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>Emtricitabine
(FTC)
Emtriva</td><td>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>No dose recommendation</td></tr>
<tr><td></td><td></td><td>CrCl (mL/min)</td><td>Capsule</td><td>Solution</td><td></td></tr>
<tr><td></td><td></td><td>30–49[b]</td><td colspan="2">No dose adjustment.</td><td></td></tr>
<tr><td></td><td></td><td>15–29
(see Note)</td><td>200 mg every 72 hours</td><td>80 mg every 24 hours</td><td></td></tr>
<tr><td></td><td></td><td><15 (not on HD)
(see Note)</td><td>200 mg every 96 hours</td><td>60 mg every 24 hours</td><td></td></tr>
<tr><td></td><td></td><td>On HD[b]</td><td colspan="2">No dose adjustment. On HD days, administer after dialysis.</td><td></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**
Lamivudine (3TC) *Epivir*	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.	**CrCl (mL/min)**	**Epivir Label Dose**	**Alternative Dosed**	No dose adjustment
		30–49[c]	No dose adjustment		
		15–29 (see **Note**)	1 × 150 mg, then 100 mg every 24 hours	100–150 mg every 24 hours	
		5–14 (see **Note**)	1 × 150 mg, then 50 mg every 24 hours	100–150 mg every 24 hours	
		<5 or on HD (see **Note**)	1 × 50 mg, then 25 mg every 24 hours	100–150 mg every 24 hours	
Tenofovir Alafenamide (TAF) *Vemlidy*	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.	**CrCl (mL/min)**	**Dose**		*Child-Pugh Class A:* No dose adjustment *Child-Pugh Class B or C:* **Not recommended**
		<15 (not on HD)	**Not recommended**		
		On 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
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.

References

1. Bohjanen P, Johnson M, Szczech L, et al. Steady-state pharmacokinetics of lamivudine in human immunodeficiency virus-infected patients with end-stage renal disease receiving chronic dialysis. *Antimicrob Agents Chemother*. 2002;46(8):2387-92. Available at: https://pubmed.ncbi.nlm.nih.gov/12121909.

2. Fischetti B, Shah K, Taft DR, Berkowitz L, Bakshi A, Cha A. Real-world experience with higher-than-recommended doses of lamivudine in patients with varying degrees of renal impairment. *Open Forum Infect Dis*. 2018;5(10):ofy225. Available at: https://www.ncbi.nlm.nih.gov/pubmed/30302352.

3. Michienzi SM, Schriever CA, Badowski ME. Abacavir/lamivudine/dolutegravir single tablet regimen in patients with human immunodeficiency virus and end-stage renal disease on hemodialysis. *Int J STD AIDS*. 2019;30(2):181-187. Available at: https://www.ncbi.nlm.nih.gov/pubmed/30381029.

4. Wood BR, Pozniak AL. Dosing lamivudine or emtricitabine in renal impairment: New data confirm it's time for updated guidance! *AIDS*. 2021;35(8):1305-1307. Available at: https://www.ncbi.nlm.nih.gov/pubmed/34076616.

5. Lucas GM, Ross MJ, Stock PG, et al. Clinical practice guideline for the management of chronic kidney disease in patients infected with HIV: 2014 update by the HIV Medicine Association of the Infectious Diseases Society of America. *Clin Infect Dis*. 2014;59(9):e96-138. Available at: https://www.ncbi.nlm.nih.gov/pubmed/25234519.

6. Orkin C, Ruane PJ, Hedgcock M, et al. Switch to single-tablet bictegravir-lenacapavir from a complex HIV regimen (ARTISTRY-1): a randomised, open-label, phase 3 clinical trial. *Lancet*. 2026;407(10535):1249-1258. Available at: https://www.ncbi.nlm.nih.gov/pubmed/41763229.