Nucleoside Reverse Transcriptase Inhibitors (NRTIs)

Abacavir (ZIAGEN®, ABC)

Dose	Neonatal/Infant: • Not approved for infants < 3 months. Pediatric (3 months to 16 years): • 8 mg/kg/dose po BID • Maximum: 300 mg po BID • If clinically stable with undetectable viral load and stable CD4 cell count, may consider once daily ABC as 16 mg/kg/dose to maximum of 600 mg po once daily. Adolescent(≥16 years)/Adult: • 300 mg po BID or 600 mg once daily
How Supplied/ Storage	• 20 mg/mL banana-strawberry liquid (240 mL bottle). Store at room temperature. • 300 mg tablet • Scored 300mg tablet for pediatric use (> 14 kg) (available in US only) • Combination tablet: – TRIZIVIR® = 300 mg zidovudine; 150 mg lamivudine; 300 mg abacavir – KIVEXA® = 600 mg abacavir; 300 mg lamivudine
Food Restrictions	May take with or without food.
Comments	• Test patients for HLA-B*5701 allele before starting therapy to predict risk of hypersensitivity. If positive for HLA-B*5701, do not use abacavir. • Watch for hypersensitivity reaction (~ 5% incidence; usually within first 6 weeks): fever, rash, fatigue, n/v, diarrhea, abdominal pain and respiratory symptoms. • **Do NOT rechallenge if suspect hypersensitivity.** • KIVEXA®: Film coated immediate release tablet however no studies regarding stability of split or crushed tablets. (Email communication, GlaxoSmithKline, May 2008) • TRIZIVIR®: Film coated immediate release tablet however no studies regarding stability of split or crushed tablets.

Didanosine (VIDEX®, VIDEX EC®, ddI)

Dose	Neonatal/Infant (2 weeks to less than 3 months): • 50 mg/m^2/dose po BID recommended by ARV Guidelines[1] • manufacturer recommends 100 mg/m^2/dose po BID Infant dose (*>3 mos to 8 mos):* • 100 mg/m^2/dose po BID *Pediatric dose of oral solution (>8 months):* • 120 mg/m^2/dose po BID (range 90 – 150 mg/m^2/dose po BID, maximum 200 mg BID)

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)	
	Pediatric dose of Videx EC or generic capsules for ages 6 years to 18 years and body weight ≥ 20 kg: 20 to < 25 kg: 200 mg po once daily 25 to < 60 kg: 250 mg po once daily ≥60 kg: 400 mg po once daily • Treatment naïve (3-21 years): 240 mg/m^2/dose po once daily (oral solution or capsules) to a maximum of 400 mg once daily has been used with effective viral suppression. Adult/Adolescent : – < 60 kg: 250 mg once daily – ≥60 kg: 400 mg once daily
How Supplied/ Storage	• 4 g pediatric powder for oral solution (final concentration of 10 mg/mL). Refrigerate for up to 30 days (shake well before using). **Available through Special Access Program**[2]. • VIDEX EC delayed release capsules: 125 mg, 200mg, 250 mg and 400 mg
Food Restrictions	• Take on an empty stomach. Do not give with fruit juices or acidic drinks, feeds or milk. To improve adherence some practitioners administer ddI without regard to timing of food.
Comments	• 4 g: Add 200 mL purified water to powder, shake, and then add 200 mL antacid (suitable antacid: MAALOX Extra Strength). • ddI oral solution contains antacids which may interfere with absorption of some medications if given at the same time. • Combination of d4T and ddI is not recommended (unless benefits outweigh the risks) due to overlapping toxicities. • Until further information is available, combination of ddI and tenofovir should be avoided wherever possible due to high failure rates (in combination with NNRTIs) and decline in absolute CD4 cells.
Lamivudine (3TC®)	
Dose	Neonatal/Infant (age < 4 weeks): • 2 mg/kg/dose po BID Pediatric (age ≥ 4 weeks): • 4 mg/kg/dose po BID; maximum 150 mg po BID Adult/Adolescent (age ≥ 16 years): • ≥ 50 kg: 150 mg po BID or 300 mg po once daily • <50 kg: 4 mg/kg/dose po BID (maximum 150 mg po BID)
How Supplied/ Storage	• 10 mg/mL strawberry-banana oral liquid (240 mL bottle). Store at room temperature. • 150 mg and 300 mg tablets • Combination tablets: – COMBIVIR® = 300 mg zidovudine;150 mg lamivudine – TRIZIVIR® = 300 mg zidovudine; 150 mg lamivudine; 300 mg abacavir – KIVEXA® = 600 mg abacavir, 300 mg lamivudine

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)	
Food Restrictions	Take with or without food.
Comments	May cut lamivudine tablet in half (not scored) or crush.

