A1 and UGT1A9-mediated glucuronidation	PO: 41 hours IM: 6–12 weeks	**CAB Plus RPV** • Headache • Nausea • Abnormal dreams • Anxiety • Insomnia • Depressive disorders • Hepatotoxicity **IM Formulation Only** • Injection site reactions (e.g., pain, induration, swelling, nodules)

Appendix A, Table 4. Characteristics of Integrase Strand Transfer Inhibitors

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathways**	**Serum Half-Life**	**Adverse Events**[b]
Dolutegravir (DTG) *Tivicay*	**Tivicay** • 50-mg tablet **STRs That Contain DTG**[c] • Dovato (DTG/3TC) • Juluca (DTG/RPV) • Triumeq (DTG/ABC/3TC)	**In People Without Prior ARV Treatment or ARV-Experienced People Who Had Never Received INSTIs** • DTG 50 mg PO once daily **In People Without Prior ARV Treatment or ARV-Experienced People Who Had Never Received INSTIs When Coadministered With EFV, FPV/r, TPV/r, or Rifampin** • DTG 50 mg PO twice daily **In INSTI-Experienced People With Certain INSTI Mutations (See Product Label) or With Clinically Suspected INSTI Resistance** • DTG 50 mg PO twice daily See Appendix A, Table 1 for dosing information for STRs that contain DTG.	UGT1A1-mediated glucuronidation Minor substrate of CYP3A4	~14 hours	Insomnia Headache Depressive disorders and suicidal ideation (rare; usually occurs in people with preexisting psychiatric conditions) Weight gain Hepatotoxicity HSRs, including rash, constitutional symptoms, and organ dysfunction (including liver injury), have been reported.
Elvitegravir (EVG)	EVG is only available as a component of STR tablets that also contain COBI, FTC, and either TDF or TAF. **STRs That Contain EVG**[c] • Genvoya (EVG/c/TAF/FTC) • Stribild (EVG/c/TDF/FTC)	**Genvoya and Stribild** • One tablet PO once daily with food. • See Appendix A, Table 1 for dosing information **Genvoya** • See Appendix B for recommendations on dosing in persons with renal insufficiency. **Stribild** • **Not recommended** for people with baseline CrCl <70 mL/min (see Appendix B).	**EVG** • CYP3A and UGT1A1/3 substrate **COBI** • CYP3A inhibitor and substrate • CYP2D6 inhibitor	EVG/c: ~13 hours	Nausea Diarrhea Depression and suicidal ideation (rare; usually occurs in people with preexisting psychiatric conditions)

Appendix A, Table 4. Characteristics of Integrase Strand Transfer Inhibitors

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathways**	**Serum Half-Life**	**Adverse Events**[b]
Raltegravir (RAL) *Isentress* *Isentress HD*	**Isentress** • 400-mg tablet • 100-mg single-use packet for oral suspension **Isentress HD** • 600-mg tablet	**Isentress** • 400 mg PO twice daily *With Rifampin* • 800 mg PO twice daily **Isentress HD** *In People Without Prior ARV Treatment or ARV-Experienced People With Virologic Suppression on a Regimen Containing RAL 400 mg Twice Daily* • 1,200 mg (two 600-mg tablets) PO once daily *With Rifampin* • **Not recommended**	UGT1A1-mediated glucuronidation	~9 hours	Rash, including Stevens-Johnson syndrome, HSR, and toxic epidermal necrolysis Nausea Headache Diarrhea Pyrexia CPK elevation, muscle weakness, and rhabdomyolysis Weight gain Insomnia Depression and suicidal ideation (rare; usually occurs in people with preexisting psychiatric conditions)

[a] For dose adjustments in people with hepatic insufficiency, see Appendix B. When no food restriction is listed, the antiretroviral drug can be taken with or without food.

[b] Also see Table 20.

[c] See Appendix A, Table 1 for information about these formulations.

Key: 3TC = lamivudine; ABC = abacavir; ARV = antiretroviral; BIC = bictegravir; CAB = cabotegravir; COBI = cobicistat; CrCl = creatinine clearance; CYP = cytochrome P450; DTG = dolutegravir; EFV = efavirenz; EVG = elvitegravir; EVG/c = elvitegravir/cobicistat; FPV/r = fosamprenavir/ritonavir; FTC = emtricitabine; HD = high dose; HSR = hypersensitivity reaction; IM = intramuscular; INSTI = integrase strand transfer inhibitor; LEN = lenacapavir; PO = orally; RAL = raltegravir; RPV = rilpivirine; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; TPV/r = tipranavir/ritonavir; UGT1 = uridine diphosphate glucuronyl transferase 1 family

Appendix A, Table 5. Characteristics of Protease Inhibitors

Updated: September 25, 2025
Reviewed: September 24, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved protease inhibitor products for adults with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines. The older protease inhibitors indinavir (IDV) and saquinavir (SQV) have been discontinued in the United States; fosamprenavir (FPV), lopinavir/ritonavir (LPV/r), nelfinavir (NFV), and tipranavir (TPV) are no longer used commonly in clinical practice. These agents have been removed from this table. Please refer to the July 10, 2019, version of the guidelines (found in the Adult and Adolescent Antiretroviral Archived Guidelines section of the Archived Guidelines webpage on the Clinicalinfo website) or to the FDA product labels for information regarding these drugs.

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathway**	**Serum Half-Life**	**Adverse Events**[b]
Atazanavir (ATV) *Reyataz* **Note:** Generic products are available.	**Reyataz** • 200-mg and 300-mg capsules • 50-mg oral powder/packet **Generic** • 200-mg and 300-mg capsules **FDCs That Contain ATV** • Evotaz (ATV 300 mg/COBI 150 mg)	**Reyataz** *In People Without Prior ARV Treatment* • (ATV 300 mg plus RTV 100 mg) PO once daily with food; *or* • ATV 400 mg PO once daily with food. *With TDF or in ARV-Experienced People* • (ATV 300 mg plus RTV 100 mg) PO once daily with food. • Unboosted ATV **is not recommended.** *With EFV in People Without Prior ARV Treatment* • (ATV 400 mg plus RTV 100 mg) PO once daily with food. **Evotaz** • One tablet PO once daily with food.	**ATV** • CYP3A4 inhibitor and substrate • Weak CYP2C8 inhibitor • UGT1A1 inhibitor **COBI** • CYP3A inhibitor and substrate • CYP2D6 inhibitor Dose adjustment is recommended in people with hepatic insufficiency (see Appendix B).	7 hours	Indirect hyperbilirubinemia Cholelithiasis Nephrolithiasis Renal insufficiency Serum transaminase elevations Hyperlipidemia (especially with RTV boosting) Skin rash Hyperglycemia Lipodystrophy An increase in serum creatinine may occur when ATV is administered with COBI. PR interval prolongation: First-degree symptomatic AV block has been reported. Use with caution in people who have underlying conduction defects or who are on concomitant medications that can cause PR prolongation.

