

## Pediatric Critical Care Infusions

Drug / Class	Weight	Starting Dose	Usual Dose Range	Titration Time/Dose	Pharmacokinetic Parameters (extrapolated from adults if pediatric data unavailable)	Nursing Implications
<b>Dexmedetomidine (Precedex)</b>  <b>Analgesic/ Sedative</b>	< 50kg	<b>FOR PROCEDURAL SEDATION ONLY:</b> Consider 1-2 mcg/kg/dose bolus over 10 min  <b>Continuous infusion:</b> 0.2-0.5 mcg/kg/hour	0.2-1.5 mcg/kg/hour	Goal SBS to be determined by attending. General recommendation for goal is SBS of 0 to -1  If SBS score is below goal (patient is over sedated), notify physician for possible rate reduction	<b>Onset</b> 5-10 minutes  <b>Duration of Action (Following single dose)</b> 60-120 minutes  <b>Half Life</b> 1.5-2.5 hours	SBS goal to be determined by attending. General guideline for goal is SBS of 0 to -1  Assess pain and sedation scores q 2 hours and PRN  Can lead to hypotension and bradycardia
	≥ 50 kg					
<b>Fentanyl (Sublimaze)</b>  <b>Opioid Analgesic/ Sedative</b>	< 50 kg	<b>Bolus/Loading dose (optional):</b> 0.5-1 mcg/kg/dose  <b>Continuous infusion:</b> 0.5-1 mcg/kg/hour	0.5 – 4 mcg/kg/hour  Usual max dose: 4 mcg/kg/hour	Goal SBS to be determined by attending. General recommendation for goal is SBS of 0 to -1  If more than 3 boluses are required in 60 minutes to maintain patient comfort, notify physician for possible rate increase (general guideline is to increase infusion by 10% - 20%)  If SBS score is below goal (patient is over sedated), notify physician for possible rate reduction	<b>Onset</b> Immediate  <b>Duration of Action (Following single dose)</b> 0.5-1 hour  <b>Half Life</b> Pediatric patients 5 months to 4.5 years: 2.4 hours  Pediatric patients 6 months to 14 years (after long-term continuous infusion): ~21 hours (range: 11-36 hours)	SBS goal to be determined by attending. General guideline for goal is SBS of 0 to -1  Assess pain and sedation scores q 2 hours and PRN  Can lead to hypotension
	≥ 50 kg	<b>Bolus/Loading dose (optional):</b> 25-50 mcg/dose  <b>Continuous infusion:</b> 25-50 mcg/hour	25-250 mcg/hour  Usual max dose: 300 mcg/hour			

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<b>Midazolam</b> (Versed)  <b>Benzodiazepine Sedative/Hypnotic</b>	< 50 kg	<b>Bolus/Loading dose (optional):</b> 0.05-0.1 mg/kg/dose  <b>Continuous infusion:</b> 0.05 - 0.1 mg/kg/hour	0.05 – 0.3 mg/kg/hour  Usual max dose: 0.3 mg/kg/hour	Goal SBS to be determined by attending. General recommendation for goal is SBS of 0 to -1  If more than 3 boluses are required in 60 minutes to maintain patient comfort, notify physician for possible rate increase (general guideline is to increase infusion by 10% - 20%)  If SBS score is below goal (patient is over sedated) notify physician for possible rate reduction	<b>Onset</b> 1-5 minutes  <b>Duration of Action (Following single dose)</b> <2 hours  <b>Half Life</b> 4.5 hours	SBS goal to be determined by attending. General guideline for goal is SBS of 0 to -1  Assess pain and sedation scores q 2 hours and PRN  Can lead to hypotension
	≥ 50 kg	<b>Bolus/Loading dose (optional):</b> 2-4 mg/dose  <b>Continuous infusion:</b> 1-2 mg/hour	1-20 mg/hour  Usual max dose: 20 mg/hour			
<b>Epinephrine</b> (Adrenalin)  <b>Catecholamine Vasopressor</b>	< 50 kg	<b>Continuous Infusion:</b> 0.03-0.05 mcg/kg/min	0.03-0.5 mcg/kg/min  Usual max dose: 1 mcg/kg/min  Doses above 0.15 mcg/kg/min should be ordered by an attending physician. Consider adding a second vasoactive medication at those doses	Titrate by 0.01 – 0.02 mcg/kg/min q 5 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc	<b>Onset</b> 1-2 minutes  <b>Duration of Action</b> 1-2 minutes  <b>Half Life</b> <5 minutes	Monitor blood pressure, heart rate, urine output, and peripheral perfusion.  Can lead to hypertension, tachyarrhythmia, and peripheral ischemia  Observe IV site closely for blanching and infiltration  Central line preferred
	≥ 50 kg	<b>Continuous Infusion:</b> 1-3 mcg/min	1-20 mcg/min  Usual max dose: 199 mcg/min  Doses above 20 mcg/min should be ordered by an attending physician. Consider adding a second vasoactive medication at those doses	Titrate by 1-10 mcg/min q 5 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc		

