Table 1: Potential Drug-Drug Interactions Between Medications Commonly Used in Perioperative Management and Antiretroviral Agents (also see drug package inserts)	
Perioperative Medication or Class	**Antiretroviral Medication or Class**
Anesthetics [a]	
Fentanyl	• **All boosted PIs [b]:** Increased fentanyl blood levels possible due to strong inhibition of CYP3A4 with cobicistat and ritonavir. Monitor for fentanyl-related adverse effects, including potentially fatal respiratory depression. • **Bictegravir, cabotegravir (oral or injectable), dolutegravir, raltegravir:** No change in fentanyl level expected. No dose adjustment required. • **Elvitegravir, boosted:** Increased fentanyl blood levels possible due to strong inhibition of CYP3A4 with cobicistat and ritonavir. Monitor for fentanyl efficacy and adverse effects, including potentially fatal respiratory depression. • **Lenacapavir:** Increased fentanyl blood levels possible due to moderate inhibition of CYP3A4. Consider fentanyl dose reduction until the effects of the combination are known; monitor for respiratory depression and sedation.
Lidocaine	• **Atazanavir, unboosted:** Possible increased lidocaine levels due to CYP3A4 inhibition from PI. Consider alternative antiretroviral or antiarrhythmic agents. If coadministered, monitor for antiarrhythmic-related adverse effects. • **All boosted PIs [b]:** Possible increased lidocaine levels due to CYP3A4 inhibition from cobicistat and ritonavir. Do not coadminister. • **Bictegravir, cabotegravir (oral or injectable), dolutegravir, raltegravir:** No interaction expected with lidocaine. No dose adjustment needed. • **Elvitegravir/cobicistat:** Possible increased lidocaine levels due to CYP3A4 inhibition from cobicistat. Do not coadminister. • **Lenacapavir:** Possible increase in serum concentrations of the active metabolite(s) of lidocaine (systemic) due to moderate CYP3A4 inhibition; specifically, concentrations of monoethylglycinexylidide may be increased. Magnitude and clinical significance of this interaction appear greater with oral lidocaine administration compared with other administration routes (i.e., intravenous, intramuscular, inhaled); monitor for increased lidocaine toxicities when oral lidocaine is combined with moderate CYP3A4 inhibitors.
Paralytics and Reversal Agents [c]	
Rocuronium	• **Boosted PIs [b]:** Possible increase in rocuronium bromide levels due to CYP3A4 inhibition from ritonavir and cobicistat. Possible increased risk of myopathy. • **Elvitegravir, boosted:** Possible increase in rocuronium bromide levels due to CYP3A4 inhibition from ritonavir and cobicistat. Possible increased risk of myopathy. • **Lenacapavir:** No interaction expected. No dose adjustment required.
Sedatives	
Haloperidol	See NYSDOH AI Resource: ART Drug-Drug Interactions > Antipsychotics.
Midazolam	• **All boosted PIs [b]:** Increased midazolam levels expected due to CYP3A4 inhibition. – **Oral midazolam:** Contraindicated; do not coadminister with protease inhibitors. – **Parenteral midazolam:** Can be used in a setting with monitoring and appropriate medical management given possible respiratory depression or prolonged sedation. Consider dose reduction, especially if more than a single dose of midazolam is administered. • **Efavirenz:** Increased or decrease levels of midazolam possible due to effects of efavirenz on CYP3A4. Monitor for therapeutic effectiveness and toxicity of midazolam. • **Etravirine:** Decreased levels of midazolam (AUC by 31%) due to CYP3A4 induction from etravirine. Monitor for therapeutic effectiveness of midazolam. • **Rilpivirine (oral or injectable), doravirine:** No interaction expected. No dose adjustment required. • **Bictegravir, cabotegravir (oral or injectable), raltegravir:** No interaction expected. No dose adjustment required. • **Elvitegravir/cobicistat:** Increased midazolam levels expected due to CYP3A4 inhibition. – **Oral midazolam:** Contraindicated; do not coadminister oral midazolam and elvitegravir/cobicistat. – **Parenteral midazolam:** Can be used in a setting with monitoring and appropriate medical management given possible respiratory depression or prolonged sedation. Consider dose reduction, especially if more than a single dose of midazolam is administered. • **Lenacapavir:** Moderate inhibition of CYP3A4 and P-gP potentially increases midazolam levels. Use with caution; monitor for excess sedation.