Appendix A, Table 5. Characteristics of Protease Inhibitors

Generic Name (Abbreviation) *Trade Name*	Formulations	Dosing Recommendations[a]	Elimination/ Metabolic Pathway	Serum Half-Life	Adverse Events[b]
		• The use of ATV/c **is not recommended** for people who are taking TDF and who have baseline CrCl <70 mL/min or if taking a nephrotoxic agent (see Appendix B). For dosing recommendations for people who also are receiving H2 antagonists and PPIs, see the Liverpool HIV Drug Interaction Checker.			
Darunavir (DRV) *Prezista* **Note:** Generic products are available.	**Prezista** • 600-mg and 800-mg tablets • 100-mg/mL oral suspension **Generic** • 600-mg and 800-mg tablets **FDCs That Contain DRV** • Prezcobix (DRV 800 mg/COBI 150 mg) **STRs That Contain DRV** • Symtuza (DRV/c/TAF/FTC)	**Prezista** *In People Without Prior ARV Treatment or ARV-Experienced Treatment With No DRV Resistance Mutations* • (DRV 800 mg plus RTV 100 mg) PO once daily with food *In ARV-Experienced People With One or More DRV Resistance Mutations* • (DRV 600 mg plus RTV 100 mg) PO twice daily with food DRV is not available as an FDC tablet with RTV. Unboosted DRV **is not recommended.** **Prezcobix** • One tablet PO once daily with food. • **Not recommended** for people with one or more DRV resistance-associated mutations. • Coadministering Prezcobix and TDF **is not recommended** for people with baseline CrCl <70 mL/min (see Appendix B). See Appendix A, Table 1 for dosing information for Symtuza.	**DRV** • CYP3A4 inhibitor and substrate • CYP2C9 inducer **COBI** • CYP3A inhibitor and substrate • CYP2D6 inhibitor	15 hours when combined with RTV 7 hours when combined with COBI	Hepatotoxicity Diarrhea, nausea Headache Hyperlipidemia Serum transaminase elevation Hyperglycemia Lipodystrophy An increase in serum creatinine may occur when DRV is administered with COBI. Skin rash: DRV has a sulfonamide moiety; however, incidence and severity of rash are similar in those with or without a sulfonamide allergy—Stevens-Johnson syndrome, toxic epidermal necrolysis, acute generalized exanthematous pustulosis, and erythema multiforme have been reported.

Appendix A, Table 5. Characteristics of Protease Inhibitors

Generic Name (Abbreviation) *Trade Name*	Formulations	Dosing Recommendations[a]	Elimination/ Metabolic Pathway	Serum Half-Life	Adverse Events[b]
Ritonavir (RTV) *Norvir* **Note:** Generic products are available. RTV is used at 100 mg once or twice daily as a PK enhancer to increase the concentrations of other PIs.	**Norvir** • 100-mg tablet • 100-mg single packet oral powder **Generic** • 100-mg tablet Also available as an FDC tablet of LPV/r in both brand (Kaletra) and generic versions	**As a PK Booster (or Enhancer) for Other PIs** • RTV 100–200 mg PO per day in one or two divided doses (refer to other PIs for specific dosing recommendations) with food	CYP3A4 > 2D6 substrate Potent CYP3A4 and 2D6 inhibitor Inducer of UGT1A1 and CYPs 1A2, 2C8, 2C9, and 2C19	3–5 hours	GI intolerance, nausea, vomiting, diarrhea Paresthesia (circumoral and extremities) Hyperlipidemia (especially hypertriglyceridemia) Hepatitis Asthenia Dysgeusia Hyperglycemia Fat maldistribution

[a] For dose adjustments in people with hepatic insufficiency, see Appendix B.

[b] Also see Table 20.

Key: ARV = antiretroviral; ATV = atazanavir; ATV/c = atazanavir/cobicistat; AV = atrioventricular; COBI = cobicistat; CrCl = creatinine clearance; CYP = cytochrome P450; DRV = darunavir; DRV/c = darunavir/cobicistat; FDC = fixed-dose combination; FTC = emtricitabine; GI = gastrointestinal; H2 = histamine H2 receptor; LPV/r = lopinavir/ritonavir; PI = protease inhibitor; PK = pharmacokinetic; PO = orally; RTV = ritonavir; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; UGT1 = uridine diphosphate glucuronyl transferase 1 family

Appendix A, Table 6. Characteristics of Non-nucleoside Reverse Transcriptase Inhibitors

Updated: September 24, 2026
Reviewed: September 24, 2026

This table includes dose recommendations for U.S. Food and Drug Administration (FDA)–approved non-nucleoside reverse transcriptase inhibitor (NNRTI) products for adults with HIV. For information regarding the use of these medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines. The older NNRTIs delavirdine (DLV) and nevirapine (NVP) are **not** listed in this table; DLV has been discontinued and NVP is not recommended by the Panel on Antiretroviral Guidelines for Adults and Adolescents due to the potential for serious adverse effects.