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<b>Norepinephrine</b> (Levophed)  <b>Catecholamine Vasopressor</b>	< 50 kg	<b>Continuous Infusion:</b> 0.03-0.05 mcg/kg/min	0.03-0.5 mcg/kg/min  Usual max dose: 1 mcg/kg/min  Doses above 0.15 mcg/kg/min should be ordered by an attending physician. Consider adding a second vasoactive medication at those doses	Titrate by 0.01 – 0.02 mcg/kg/min q 5 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc	<b>Onset</b> Rapid  <b>Duration of Action</b> 1-2 minutes	Monitor blood pressure, heart rate, urine output, and peripheral perfusion.  Can lead to hypertension, tachyarrhythmia, and peripheral ischemia  Observe IV site closely for blanching and infiltration  Central line preferred
	≥ 50 kg	<b>Continuous Infusion:</b> 1-3 mcg/min	1-20 mcg/min  Usual max dose: 199 mcg/min  Doses above 15 mcg/min should be ordered by an attending physician. Consider adding a second vasoactive medication at those doses	Titrate by 1-10 mcg/min q 5 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc		
<b>Dopamine</b> (Intropin)  <b>Catecholamine Vasopressor</b>	< 50 kg	<b>Continuous Infusion:</b> 5-10 mcg/kg/min	2.5-20 mcg/kg/min  Usual max dose: 20 mcg/kg/min	Titrate by 2.5-5 mcg/kg/min q 10 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc	<b>Onset</b> Within 5 minutes  <b>Duration of Action</b> <10 minutes  <b>Half Life</b> 2 minutes	Monitor blood pressure, heart rate, urine output, and peripheral perfusion.  Can lead to hypertension, tachyarrhythmia, and peripheral ischemia  Observe IV site closely for blanching and infiltration  Central line preferred
	≥ 50 kg					

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<b>Vasopressin</b> (Vasopressin) - FOR SHOCK ONLY  <b>Antidiuretic                      Hormone Analog/                      Vasopressor</b>	< 50 kg	<b>Continuous Infusion:</b> 0.5 milliunit/kg/min	0.5-2 milliunit/kg/min  Usual max dose: 40 milliunit/min	Titrate by 0.25-0.5 milliunit/kg/min q 15 min to maintain goal MAP, SBP, or DBP  Obtain goal MAP, SBP, or DBP from prescriber prior to initiation/ titration of infusion  *Will need to correlate with other signs of improved perfusion such as cap refill time, urine output, etc	<b>Onset</b> 15 minutes  <b>Duration of Action</b> 20 minutes  <b>Half Life</b> ≤10 minutes	Monitor blood pressure, heart rate, urine output, and peripheral perfusion.  Monitor blood pressure, heart rate, urine output, and peripheral perfusion. Can lead to hypertension and peripheral ischemia  Observe IV site closely for blanching and infiltration  Central line preferred
	≥ 50 kg	<b>Continuous Infusion:</b> 0.03 unit/min	0.03-0.04 unit/min  Usual max dose: 0.1 unit/min	N/A		

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