Stavudine (ZERIT®, d4T)	
Dose	Neonatal/Infant (birth up to 13 days) : • 0.5 mg/kg/dose po q12h Pediatric (14 days up to a weight of 30 kg): • 1 mg/kg/dose po q12h Adult/Adolescent (body weight ≥30 kg) • 30 to < 60 kg: 30 mg po BID • ≥60 kg: 40 mg po BID
How Supplied/ Storage	• 1 mg/mL fruit flavored suspension (200 mL bottle). **Available through Special Access program**[2]. Stable for 30 days in fridge. Shake well. • 15, 20, 30, 40 mg capsules
Food Restrictions	Take with or without food.
Comments	• May open capsule and give in small portion of food or 5-10 mL cool tap water. • Should not be administered with zidovudine due to poor antiretroviral effect. • Combination of d4T and ddI is not recommended (unless benefits outweigh the risks) due to overlapping toxicities.
Tenofovir (VIREAD®, TDF)	
Dose	Neonatal/Infant: • Not approved for use. Pediatric (2 years to <18years): • Not approved for use in children less than 2 years. • Recommended oral dose is 8 mg/kg (up to a maximum dose of 300 mg) once daily as powder or tablets (see Viread product monograph, US) Adolescent (weight ≥35 kg)/Adult: • 300 mg once daily • Oral powder (7.5 scoops) may be used if can't swallow tab (available in US only) –
How Supplied/ Storage	• 150 mg, 200 mg , 250 mg, 300 mg tablet (only 300 mg available in Canada as of July 2012) • Oral powder (40mg per 1g of powder) (US only as of July 2012)

	• Combination tablets: – TRUVADA® = 300 mg tenofovir; 200 mg emtricitabine – ATRIPLA® = 300 mg tenofovir; 200 mg emtricitabine; 600 mg efavirenz – COMPLERA® = 300 mg tenofovir; 200 mg emtricitabine; 25 mg rilpivirine
Food Restrictions	Take with or without food.
Comments	• Tenofovir: Crushed tabs dissolve in 100mL of water, grape juice, or grapefruit juice within 20 minutes. Consume immediately. Unpalatable bitter taste. May split tab and insert in empty gelatin capsule to mask bitter taste. • Decreases in BMD have been reported in both adult and pediatric studies. • Oral powder should be mixed in a container with 2 to 4 ounces of soft food not requiring chewing (e.g., applesauce, baby food, yogurt). Entire mixture should be ingested immediately to avoid a bitter taste. Do not administer in a liquid as the powder may float on top even after stirring. • Tenofovir may decrease atazanavir (ATV) plasma concentrations. In adults, a boosting dose of 100 mg ritonavir is recommended (ATV 300 mg/RTV 100 mg) if coadministered with tenofovir. • TRUVADA®: May split tablets. May crush and stir into water, grape juice or orange juice. The stability of the mixture is unknown. (Email communication, Gilead, July 2012) • ATRIPLA®: Atripla FDC tablet crushed, dissolved in 5 mL of water and diluted to 20 mL with Ora-Sweet oral solution and used within 24 hours (JAIDS 2011; 56:e131-2) did not meet bioequivalence of Atripla whole tablet however clinical implications unknown. Efavirenz not soluble in water. (Email communication, Gilead, July 2012).
Zidovudine (RETROVIR®, AZT, ZDV)	
Dose	Dose for infant < 35 weeks gestation for prevention of transmission or treatment: • For prevention of transmission, start ZDV immediately (no longer than 6-12 hours after birth) and administer for 6 weeks. • *Less than 30 weeks gestation*: – PO: 2 mg/kg/dose po q12h for 4 weeks, then q8h for last 2 weeks – IV: 1.5 mg/kg/dose IV q12h for 4 weeks, then q8h for last 2 weeks • *30 – 34 weeks gestation:* – PO: 2 mg/kg/dose po q12h for 2 weeks, then q8h for last 4 weeks – IV: 1.5 mg/kg/dose q12h for 2 weeks, then q8h for last 4 weeks /Infant ≥ 35 weeks gestation for prevention of transmission or treatment (up to 6 weeks of age)*:* – PO: 4 mg/kg/dose po q12h – IV: 1.5 mg/kg/dose IV q6h Pediatric dose (6 weeks to < 18 years): • PO: 180 - 240 mg/m^2/dose po q12h or 160 mg/m^2/dose po q8h (range 90-180) or: • MG/KG DOSING: – 4 kg to < 9kg: 12 mg/kg BID – 9 kg to < 30 kg: 9 mg/kg BID