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathway**	**Serum Half-Life**	**Adverse Events**[b]
Doravirine (DOR) *Pifeltro*	**Pifeltro** • 100-mg tablet **STRs That Contain DOR**[c] • Delstrigo (DOR/TDF/3TC) • Idvynso (DOR/ISL)	• DOR 100 mg PO once daily See Appendix A, Table 1 for dosing information for STRs that contain DOR.	CYP3A4/5 substrate	15 hours	Rash, including Stevens-Johnson syndrome Nausea Dizziness Abnormal dreams
Efavirenz (EFV) **Note:** Generic only	**Efavirenz** (generic) • 600-mg tablet **STRs That Contain EFV**[c] • EFV/TDF/FTC (generic) • EFV/TDF/3TC (generic)	• EFV 600 mg PO once daily on an empty stomach, preferably at or before bedtime See Appendix A, Table 1 for dosing information for STRs that contain EFV.	Metabolized by CYP2B6 (primary), 3A4, and 2A6 CYP3A4 mixed inducer/inhibitor (more an inducer than an inhibitor) CYP2B6 and 2C19 inducer	40–55 hours	Rash, including Stevens-Johnson syndrome Neuropsychiatric symptoms[d] Serum transaminase elevations Hyperlipidemia QT interval prolongation Use of EFV may lead to false-positive results with some cannabinoid and benzodiazepine screening assays.
Etravirine (ETR) *Intelence* **Note:** Generic products are available.	**Intelence** • 100-mg and 200-mg tablets **Generic** • 100-mg and 200-mg tablets	• ETR 200 mg PO twice daily following a meal.	CYP3A4, 2C9, and 2C19 substrate CYP3A4 inducer CYP2C9 and 2C19 inhibitor	41 hours	Rash, including Stevens-Johnson syndrome HSRs, characterized by rash, constitutional findings, and sometimes organ dysfunction (including hepatic failure), have been reported. Nausea

Appendix A, Table 6. Characteristics of Non-nucleoside Reverse Transcriptase Inhibitors

Generic Name (Abbreviation) *Trade Name*	**Formulations**	**Dosing Recommendations**[a]	**Elimination/ Metabolic Pathway**	**Serum Half-Life**	**Adverse Events**[b]
Rilpivirine (RPV) *Edurant* **Note:** Generic product available.	**Edurant** • 25-mg tablet **Generic** • 25-mg tablet **STRs That Contain RPV**[c] • Complera (or generic) RPV/TDF/FTC • Juluca (DTG/RPV) • Odefsey (RPV/TAF/FTC) **Copackaged IM Regimen** • Cabenuva (CAB plus RPV)	• RPV 25 mg PO once daily with food See Appendix A, Table 1 for dosing information for coformulated and copackaged regimens that contain RPV.	CYP3A4 substrate	PO: 50 hours IM: 13–28 weeks	Rash, including Stevens-Johnson syndrome Depressive disorders, insomnia, headache Hepatotoxicity QT interval prolongation **IM Formulation Only** • Injection site reactions (pain, induration, swelling, nodules) • Rare postinjection reaction (dyspnea, agitation, abdominal cramps, flushing) occurring within a few minutes after RPV IM injection; possibly associated with inadvertent IV administration.

[a] For dose adjustments in people with renal or hepatic insufficiency, see Appendix B. When no food restriction is listed, the antiretroviral drug can be taken with or without food.

[b] Also see Table 20.

[c] See Appendix A, Table 1 for information about these formulations.

[d] Adverse events can include dizziness, somnolence, insomnia, abnormal dreams, depression, suicidality (e.g., suicide, suicide attempt or ideation), confusion, abnormal thinking, impaired concentration, amnesia, agitation, depersonalization, hallucinations, and euphoria. Approximately 50% of people who are receiving EFV may experience any of these symptoms. Symptoms usually subside spontaneously after 2–4 weeks, but discontinuation of EFV may be necessary in a small percentage of people. Late-onset neurotoxicities, including ataxia and encephalopathy, have been reported.

Key: 3TC = lamivudine; CAB = cabotegravir; CYP = cytochrome P450; DOR = doravirine; DTG = dolutegravir; EFV = efavirenz; ETR = etravirine; FTC = emtricitabine; HSR = hypersensitivity reaction; ISL = islatravir; IM = intramuscular; IV = intravenous; PO = orally; RPV = rilpivirine; STR = single-tablet regimen; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Appendix A, Table 7. Characteristics of the Capsid Inhibitor

Updated: October 27, 2026
Reviewed: October 27, 2026

This table includes dose recommendations for the U.S. Food and Drug Administration (FDA)–approved capsid inhibitor. Lenacapavir is not FDA approved for use in adolescents with HIV.

Generic Name (Abbreviation) *Trade Name*	**Formulation**	**Dosing Recommendations**	**Serum Half-Life**	**Elimination/ Metabolic Pathway**	**Adverse Events**[a]
Lenacapavir (LEN) *Sunlenca*	**Sunlenca** • 300-mg tablet • Single-dose 463.5-mg/1.5-mL vial for injection **STRs That Contain LEN** • Bixlenvo (BIC 75 mg/LEN 50 mg)	**Initiation Option 1** • Day 1: 927 mg SQ x one dose + 600 mg PO x one dose • Day 2: 600 mg PO x one dose **Initiation Option 2** • Day 1: 600 mg PO x one dose • Day 2: 600 mg PO x one dose • Day 8: 300 mg PO x one dose • Day 15: 927 mg SQ x one dose **Maintenance Dosing** • 927 mg by SQ injection every 6 months from the date of the last injection (+/-2 weeks) **Note:** Each SQ dose requires two injections. See FDA prescribing information for dosing guidance in the setting of missed doses. See Appendix A, Table 1 for dosing information for the coformulated regimen that contains LEN.	PO: 10–12 days SQ: 8–12 weeks	Substrate of P-gp, CYP3A (minor), UGT1A1 (minor) CYP3A4 inhibitor (moderate) and P-gp inhibitor	Nausea, diarrhea, headache **SQ Formulation Only** • Injection site reactions, including nodules, induration, and necrosis • Serious injection site reactions (e.g., necrosis and ulcer) may occur when LEN is improperly administered intradermally instead of subcutaneously.

[a] Also see Table 20.

Key: Key: BIC = bictegravir; CYP = cytochrome P450; FDA = U.S. Food and Drug Administration; LEN = lenacapavir; P-gp = P-glycoprotein; PO = orally; SQ = subcutaneous

Appendix A, Table 8. Characteristics of the gp120 Attachment Inhibitor

Updated: May 26, 2023
Reviewed: September 24, 2026

This table includes dose recommendations for the U.S. Food and Drug Administration (FDA)–approved gp120 attachment inhibitor. Fostemsavir is not FDA approved for use in adolescents with HIV.