Table 1: Potential Drug-Drug Interactions Between Medications Commonly Used in Perioperative Management and Antiretroviral Agents (also see drug package inserts)	
Perioperative Medication or Class	**Antiretroviral Medication or Class**
Olanzapine	• **Atazanavir, unboosted; PIs [b] boosted with cobicistat:** No interaction expected. No dose adjustment required. • **PIs boosted with ritonavir:** Decreased olanzapine levels due to CYP450 induction from olanzapine. Monitor for therapeutic effectiveness of olanzapine. • **Doravirine, etravirine, rilpivirine (oral or injectable):** No interaction expected. No dose adjustment required. • **Efavirenz:** Possible reduced olanzapine levels due to CYP3A4 induction from efavirenz. Monitor for therapeutic effectiveness of olanzapine. • **Bictegravir, cabotegravir (oral or injectable), dolutegravir, elvitegravir/cobicistat, raltegravir:** No interaction expected. No dose adjustment required. • **Lenacapavir:** No interaction expected. No dose adjustment required.
Miscellaneous short-acting antipsychotics (risperidone, ziprasidone, quetiapine)	• **All boosted PIs [b]:** Increased antipsychotic levels possible due to CYP3A4 inhibition from ritonavir or cobicistat. – Use lowest initial antipsychotic dose. Monitor for adverse events, including QTc prolongation. – **Quetiapine:** Maximum initial dose of quetiapine 1/6 of standard initial dose. • **Doravirine, rilpivirine (oral or injectable):** No interaction expected. No dose adjustment required. • **Efavirenz, etravirine, nevirapine:** Possible decreased antipsychotic levels due to induction from non-nucleoside reverse transcriptase inhibitors. Monitor for therapeutic effectiveness of antipsychotic. • **Bictegravir, cabotegravir (oral or injectable), raltegravir:** No interaction expected. No dose adjustment required. • **Elvitegravir/cobicistat:** Increased antipsychotic levels expected due to CYP3A4 inhibition with cobicistat. – Use lowest initial antipsychotic dose. Monitor for adverse events, including QTc prolongation. – **Quetiapine:** Maximum initial dose of quetiapine 1/6 of standard initial dose. • **Lenacapavir:** Increased serum concentration of **quetiapine** possible due to moderate CYP3A4 inhibition; monitor for increased quetiapine effects and toxicities, including QTc prolongation.
Miscellaneous, Other	
Ondansetron	No interactions expected. No dose adjustment required.
Acid-reducing agents	See NYSDOH AI Resource: ART Drug-Drug Interactions > Acid-Reducing Agents.
Anticoagulants	See NYSDOH AI Resource: ART Drug-Drug Interactions > Anticoagulants.
Non-opioid analgesics	See NYSDOH AI Resource: ART Drug-Drug Interactions > Nonopioid Pain Medications for potential interactions between NSAIDs and tenofovir disoproxil fumarate.
Opioid analgesics	See NYSDOH AI Resource: ART Drug-Drug Interactions > Opioid Analgesics and Tramadol.

Abbreviations: ART, antiretroviral therapy; AUC, area under the curve; CYP3A4, cytochrome P450 3A4; CYP450, cytochrome P450; FDA, U.S. Food and Drug Administration; NSAID, nonsteroidal anti-inflammatory drug; P-gP, P-glycoprotein; PI, protease inhibitor; QTc, corrected QT interval.

Notes:

a. No drug-drug interactions are expected between propofol or sevoflurane and most antiretroviral (ARV) medications. Because propofol and sevoflurane are associated with QT prolongation risk, there is potential (although unlikely) risk in coadministration with ARV agents that may also be associated with QT prolongation: atazanavir (boosted and unboosted), ritonavir-boosted lopinavir, rilpivirine, and fostemsavir. See prescribing information for individual agents.
b. Currently available FDA-approved PIs: Atazanavir, darunavir, fosamprenavir, ritonavir, saquinavir, tipranavir, ritonavir-boosted lopinavir.
c. No drug-drug interactions are expected between succinylcholine or sugammadex and ARV medications.