	– ≥ 30kg: 300 mg BID <u>Adult/Adolescent (18 years or older):</u> • 300 mg BID
How Supplied/ Storage	• 10 mg/mL strawberry syrup (240 mL bottle). Store at room temperature. • 100 mg capsules • 200 mg/20 mL vial (intravenous) • <u>Combination tablets:</u> – COMBIVIR® = 300 mg zidovudine;150 mg lamivudine – TRIZIVIR® = 300 mg zidovudine; 150 mg lamivudine; 300 mg abacavir
Food Restrictions	Take with or without food.
Comments	• If zidovudine upsets stomach, take with food. • Should not be administered with d4T due to poor antiretroviral effect. • May open capsule and give in small portion of food or 5 – 10 mL cool tap water. • COMBIVIR®: Film coated immediate release tablet; however no studies regarding stability of split or crushed tablets. (Email communication, GlaxoSmithKline, May 2008) • TRIZIVIR®: Film coated immediate release tablet; however no studies regarding stability of split or crushed tablets.

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)	
Efavirenz (SUSTIVA®, EFV)	
Dose	Neonatal/Infant: • Not approved for use. Pediatric (< 3 years): • no data are available on the appropriate EFV dose for children < 3 years Pediatric (more than 3 years and ≥ 10 kg): • Give once daily (PO) • 10 to < 15 kg: 200 mg • 15 to <20 kg: 250 mg • 20 to < 25 kg: 300 mg • 25 to < 32.5 kg: 350 mg • 32.5 to <40 kg: 400 mg • ≥ 40 kg: 600 mg • Pediatric patients with virologic rebound or lack of response may require higher doses (367 mg/m2/dose to maximum of 600 mg po once daily) Adult/Adolescent (weight ≥40 kg): • 600 mg po once daily
How Supplied/ Storage	• Pediatric suspension 30 mg/mL (180 mL bottle) strawberry mint. Available through expanded access program[3] (1-877-372-7097). • 50, 200 mg capsules • 600 mg tablet • Combination tablet: – ATRIPLA® = 300 mg tenofovir; 200 mg emtricitabine; 600 mg efavirenz
Food Restrictions	May take with or without food but do not take with high fat meal (significantly increases AUC and side effects).
Comments	• Bedtime dosing recommended first 2-4 weeks to decrease CNS side effects. • Capsules may be opened and added to liquids or foods but peppery taste. Grape jelly may mask taste. • Efavirenz: For NG administration, may open capsules and mix with 15 mL Ora-Sweet (grind powder to enhance dissolution). Powder insoluble in water. Do not mix with polyethylene glycol - will decrease bioavailability. Insoluble in water. • EFV should be used with caution in adolescent women of childbearing potential because of the risk of teratogenicity. • Mixed inducer/inhibitor of CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.** • ATRIPLA®: Atripla FDC tablet crushed, dissolved in 5 mL of water and diluted to 20 mL with Ora-Sweet oral solution and used within 24 hours (JAIDS 2011; 56:e131-2) did not meet bioequivalence of Atripla whole tablet however clinical implications unknown. Efavirenz not soluble in water. (Email communication, Gilead, July 2012)