Generic Name (Abbreviation) *Trade Name*	**Formulation**	**Dosing Recommendations**	**Serum Half-Life**	**Elimination/ Metabolic Pathway**	**Adverse Events**[a]
Fostemsavir (FTR) *Rukobia*	• 600-mg extended-release tablets	• FTR 600 mg PO twice daily	11 hours	Hydrolysis (esterases), CYP3A4	Nausea Transaminase elevation; transient bilirubin elevation Sleep disturbance, dizziness QTc prolongation was seen at four times the recommended dose. Use with caution in people with preexisting heart disease, QTc prolongation, or concomitant use of medications that may prolong QTc interval.

[a] Also see Table 20.

Key: CYP = cytochrome P450; FTR = fostemsavir; PO = orally; QTc = QT corrected for heart rate

Appendix A, Table 9. Characteristics of the CD4 Post-Attachment Inhibitor

Updated: October 27, 2026
Reviewed: October 27, 2026

This table includes dose recommendations for the U.S. Food and Drug Administration (FDA)–approved CD4 T lymphocyte post-attachment inhibitor. Ibalizumab is not FDA approved for use in adolescents with HIV.

Generic Name (Abbreviation) *Trade Name*	**Formulation**	**Dosing Recommendations**	**Serum Half-Life**	**Elimination/ Metabolic Pathway**	**Adverse Events**[a]
Ibalizumab (IBA) *Trogarzo*	• Single-dose 2-mL vial containing IBA 200 mg/1.33 mL (150 mg/mL)	• Administer a single loading dose of IBA 2,000-mg IV infusion over 30 minutes, followed by a maintenance dose of IBA 800-mg IV infusion over 15 minutes or • Undiluted IBA solution can be given as IV push: over 90 seconds for loading dose and over 30 seconds every 2 weeks for maintenance dose. • See prescribing information for additional instructions for preparing, storing, and administering IBA, and for monitoring people who are receiving IBA. • See FDA prescribing information for dosing guidance in the setting of missed doses.	~64 hours	Not well defined	Diarrhea Dizziness Nausea Rash HSRs, including anaphylaxis and infusion-related reactions, have been reported.

[a] Also see Table 20.

Key: FDA = U.S. Food and Drug Administration; HSR = hypersensitivity reaction; IBA = ibalizumab; IV = intravenous

Appendix A, Table 10. Characteristics of the CCR5 Antagonist

Updated: September 25, 2025
Reviewed: September 24, 2026

This table includes dose recommendations for the U.S. Food and Drug Administration (FDA)–approved CCR5 antagonist. For additional information regarding the use of this medication in adolescents with HIV, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines.

Generic Name (Abbreviation) *Trade Name*	**Formulation**	**Dosing Recommendations**[a]	**Serum Half-Life**	**Elimination/ Metabolic Pathway**	**Adverse Events**[b]
Maraviroc (MVC) *Selzentry* **Note:** Generic products are available.	**Selzentry** • 150-mg and 300-mg tablets • 20-mg/1-mL oral solution **Generic** • 150-mg and 300-mg tablets	• MVC 150 mg PO twice daily when given with drugs that are strong CYP3A inhibitors (with or without CYP3A inducers), including PIs (except TPV/r) • MVC 300 mg PO twice daily when given with NRTIs, RAL, and other drugs that are not strong CYP3A inhibitors or inducers • MVC 600 mg PO twice daily when given with drugs that are CYP3A inducers, including EFV, ETR, etc. (without a CYP3A inhibitor) Take MVC without regard to food.	14–18 hours	CYP3A4 substrate	Abdominal pain Cough Dizziness Musculoskeletal symptoms Pyrexia Rash Upper respiratory tract infections Hepatotoxicity, which may be preceded by severe rash or other signs of systemic allergic reactions Orthostatic hypotension, especially in people with severe renal insufficiency

[a] For dose adjustments in people with hepatic insufficiency, see Appendix B.

[b] Also see Table 20.

Key: CYP = cytochrome P450; EFV = efavirenz; ETR = etravirine; MVC = maraviroc; NRTI = nucleoside reverse transcriptase inhibitor; PI = protease inhibitor; PO = orally; RAL = raltegravir; TPV/r = tipranavir/ritonavir

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Updated: October 27, 2026
Reviewed: October 27, 2026

These tables include antiretroviral (ARV) products that are not approved by the U.S. Food and Drug Administration (FDA) for use in adolescents with HIV. For information regarding the use of ARV medications in adolescents with HIV, including weight limitations and additional dosage forms, please consult FDA product labeling or Appendix A in the Pediatric Antiretroviral Guidelines.

Renal dosing information for fixed-dose combination products, as well as coformulated and copackaged antiretroviral regimens, is included in the tables below. The older antiretroviral drugs fosamprenavir (FPV), lopinavir/ritonavir (LPV/r), nelfinavir (NFV), nevirapine (NVP), tipranavir (TPV), and oral zidovudine (ZDV) have been removed from this table because they are no longer commonly used and/or not recommended by the Panel on Antiretroviral Guidelines for Adults and Adolescents. Please refer to the FDA product labels for these drugs for recommendations on dosing in adults and adolescents with renal or hepatic insufficiency.

Please refer to the National Institute of Diabetes and Digestive and Kidney Diseases Determining Drug Dosing in Adults With Chronic Kidney Disease webpage for a discussion on using estimated creatinine clearance (CrCl) versus estimated glomerular filtration rate (eGFR) in determining renal function. eGFR based on the 2021 Chronic Kidney Disease Epidemiology Collaboration (or CKD-EPI) equation can be determined using this eGFR calculator. In FDA prescribing information, renal dosing recommendations for most ARVs are based on CrCl using the Cockcroft-Gault formula.

See the section at the end of this table for criteria for Child-Pugh Classifications.

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**	**Dosing in Adults With Hepatic Impairment**
Nucleoside Reverse Transcriptase Inhibitors			
Abacavir (ABC) *Ziagen*	ABC 300 mg PO twice daily *or* ABC 600 mg PO once daily	No dose adjustment	*Child-Pugh Class A:* ABC 200 mg PO twice daily (use oral solution) *Child-Pugh Class B or C:* **Contraindicated**

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

<table>
<tr><th>Generic Name
(Abbreviation)
Trade Name</th><th>Usual Dose[a]</th><th colspan="3">Dosing in Adults With Renal Insufficiency</th><th>Dosing in Adults With Hepatic Impairment</th></tr>
<tr><td>Abacavir/Lamivudine
(ABC/3TC)</td><td>One tablet PO once daily</td><td colspan="3">Not FDA recommended if CrCl <30 mL/min due to the 3TC component.

Note: There is insufficient evidence to recommend for or against the use of full-dose 3TC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose 3TC. See the 3TC entry for more information.</td><td>Child-Pugh Class A: People with mild hepatic impairment require a dose reduction of ABC (as noted above). Use the individual drugs instead of the FDC tablet in these people.

Child-Pugh Class B or C: Contraindicated due to the ABC component</td></tr>
<tr><td rowspan="5">Emtricitabine
(FTC)
Emtriva</td><td rowspan="5">FTC 200-mg capsule PO once daily

or

FTC 240-mg (24-mL) solution PO once daily

Note: There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min who are not on HD. To allow people to remain on TAF-containing FDC products, some Panel members use full-dose, daily FTC in people with CrCl 15–29 mL/min who are not on HD.</td><td colspan="3">Dose by Formulation</td><td rowspan="5">No dose recommendation</td></tr>
<tr><td>CrCl (mL/min)</td><td>Capsule</td><td>Solution</td></tr>
<tr><td>30–49[b]</td><td colspan="2">No dose adjustment.</td></tr>
<tr><td>15–29

(see Note)</td><td>200 mg every 72 hours</td><td>80 mg every 24 hours</td></tr>
<tr><td><15 (not on HD)

(see Note)</td><td>200 mg every 96 hours</td><td>60 mg every 24 hours</td></tr>
<tr><td>On HD[b]</td><td colspan="2">No dose adjustment. On HD days, administer after dialysis.</td></tr>
</table>

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

<table>
<tr><th>Generic Name
(Abbreviation)
Trade Name</th><th>Usual Dose[a]</th><th colspan="3">Dosing in Adults With Renal Insufficiency</th><th>Dosing in Adults With Hepatic Impairment</th></tr>
<tr><td rowspan="5">Lamivudine
(3TC)
Epivir</td><td rowspan="5">3TC 300 mg PO once daily
or
3TC 150 mg PO twice daily
Note: PK and safety data are limited on the use of 3TC doses higher than those recommended by the FDA in people with CrCl <30 mL/min. Clinicians may consider using the nearest available tablet strength (100 mg or 150 mg), as outlined in the “Alternative Dose” column (BIII) (see rationale[d]). There is insufficient evidence to recommend for or against the use of full-dose 3TC in people with CrCl <30 mL/min. To allow people to remain on certain ABC and/or DTG-containing FDC products, some Panel members use full-dose 3TC.</td><td>CrCl (mL/min)</td><td>Epivir Label Dose</td><td>Alternative Dosed</td><td rowspan="5">No dose adjustment</td></tr>
<tr><td>30–49[c]</td><td colspan="2">No dose adjustment</td></tr>
<tr><td>15–29
(see Note)</td><td>1 × 150 mg, then 100 mg every 24 hours</td><td>100–150 mg every 24 hours</td></tr>
<tr><td>5–14
(see Note)</td><td>1 × 150 mg, then 50 mg every 24 hours</td><td>100–150 mg every 24 hours</td></tr>
<tr><td><5 or on HD
(see Note)</td><td>1 × 50 mg, then 25 mg every 24 hours</td><td>100–150 mg every 24 hours</td></tr>
<tr><td rowspan="3">Tenofovir Alafenamide
(TAF)
Vemlidy</td><td rowspan="3">Vemlidy is available as a 25-mg tablet given PO once daily for the treatment of HBV.
Note: For people with progressively declining renal function, consider avoiding TAF.</td><td>CrCl (mL/min)</td><td colspan="2">Dose</td><td rowspan="3">Child-Pugh Class A: No dose adjustment
Child-Pugh Class B or C: Not recommended</td></tr>
<tr><td><15 (not on HD)</td><td colspan="2">Not recommended</td></tr>
<tr><td>On HD</td><td colspan="2">No dose adjustment. On HD days, administer after dialysis.</td></tr>
</table>

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	Usual Dose[a]	Dosing in Adults With Renal Insufficiency		Dosing in Adults With Hepatic Impairment
Tenofovir Alafenamide /Emtricitabine (TAF/FTC) *Descovy*	TAF for HIV treatment is only available as a component of FDC tablets (i.e., in Biktarvy, Descovy, Genvoya, Odefsey, and Symtuza). • TAF 10 mg PO once daily with EVG/c (Genvoya) or DRV/c (Symtuza) • TAF 25 mg PO once daily in other FDC tablets **Note:** For people with progressively declining renal function, consider avoiding TAF.	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C*: No dose recommendation
		15–29	**Not recommended** **Note:** There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose FTC in people with CrCl 15–29 mL/min.	
		<15 (not on HD)	**Not recommended**	
		On HD	No dose adjustment. On HD days, administer after dialysis.	
Tenofovir Disoproxil Fumarate (TDF) *Viread*	TDF 300 mg PO once daily **Note:** Avoid TDF, if possible, for CrCl <60 mL/min or for people with progressively declining renal function.	**CrCl (mL/min)**	**Dose**	No dose adjustment
		30–49	300 mg every 48 hours	
		10–29	300 mg twice weekly (every 72–96 hours)	
		<10 (not on HD)	No dose recommendation	
		On HD	300 mg every 7 days (administer after completion of HD)	
Tenofovir Disoproxil Fumarate/Emtricitabine (TDF/FTC) *Truvada*	One tablet PO once daily **Note:** Avoid TDF, if possible, for CrCl <60 mL/min or for people with progressively declining renal function.	**CrCl (mL/min)**	**Dose**	No dose recommendation
		30–49	One tablet every 48 hours	
		<30 or on HD	FDC of TDF/FTC **not recommended**	