Etravirine (Intelence® ETR)	
Dose	Neonate/ Infant • Not approved for use. Pediatric (6 to <18 years of age): ≥16 kg to < 20 kg: 100 mg bid ≥ 20 kg to < 25 kg: 125 mg bid ≥ 25 kg to < 30 kg: 150 mg bid ≥ 30 kg: 200 mg bid Adult (antiretroviral experienced): • 200 mg po BID
How Supplied/ Storage	• 25 mg tablets (US only as of July 2012) • 100 mg tablets • 200 mg tablets • Tablets sensitive to moisture. Store in original container with dessicant at room temperature.
Food Restrictions	• Take with food.
Comments	• Inducer of CYP3A4; Inhibitor of CYP2C9/2C19. **CHECK FOR DRUG INTERACTIONS.** • May disperse tablets in a small amount of water, stir, and consume immediately. Rinse glass with water several times and swallow rinses to ensure entire dose consumed.
Nevirapine (VIRAMUNE®, NVP)	
Dose	Newborn perinatal prophylaxis (see Perinatal guidelines for more information on use of NVP for prophylaxis of mother to child transmission of HIV): 3 doses in first week of life (1st dose within 48 hours of birth; 2nd dose 48 hours after 1st dose; 3rd dose 96 hours after 2nd dose): • Birth weight < 1.5 kg: 2 **mg/kg per dose** PO **(note: dose per kg for this weight)** • Birth weight 1.5-2 kg: 8 mg **per dose** PO • Birth weight > 2 kg: 12 mg **per dose** PO Pediatric: *≥ 15 days to < 8 years:* • 200 mg/m^2/dose po once daily x 14 days, then 200 mg/m^2/dose po BID (if no rash or ADRs; maximum 200 mg per dose) *≥8 years of age:* • 120-150mg/m^2/dose po once daily X 14 days, then 120-150mg/m^2/dose po BID (if no rash or ADRs; maximum 200 mg per dose) Adult/Adolescent: • 200 mg po BID (Note: Initiate dose at 200 mg once daily x 14 days then increase dose to 200 mg po BID) • 400 mg extended release once daily (Note: initiate therapy with 200 mg immediate release tablet once daily for the first 14 days than increase to 400 mg once daily if no rash; extended release not approved for use in children)

How Supplied/ Storage	• 10 mg/mL sweet flavored syrup (240 mL bottle). **Available through Special Access program**[2]. Store at room temperature. • 200 mg tablet • 400 mg extended release tablet
Food Restrictions	May take with or without food.
Comments	• Do not increase dose if rash occurs within 1st 14 days. • May crush immediate release tablets, mix in water and give orally or by G-tube. • Induces CYP450 3A4 – may need to increase dose of other drugs metabolized by P450 enzymes in the liver. **CHECK FOR DRUG INTERACTIONS.** • If nevirapine dosing is interrupted for > 7 days, should be restarted with once daily dosing for 14 days followed by dose escalation. • When switching from efavirenz to nevirapine, the 14-day escalation of nevirapine is not required. Full doses of nevirapine can be used as of the first day.
Rilpivirine (EDURANT®, RPV)	
Dose	<u>Neonate/infant dose:</u> • RPV is not approved for use in neonates/infants. <u>Pediatric:</u> • RPV is not approved for use in children <u>Adult (antiretroviral-naïve patients only):</u> • 25 mg once daily
How Supplied/ Storage	• 25 mg tablet • COMPLERA® = 300 mg tenofovir; 200 mg emtricitabine; 25 mg rilpivirine
Food Restrictions	Must take with food (at least 400 kcal recommended).
Comments	• RPV is metabolized by CYP4503A4. CHECK FOR DRUG INTERACTIONS. • Use RPV with caution in patients with baseline VL > 100 000 copies/mL.

Protease Inhibitors (PIs)

Atazanavir (Reyataz®, ATV)

Dose

Neonate/infant:

- Not approved for use.
- Should not be administered to neonates due to risk associated with hyperbilirubinemia.

Pediatric (≥6 to <18 years):

- 15 to < 25 kg: ATV150 mg/RTV 80 mg po once daily (treatment naïve only)
- 25 to < 32 kg: ATV 200 mg/RTV 100 mg po once daily
- 32 to < 39 kg: ATV 250 mg/RTV 100 mg po once daily
- ≥ 39 kg: ATV 300 mg/RTV 100mg po once daily

Adult/Adolescent (≥18 years):

- *Antiretroviral naïve:* ATV 300 mg + RTV 100 mg po once daily or ATV 400 mg po once daily (If unboosted ATV is used in adolescents, higher doses than those used in adults may be required to achieve target drug levels).
- *Antiretroviral experienced*: 300 mg ATV/100 mg RTV both po once daily
- *Atazanavir in combination with efavirenz:* 400 mg ATV/100 mg RTV both po once daily (*naïve only*)
- *Atazanavir in combination with tenofovir:* 300 mg ATV/100 mg RTV both po once daily
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How Supplied/ Storage

- 150, 200, and 300 mg capsules
- 50 mg/1.5 g dispersable oral powder (180 g/bottle) – investigational use only in Europe

Food Restrictions

Take with food.