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	Usual Dose[a]	Dosing in Adults With Renal Insufficiency		Dosing in Adults With Hepatic Impairment
Tenofovir Disoproxil Fumarate/Lamivudine (TDF/3TC) *Cimduo*	One tablet PO once daily **Note:** Avoid TDF, if possible, for CrCl <60 mL/min.	FDC of TDF/3TC **not recommended** for CrCl <50 mL/min or on HD		No dose recommendation
Non-Nucleoside Reverse Transcriptase Inhibitors				
Doravirine (DOR) *Pifeltro*	DOR 100 mg PO once daily	No dose adjustment		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Doravirine/Islatravir (DOR/ISL) *Idvynso*	One tablet PO once daily Dosing in the FDA Prescribing Information utilizes eGFR instead of CrCl based on a study in participants with severe renal impairment, defined as eGFR <30 mL/min/1.73 m^2.	**eGFR (mL/min/ 1.73 m^2)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
		≥30	No dose adjustment	
		<30	**Not recommended**	
		HD	No dose recommendation	
Doravirine/Tenofovir Disoproxil Fumarate/ Lamivudine (DOR/TDF/3TC) *Delstrigo*	One tablet PO once daily **Note:** Avoid TDF, if possible, for CrCl <60 mL/min.	FDC of DOR/TDF/3TC **not recommended** if CrCl <50 mL/min or on HD		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Efavirenz (EFV)	EFV 600 mg PO once daily on an empty stomach, preferably at bedtime	No dose adjustment		*Child-Pugh Class A:* No dose adjustment; use with caution *Child-Pugh Class B or C:* **Not recommended**
Efavirenz/Tenofovir Disoproxil Fumarate/ Emtricitabine (EFV/TDF/FTC)	One tablet PO once daily on an empty stomach, preferably at bedtime **Note:** Avoid TDF, if possible, for CrCl <60 mL/min.	FDC of EFV/TDF/FTC **not recommended** if CrCl <50 mL/min or on HD		*Child-Pugh Class A:* No dose adjustment; use with caution *Child-Pugh Class B or C:* **Not recommended**

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**	**Dosing in Adults With Hepatic Impairment**
Efavirenz/ Tenofovir Disoproxil Fumarate/ Lamivudine (EFV/TDF/3TC)	One tablet PO once daily on an empty stomach, preferably at bedtime **Note:** Avoid TDF, if possible, for CrCl <60 mL/min.	FDC of EFV/TDF/3TC **not recommended** if CrCl <50 mL/min or on HD	*Child-Pugh Class A:* No dose adjustment; use with caution *Child-Pugh Class B or C:* **Not recommended**
Etravirine (ETR) *Intelence*	ETR 200 mg PO twice daily following a meal	No dose adjustment	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Rilpivirine (RPV PO) *Edurant*	RPV 25 mg PO once daily with food	No dose adjustment	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Rilpivirine IM Plus Cabotegravir IM (RPV IM and CAB IM) *Cabenuva*	**Monthly Dosing** • Loading dose: RPV 900 mg/3 mL IM × one dose and CAB 600 mg/3 mL IM for one dose • Continuation phase: RPV 600 mg/2 mL IM every 4 weeks and CAB 400 mg/2 mL IM every 4 weeks **Every-2-Months Dosing** • Loading dose: RPV 900 mg/3 mL IM and CAB 600 mg/3 mL IM monthly for two doses • Continuation phase: RPV 900 mg/3 mL IM and CAB 600 mg/3 mL IM every 2 months	CrCl <30 mL/min or on HD: No dose adjustment; increase monitoring for adverse events.	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**		**Dosing in Adults With Hepatic Impairment**
Rilpivirine/Tenofovir Alafenamide/ Emtricitabine (RPV/TAF/FTC) *Odefsey*	One tablet PO once daily with food **Note:** For people with progressively declining renal function, consider avoiding TAF.	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
		15–29	**Not recommended** **Note:** There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose FTC in people with CrCl 15–29 mL/min.	
		<15 (not on HD)	**Not recommended**	
		On HD	No dose adjustment. On HD days, administer after dialysis.	
Rilpivirine/Tenofovir Disoproxil Fumarate/ Emtricitabine (RPV/TDF/FTC) *Complera*	One tablet PO once daily with food **Note:** Avoid TDF, if possible, for CrCl <60 mL/min.	FDC of RPV/TDF/FTC **not recommended** if CrCl <50 mL/min or on HD		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Rilpivirine/Dolutegravir (RPV/DTG) *Juluca*	One tablet PO once daily with food	In people with CrCl <30 mL/min: No dose adjustment; monitor closely for adverse effects.		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**	**Dosing in Adults With Hepatic Impairment**
Protease Inhibitors			
Atazanavir (ATV) *Reyataz*	ATV 400 mg PO once daily with food *or* (ATV 300 mg plus RTV 100 mg) PO once daily with food *or* (ARV 400 mg plus RTV 100 mg) PO once daily with food See Appendix A, Table 5 for more detailed dosing information.	**In People Without Prior ARV Treatment on HD** • (ATV 300 mg plus RTV 100 mg) once daily with food. **In ARV-Experienced People on HD** • ATV and ATV/r **are not recommended.**	**For Boosted ATV** • RTV boosting **is not recommended** in people with any degree of hepatic impairment. **For Unboosted ATV** • *Child-Pugh Class A:* No dose adjustment • *Child-Pugh Class B:* ATV 300 mg once daily (unboosted) for people without prior ARV treatment • *Child-Pugh Class C:* **Not recommended**
Atazanavir/Cobicistat (ATV/c) *Evotaz*	One tablet PO once daily with food	**If Used With TDF** • **Not recommended** if CrCl <70 mL/min or if also receiving a nephrotoxic agent **In People on Chronic HD** • **Not recommended** for ARV-experienced people on HD	**Not recommended** in people with any degree of hepatic impairment.
Darunavir (DRV) *Prezista*	**In People Without Prior ARV Treatment or ARV-Experienced Treatment With No DRV Resistance Mutations** • (DRV 800 mg plus RTV 100 mg) PO once daily with food **In ARV-Experienced People With at Least One DRV Resistance Mutation** • (DRV 600 mg plus RTV 100 mg) PO twice daily with food	No dose adjustment	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**		**Dosing in Adults With Hepatic Impairment**
Darunavir/Cobicistat (DRV/c) *Prezcobix*	One tablet PO once daily with food	**If Used With TDF** • **Not recommended** if CrCl <70 mL/min		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
Darunavir/Cobicistat/ Tenofovir Alafenamide/ Emtricitabine (DRV/c/TAF/FTC) *Symtuza*	One tablet PO once daily with food **Note:** For people with progressively declining renal function, consider avoiding TAF.	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
		15–29	**Not recommended** **Note:** There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose FTC in people with CrCl 15–29 mL/min.	
		<15 (not on HD)	**Not recommended**	
		On chronic HD	No dose adjustment. On HD days, administer after dialysis.	
Ritonavir (RTV) *Norvir*	**As a PI-Boosting Agent** • RTV 100–200 mg PO per day with food.	No dose adjustment		Refer to recommendations for the primary (i.e., boosted) PI.