Comments

- Antacids and buffered medications (including ddI buffered tablets) decrease ATV concentrations if taken at the same time – space by 1 – 2 hours.
- H_2 receptor antagonists and proton pump inhibitors decrease ATV levels. Check drug interaction resource for recommendations on dosing ATV when coadministered with H2 receptor antagonists. .
- Coadministration of atazanavir and proton pump inhibitors is **NOT** recommended.
- Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.**

Darunavir (TMC 114, Prezista®, DRV)

Dose

Neonate/ Infant:

- Not approved for use.

Pediatric (< 3 years):

- DRV should not be used in pediatric patients < 3 years.

Pediatric (3 years to < 18 years)

- See product monograph for dosing recommendations for oral solution for pediatric patients weighing 10 kg to < 15 kg.

Protease Inhibitors (PIs)	
	• ≥ 15 kg-< 30 kg: 375 mg DRV/50 mg RTV po BID • ≥ 30 kg-< 40 kg: 450 mg DRV/60 mg RTV po BID • ≥ 40kg: 600 mg DRV/100 mg RTV po BID • *Do not use once daily dosing in children < 12 years or in any patient < 18 years who is treatment experienced. Once daily dosing (DRV 800 mg + RTV 100 mg) may be used in treatment naïve pediatric patients 12-18 years of age and body weight > 40 kg. Adult/Adolescent (≥18 years): • 600 mg darunavir/100 mg ritonavir po BID (treatment experienced with at least one DRV mutation) • 800 mg darunavir/100mg ritonavir po daily (ARV-naïve or experienced with no darunavir specific mutations)
How Supplied/ Storage	• 75 mg, 150 mg, 400 mg, 600 mg tablets (only 400 mg and 600 mg tablets available in Canada as of July 2012) • 100mg/mL Oral suspension (US only as of July 2012)
Food Restrictions	Take with food.
Comments	• Darunavir specific mutations: V11I, V32I, L33F, I47V, I50V, I54L, I54M, T74P, L76V, I84V and L89V • Darunavir contains a sulfonamide moiety. The potential cross-sensitivity with other sulfa drugs is unknown – caution in patients with sulfonamide allergy. • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.** • No data available on chewing or crushing. No problems anticipated if tablets chewed or crushed for administration through a nasogastric (NG) tube (Data on file, Tibotec, May 2008)
Fosamprenavir (TELZIR®, f-APV	
Dose	Neonate: • Not approved for use. Pediatric (4 weeks -18 years): • *Oral suspension (antiretroviral naïve >4 weeks or ARV experienced >6 months)* – <11 kg: f-APV 45 mg/kg plus ritonavir 7 mg/kg both BID 11 kg to <15 kg: f-APV 30 mg/kg plus ritonavir 3 mg/kg both BID – 15 kg to <20 kg: f-APV 23 mg/kg plus ritonavir 3 mg/kg both BID – ≥20 kg f-APV 18 mg/kg plus ritonavir 3 mg/kg both BID OR in protease inhibitor naïve >2 years: 30mg/kg f-APV BID Adult/Adolescent (>18 years): • *Antiretroviral naïve:* – 1400 mg po BID (no ritonavir) – 1400 mg f-APV /100-200 mg RTV, both po once daily – 700 mg f-APV /100 mg RTV, both po BID • *Protease-inhibitor experienced*: 700 mg f-APV/100 mg RTV, both po BID

Protease Inhibitors (PIs)	
How Supplied/ Storage	• 700 mg tablet (prodrug, equivalent to 600 mg amprenavir) • 50 mg/mL oral suspension (225 mL bottle) [calcium prodrug, equivalent to 43 mg/mL amprenavir]. Contains 0.6% propylene glycol. Store suspension between 2-30℃. Discard 2 8 days after opening. Shake well.
Food Restrictions	• F-APV tablets without RTV may be taken with or without food. F-APV with RTV should be taken with food. • Oral suspension should be taken on an empty stomach (1 hr before or 2 hours after food) in adults. Oral suspension should be given with food in pediatric patients.
Comments	• Fosamprenavir calcium tablets and suspension are equivalent on a mg per mg basis. • APV is a sulfonamide. In pivotal studies there was no evidence of increased rash in patients with a history of sulfonamide allergy. Caution in patients with sulfonamide allergy. • The suspension contains propyl and methyl hydroxybenzoate which may cause allergic reactions (delayed in some cases). • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.** • No data available regarding stability of crushed or dissolved tablet.
Lopinavir/ Ritonavir (KALETRA®, LPV/RTV)	
Dose	Neonate (age < 14 days):: No data on appropriate dose or safety of LPV/r in this age group. Do not administer to neonates before a postmenstrual age of 42 weeks and a post-natal age of at least 14 days Infant dose (age 14 days – 6 months): *Without NVP or EFV*: • 16 mg/kg LPV BID or 300 mg LPV/m^2/dose po BID • LPV/r is not recommended in combination with nevirapine, efavirenz, fosamprenavir, or nelfinavir in patients <6 months of age. • Once daily dosing is not recommended Pediatrics/Adolescent (>6 months – 18 years): • *Without NVP or EFV:* – <15 kg: 12 mg/kg LPV po BID (approx. 230 mg/m^2 LPV/dose) – ≥ 15 to 40 kg: 10 mg/kg LPV po BID (approx. 230 mg/m^2 LPV/dose) – ≥ 40 kg: 400 mg LPV/100 mg RTV po BID • *With NVP or EFV:* • <15 kg: 13 mg/kg LPV po BID (approx. 300 mg/m^2 LPV/dose) • ≥15 to45 kg: 11 mg/kg LPV po BID • ≥45 kg: 600 mg LPV/150 mg RTV po BID tablets or 533 mg bid LPV solution • Once daily dosing is not recommended.

Protease Inhibitors (PIs)	
	Adult (> 18 years): • *Without NVP or EFV:* – 400 mg LPV /100 mg RTV po BID (2 tablets po BID) or – 800 mg LPV/200 mg RTV po once daily (4 tablets po daily) for patients with < 3 LPV-associated mutations • *With NVP or EFV:* – 500 mg LPV/125 mg RTV po BID – LPV/r once daily is not recommended with NVP or EFV
How Supplied/ Storage	• Cotton candy flavored oral solution: 80 mg LPV/20 mg RTV per mL (160 mL bottle). Contains alcohol 42.4% v/v and propylene glycol 153 mg/mL. Solution should be refrigerated until dispensed and then stored up to 42 days at room temperature. • 100 mg lopinavir/25 mg ritonavir **pediatric** tablet; 200 mg lopinavir/50 mg ritonavir **adult** tablet. Tablets should be stored at room temperature. Tablets must be swallowed whole; they cannot be broken, chewed, or crushed.
Food Restrictions	• Solution: Take with food to enhance absorption. • Tablets: Take with or without food.
Comments	• Liquid formulation contains alcohol therefore avoid co-medication with metronidazole. • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.**
Nelfinavir (Viracept®, NFV)	
Dose	Neonatal/Infant (less than 6 weeks) • Not approved for use in children < 2 years. • *NICHD/HPTN 040/PACTG 1043:* – More than 3 kg: 200 mg po BID – 2-3 kg: 150 mg po BID – 1.5-2 kg: 100 mg po BID – Less than 1.5 kg: not studied (Alberta Health Services perinatal protocol recommends 50 mg/kg/dose PO q 12 h in infants with birth weight < 1.5 kg) Pediatric (2 – 13 years): • 50 mg/kg/dose po BID (range 45 – 55 mg/kg/dose) Adult/Adolescent: • 1250 mg po BID
How Supplied/ Storage	250 mg and 625 mg tablets
Food Restrictions	Give with food or shortly after food for optimal absorption.
Comments	• **Tabs:** Dissolve a 250 mg tablet in 5 ml of sterile water (50 mg/ml). Measure out dose with a syringe that has 1 ml