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	Usual Dose[a]	Dosing in Adults With Renal Insufficiency		Dosing in Adults With Hepatic Impairment
Integrase Strand Transfer Inhibitors				
Bictegravir/Tenofovir Alafenamide/ Emtricitabine (BIC/TAF/FTC) *Biktarvy*	One tablet PO once daily **Note:** For people with progressively declining renal function, consider avoiding TAF.	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
		15–29	**Not recommended** **Note:** There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose FTC in people with CrCl 15–29 mL/min.	
		<15 (not on HD)	**Not recommended**	
		On chronic HD	No dose adjustment. On HD days, administer after dialysis.	
Bictegravir/ Lenacapavir (BIC/LEN) *Bixlenvo*	**Initiation** • Day 1: BIC 75 mg[e]/LEN 50 mg PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose • Day 2: BIC 75 mg[e]/LEN 50 mg PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose **Maintenance** • Day 3 and after: BIC 75 mg/LEN 50 mg one tablet PO once daily	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
		≥15	No dose adjustment	
		<15 or on HD	No dose recommendation	

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**		**Dosing in Adults With Hepatic Impairment**
Cabotegravir (CAB PO) *Vocabria*	**Treatment (as Optional Oral Lead-In or as Oral Bridging)** • CAB 30 mg PO once daily, given with RPV 25 mg PO, with food before switching to CAB IM and RPV IM	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
		≥15	No dose adjustment	
		<15 or on HD	No dose recommendation	
Cabotegravir IM Plus Rilpivirine IM (CAB IM plus RPV IM) *Cabenuva*	**Monthly Dosing** • Loading dose: CAB 600 mg/3 mL IM for one dose and RPV 900 mg/3 mL IM for one dose • Continuation phase: CAB 400 mg/2 mL IM every 4 weeks and RPV 600 mg/2 mL IM every 4 weeks **Every-2-Months Dosing** • Loading dose: CAB 600 mg/3 mL IM and RPV 900 mg/3 mL IM monthly for two doses • Continuation phase: CAB 600 mg/3 mL IM and RPV 900 mg/3 mL IM every 2 months	CrCl <30 mL/min or on HD: No dose adjustment; increase monitoring for adverse events.		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Dolutegravir (DTG) *Tivicay*	DTG 50 mg PO once daily *or* DTG 50 mg PO twice daily	No dose adjustment		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	Usual Dose[a]	Dosing in Adults With Renal Insufficiency		Dosing in Adults With Hepatic Impairment
Dolutegravir/Abacavir/ Lamivudine (DTG/ABC/3TC) *Triumeq*	One tablet PO once daily	Not FDA recommended if CrCl <30 mL/min due to the 3TC component **Note:** There is insufficient evidence to recommend for or against the use of full-dose 3TC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose 3TC.[d]		*Child-Pugh Class A:* People with mild hepatic impairment require a dose reduction of ABC. Use the individual drugs instead of the FDC tablet in these people. *Child-Pugh Class B or C:* **Contraindicated** due to the ABC component
Dolutegravir/ Lamivudine (DTG/3TC) *Dovato*	One tablet PO once daily	Not FDA recommended if CrCl <30 mL/min due to 3TC component **Note:** There is insufficient evidence to recommend for or against the use of full-dose 3TC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose 3TC.[d]		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
Dolutegravir/ Rilpivirine (DTG/RPV) *Juluca*	One tablet PO once daily with food	CrCl <30 mL/min or on HD: No dose adjustment; increase monitoring for adverse events.		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Elvitegravir/Cobicistat/ Tenofovir Alafenamide/ Emtricitabine (EVG/c/TAF/FTC) *Genvoya*	One tablet PO once daily with food **Note:** For people with progressively declining renal function, consider avoiding TAF.	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
		15–29	**Not recommended** **Note:** There is insufficient evidence to recommend for or against the use of full-dose, daily FTC in people with CrCl <30 mL/min. To allow people to remain on the FDC product, some Panel members use full-dose FTC in people with CrCl 15–29 mL/min.	
		<15 (not on HD)	**Not recommended**	
		On chronic HD	No dose adjustment. On HD days, administer after dialysis.	

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	**Usual Dose**[a]	**Dosing in Adults With Renal Insufficiency**	**Dosing in Adults With Hepatic Impairment**
Elvitegravir/Cobicistat/ Tenofovir Disoproxil Fumarate /Emtricitabine (EVG/c/TDF/FTC) *Stribild*	One tablet PO once daily with food	EVG/c/TDF/FTC **should not be initiated** in people with CrCl <70 mL/min. Discontinue EVG/c/TDF/FTC if CrCl declines to <50 mL/min while on therapy.	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* **Not recommended**
Raltegravir (RAL) *Isentress* *Isentress HD*	RAL 400 mg PO twice daily (using Isentress formulation) *or* RAL 1,200 mg (600 mg x two tablets) PO once daily (using Isentress HD formulation only)	No dose adjustment	**For Isentress** • *Child-Pugh Class A or B:* No dose adjustment • *Child-Pugh Class C:* No dose recommendation **For Isentress HD** • **Not recommended** for people with hepatic impairment.
CCR5 Antagonist			
Maraviroc (MVC) *Selzentry*	The recommended dose differs based on concomitant medications and potential for drug–drug interactions. See Appendix A, Table 10 for detailed dosing information.	**In People With CrCl <30 mL/min or on HD** *Without Potent CYP3A Inhibitors or Inducers* • MVC 300 mg twice daily; if postural hypotension occurs, reduce to MVC 150 mg twice daily *With Potent and Moderate CYP3A Inducers or Potent CYP3A Inhibitors* • **Contraindicated**	No dose recommendations. MVC concentrations will likely be increased in people with hepatic impairment.
CD4 Post-Attachment Inhibitor			
Ibalizumab (IBA) *Trogarzo*	Loading dose: IBA 2,000 mg IV Maintenance dose: IBA 800 mg IV every 2 weeks	No dose adjustment	No dose recommendation