Protease Inhibitors (PIs)	
	increments. Round dose of tablets to closest 50 mg. Do not mix with formula. • For older children, tablets readily dissolve in water and produce dispersion that can be mixed with milk/chocolate milk. Tablets can be crushed and given with pudding. Tablet may be mixed with food or liquid up to 6 hours (refrigerated) before dose is taken. • Do not mix with acidic food/juice (orange or apple juice) due to bitter taste. • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.**
Ritonavir (NORVIR®, RTV)	
Dose	• Ritonavir is now used solely as a pharmacokinetic enhancer of other protease inhibitors. For dosing, see specific protease inhibitors.
How Supplied/ Storage	• 80 mg/mL peppermint/caramel liquid (240 mL bottle). Recommended to be stored at room temperature and to use by product expiration date (limited shelf-life). (43% v/v ethanol) • 100 mg tablet. Store at room temperature. • 100 mg soft elastic capsule. Refrigerate until dispensed then stable at room temperature x 30 days. (12% v/v ethanol)
Food Restrictions	Take with food.
Comments	• Liquid is unpalatable, bad aftertaste. Tips: – Mix oral solution with milk/chocolate milk, or pudding. – Give after popsicle/frozen juice to dull taste buds. – Give after grape jelly, maple syrup, or peanut butter which coats mouth. – Give strong flavor after dose: syrup, cheese, chewing gum • During encapsulation process, exposure to soya protein lecithin and fractionated coconut oil occurs. As peanut and soy are from the same plant family, some patients allergic to peanuts may also be allergic to soy. Consult an allergist prior to taking capsules. • Liquid formulation contains alcohol therefore avoid co-medication with metronidazole. • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.**

Protease Inhibitors (PIs)	
Tipranavir (APTIVUS®, TPV)	
Dose	Neonate/Infant: • Not approved. Pediatric (2-18 years): • 14 mg/kg TPV + 6 mg/kg RTV po BID (375 mg/m^2 TPV + 150 mg/m^2 RTV both BID) (max. 500 mg TPV + 200 mg RTV BID) Adult/Adolescent: • 500 mg TPV +200 mg RTV po BID •
How Supplied/ Storage	• 250 mg capsule • Refrigerate the capsules until dispensed then stable at room temperature x 60 days • 100 mg/mL oral solution available in the **US only**. Note: solution contains 116 IU/mL vitamin E. • Store oral solution at room temperature (25ºC). Use solution within 60 days of opening the bottle.
Food Restrictions	Take with food.
Comments	• Indicated for adults who are highly treatment experienced or have resistance to multiple PIs. • TPV is a sulfonamide. The potential cross-sensitivity with other sulfonamide drugs is unknown – caution in patients with sulfonamide allergy. • Protease inhibitors are extensively metabolized by as well as inhibit CYP450 3A4. **CHECK FOR DRUG INTERACTIONS.** • Cannot be split or crushed (Verbal communication, Boehringer Ingelheim, May 2008).

Entry and Fusion Inhibitors	
Enfuvirtide (Fuzeon®, T-20)	
Dose	Neonate/ Infant/ Pediatrics (less than 6 years): • Not approved for use in children less than 6 years. Pediatric/Adolescent (6-16 years): • For children 6 years or more: 2 mg/kg/dose twice daily, maximum dose 90 mg (1 mL) twice daily injected subcutaneously into upper arm, anterior thigh, or abdomen. Adult/Adolescent (more than 16 years): • 90 mg (1 mL) twice daily injected subcutaneously into the upper arm, anterior thigh, or abdomen.
How Supplied/ Storage	• Injection: lyophilized powder for injection 108 mg of enfuvirtide, when reconstituted with 1.1 mL sterile water to deliver 90 mg/mL. • Convenience kit: 60 single use vials of enfuvirtide (90 mg strength), 60 vials of sterile water for injection, 60 reconstitution syringes (3 mL), 60 administration syringes (1 mL), alcohol wipes • Reconstituted vial should be allowed to stand until the powder goes completely into solution (may take up to 45 min). Do not shake. • Once reconstituted, enfuvirtide should be injected immediately or stored in the fridge in the original vial until use. Must be used within 24 hrs after reconstitution
Comments	Injection sites should be rotated. Enfuvirtide should not be injected into moles, scar tissue, bruises, or the navel.
Maraviroc (Celsentri®, MVC)	
Dose	Pediatric/ Adolescent (< 16 years): • Not approved for use in children less than 16 years. Adult/Adolescent (≥16 years): • With CYP inhibitor (i.e. protease inhibitors (except TPV), delavirdine, ketoconazole, itraconazole, clarithromycin): 150 mg MCV po BID • Not CYP inducer/inhibitor (i.e. TPV, NVP, T-20, NRTIs): 300 mg MVC po BID • With CYP inducer (i.e. EFV, ETR, rifampin, carbamazepine, phenobarbital, phenytoin) and not taking potent CYP3A inhibitor: 600 mg MVC po BID
How Supplied/ Storage	150 mg and 300 mg film-coated tablets. Store between 15-30℃ in a USP tight container.
Food Restrictions	Take with or without food.
Comments	• CYP450 3A and PGP substrate. **CHECK FOR DRUG INTERACTIONS.** • Must have HIV tropism checked to exclude CXCR4/mixed tropic strain. • Film coated immediate release tablet however no studies regarding stability of split or crushed tablets. (Verbal