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

Generic Name (Abbreviation) *Trade Name*	Usual Dose[a]	Dosing in Adults With Renal Insufficiency		Dosing in Adults With Hepatic Impairment
gp-120 Attachment Inhibitor				
Fostemsavir (FTR) *Rukobia*	FTR 600 mg PO twice daily	No dose adjustment		No dose adjustment
Capsid Inhibitor				
Lenacapavir (LEN) *Sunlenca*	**Initiation Option 1** • Day 1: 927 mg SQ x one dose plus 600 mg PO x one dose • Day 2: 600 mg PO x one dose **Initiation Option 2** • Day 1: 600 mg PO x one dose • Day 2: 600 mg PO x one dose • Day 8: 300 mg PO x one dose • Day 15: 927 mg SQ x one dose **Maintenance** • 927 mg by SQ injection every 6 months from the date of the last injection (+/-2 weeks)	No dose adjustment		*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
Lenacapavir/ Bictegravir (LEN/BIC) *Bixlenvo*	**Initiation** • Day 1: BIC 75 mg[e]/LEN 50 mg PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose • Day 2: BIC 75 mg[e]/LEN 50 mg PO x one dose, *plus* LEN 600 mg (300 mg x two tablets) PO x one dose **Maintenance** • Day 3 and after: BIC 75 mg/LEN 50 mg one tablet PO once daily	**CrCl (mL/min)**	**Dose**	*Child-Pugh Class A or B:* No dose adjustment *Child-Pugh Class C:* No dose recommendation
		≥15	No dose adjustment	
		<15 or on HD	No dose recommendation	

Appendix B. Antiretroviral Dosing Recommendations in Adults With Renal or Hepatic Insufficiency

[a] Refer to Appendix A, Tables 1–10 for additional dosing information.

[b] The prescribing information for FTC (Emtriva) recommends adjusted doses for people with CrCl 30–49 mL/min and people on hemodialysis. However, the prescribing information for several FDC products that contain FTC (including Descovy, Biktarvy, Genvoya, and Odefsey) recommends that the standard dose (FTC 200 mg) can be given once daily in these people. The recommendations in this table incorporate the dosing guidance from the FDC products.

[c] The prescribing information for 3TC (Epivir) recommends dosage adjustment from 300 mg once daily to 150 mg once daily for people with CrCl 30–49 mL/min. However, the prescribing information for several FDC products that contain 3TC (including ABC/3TC, Dovato, and Triumeq) recommends no dose adjustment for CrCl 30–49 mL/min. The recommendation in this table incorporates the dosing guidance from the FDC products.

[d] Use of 3TC doses higher than those recommended by the FDA for people with CrCl <30 mL/min has been reported in clinical practice[1-4] and endorsed in the *Guidelines for Chronic Kidney Disease in People With HIV* for many years[5]; limited published literature has supported the safety of this practice.[2,3] 3TC has a wide therapeutic index with no established correlation between elevated concentrations and adverse events. Serious adverse events, such as lactic acidosis and severe hematologic toxicities, have been reported in rare cases; however, these effects typically occurred when 3TC was used in combination with older nucleoside reverse transcriptase inhibitors (such as didanosine, stavudine, zidovudine). Clinicians may consider using the nearest available tablet strength (100 mg or 150 mg) to avoid the need for 3TC oral solution, thereby simplifying ARV regimens and facilitating adherence **(BIII).** See the Alternative Dose column in 3TC table entry. There is insufficient evidence to recommend for or against the use of full-dose 3TC in people with CrCl <30 mL/min. To allow people to remain on certain FDC products, some Panel members use full-dose 3TC.

[e] The difference in BIC dosing between *Biktarvy* (BIC/TAF/FTC) and *Bixlenvo* (BIC/LEN) is related to a *Biktarvy*-specific formulation effect.[6]

Key: 3TC = lamivudine; ABC = abacavir; AE = adverse effect; ARV = antiretroviral; ATV = atazanavir; ATV/c = atazanavir/cobicistat; ATV/r = atazanavir/ritonavir; BIC = bictegravir; CAB = cabotegravir; CrCl = creatinine clearance; CYP = cytochrome P450; DOR = doravirine; DRV = darunavir; DRV/c = darunavir/cobicistat; DTG = dolutegravir; EFV = efavirenz; eGFR = estimated glomerular filtration rate; ETR = etravirine; EVG/c = elvitegravir/cobicistat; FDA = U.S. Food and Drug Administration; FDC = fixed-dose combination; FTC = emtricitabine; FTR = fostemsavir; HBV = hepatitis B virus; HD = hemodialysis; IBA = ibalizumab; IM = intramuscular; ISL = islatravir; IV = intravenous; LEN = lenacapavir; MVC = maraviroc; the Panel = Panel on Antiretroviral Guidelines for Adults and Adolescents; PK = pharmacokinetic; PI = protease inhibitor; PO = orally; RAL = raltegravir; RPV = rilpivirine; RTV = ritonavir; SQ = subcutaneous; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate

Child-Pugh Classifications

Child-Pugh Score			
Component	**Points Scored**		
	1	**2**	**3**
Encephalopathy[a]	None	Grade 1–2	Grade 3–4
Ascites	None	Mild or controlled by diuretics	Moderate or refractory despite diuretics
Albumin	>3.5 g/dL	2.8–3.5 g/dL	<2.8 g/dL
Total Bilirubin, *or*	<2 mg/dL (<34 μmol/L)	2–3 mg/dL (34–50 μmol/L)	>3 mg/dL (>50 μmol/L)
Modified Total Bilirubin[b]	<4 mg/dL	4–7 mg/dL	>7 mg/dL
Prothrombin Time (Seconds Prolonged), *or*	<4	4–6	>6
International Normalized Ratio (INR)	<1.7	1.7–2.3	>2.3

[a] Encephalopathy Grades

Grade 1: Mild confusion, anxiety, restlessness, fine tremor, slowed coordination

Grade 2: Drowsiness, disorientation, asterixis

Grade 3: Somnolent but rousable, marked confusion, incomprehensible speech, incontinence, hyperventilation

Grade 4: Coma, decerebrate posturing, flaccidity

[b] Modified total bilirubin is used for people who have Gilbert's syndrome or who are taking atazanavir.

Child-Pugh Classification	Total Child-Pugh Score[a]
Class A (Mild)	5–6 points
Class B (Moderate)	7–9 points
Class C (Severe)	>9 points

[a] Sum of points for each component of the Child-Pugh Score.