	communication, Pfizer, May 2008).

Integrase Inhibitors	
Raltegravir (Isentress®, RAL)	
Dose	Pediatric/Adolescent: Children aged 2 years to less than 12 years of age and at least 10 kg: • Dosing for chewable tablets based on approximately 6 mg/kg/dose po BID - 10 to less than 14 kg: 75 mg twice daily 3 x 25 mg twice daily - 14 to less than 20 kg: 100 mg twice daily 1 x 100 mg twice daily - 20 to less than 28 kg: 150 mg twice daily 1.5 x 100 mg twice daily (divide 100 mg tablet into equal halves) - 28 to less than 40 kg: 200 mg twice daily 2 x 100 mg twice daily - at least 40 kg: 300 mg twice daily 3 x 100 mg twice daily Adult/Pediatrics (≥12 years): • 400 mg RAL film-coated tablet po BID
How Supplied/ Storage	400 mg film-coated tablet. Store at room temperature (15-30℃). 25mg, 100 mg scored chewable tablet (not available yet it in Canada)_
Food Restrictions	Take with or without food
Comments	• Clearance through UGT1A1. **CHECK FOR DRUG INTERACTIONS.** • Crushing film coated tablets not recommended. Granules (sub-units of the tablet) dissolve faster than intact tablets and may result in faster release of drug which could affect in-vivo performance. (Data on file, Merck Frosst, May 2008) • Drug has a bitter taste which is masked by the film coating. • Chewable tablet may be chewed or swallowed whole. • Chewable and film-coated tablets are NOT interchangeable

Footnotes

1. Panel on Antiretroviral Therapy and Medical Management of HIV-Infected Children. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. August 11, 2011. Available at http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/pediatricguidelines.pdf .
2. Contact one of the outpatient pharmacies (UAH or RAH) to initiate the ordering process. For nevirapine, didanosine and stavudine liquids, additional paperwork is required in addition to the special access request forms which are available on the Health Canada website (http://www.hc-sc.gc.ca/dhp-mps/acces/drugs-drogues/sapf1_pasf1-eng.php). Special Access Program ph: 613-941-2108.
3. To obtain the Sustiva liquid, call 1-877-372-7097. The Pediatric Research Nurses should be consulted first since appropriate physician/institution documentation must be in place prior to use of the liquid formulation.
4. AJHP 2000;57:1332-9.

References:

• Panel on Antiretroviral Therapy and Medical Management of HIV-Infected Children. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. August 11, 2011; pp 1-268. Available at http://aidsinfo.nih.gov/ContentFiles/PediatricGuidelines.pdf. Accessed (30 December 2011)

- Panel on Treatment of HIV-Infected Pregnant Women and Prevention of Perinatal Transmission. Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States. September 14, 2011; pp 1-207. Available at http://aidsinfo.nih.gov/ContentFiles/PerinatalGL.pdf. Accessed (30 December 2011) [pages 138 - 140]
- Tseng A, Foisy M. Handbook of HIV Drug Therapy, 2010.
- Raltegravir (Isentress®) USA Product Monograph © 2011
- Tenofovir (Viread®) USA Product Monograph ©, 2012
- Fosamprenavir (Lexiva®) USA Product Monograph © 2012
- Darunavir (Prezista®) USA Product Monograph © 2011
- Etravirine (Intelence®) USA Product Monograph © 2012

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