

Baxter and Medfusion IV Pump and IV Medication Restriction in Patient Care Areas

Policy Update Brief: August 25, 2026

Why, How, What, & Who



“Why” behind the “what” of the presented topic?

- HCA Healthcare East Florida’s standardized drug libraries for all Medfusion and Baxter IV Pumps by newly defined named Clinical Care Areas
- Standardization of medication concentration and dosage
- Alignment of IV Pump libraries with the new Medication Restriction in Patient Care Areas Policy
- Go-Live 8/25/2026



What feedback and/or decisions are needed?

- Please reach out with questions and feedback.



What actions are you asking the audience to take?

- ❖ Audience: Nursing/LPN/Pharmacist, Medical Staff.
- ❖ Exercise caution when selecting the appropriate care area
- ❖ Ensure alignment level of care with ordered IV infusion, dosage, and monitoring requirements
- ❖ Review Medication Restriction in Patient Care Areas Policy on Policy Stat



Who is the point of contact?

- Pharmacy Team
- HHCCA East Florida Team (Educator)

IV Pump Library Update: Go-live 8/25/2026

Changes:

- Medications will be **available only in specific Clinical Care Areas based on clinical practice**
- Alignment with HCA Healthcare's standard naming of Clinical Care Area
- Standardization of medication concentration and dosage units, for example, 1gm to 1000mg
- Alignment of IV Medication Restriction in with standardized Clinical Care Areas

CALLOUT:

Become familiar with the **new Clinical Care Area layout** for the **Baxter** and **Medfusion IV Pumps** to efficiently locate medications in the pump library prior to administration
The PCU Library is found under the Adult CC/ED - Refer to the Medication Restriction in Patient Care Areas Policy on Policy Stat for facility specific restrictions

Current EFD Care Areas	NEW Corporate Standardized Clinical Care Areas	Designated Clinical Units
Anesthesia	Anesthesia	Anesthesia
ED	Adult CC/ED	ED
ICU/CABG		ICU/CABG
STEP DOWN		Stepdown
PACU		PACU
Oncology		Oncology
	Adult Onc, Infusion, TPX	Outpatient
MED SURG	Adult Med Surg	Med Surg
		Telemetry
		Outpatient
Neonatal ICU	NICU/Nursery	Neonatal ICU
OB-GYN	L&D/OB	OB-GYN
PEDS 1-49kg	Peds Med Surg	PEDS 1-49kg
PEDS 50-99kg		PEDS 50-99kg
PICU/ER 1-49kg	Peds Crit Care/ED	PICU/ER 1-49kg
PICU/ER 50-99kg		PICU/ER 50-99kg
Rad/SPEC PR	Cath Lab/SP. Procedures	CathLab
Cath Lab		RADSPEC PR
	Respiratory	
	Peds Onc. Infus, TXP	

Medication Restrictions in Patient Care Areas

WHY

Administration and monitoring of certain medications will be restricted to patient care areas to foster a culture that supports patient safety, consistent with the requirements of TJC, CMS, and other regulatory agencies.

WHO

Nursing/Pharmacist/Medical Staff

HOW

Medications restricted by unit:

- Medications listed in the policy may only be given in the defined patient care areas. Medications ordered that are not included in the policy or not approved for the specific area will be discussed with the nursing manager, pharmacist and physician to determine appropriate action.
- Any medication can be given in any area under the direct supervision of a physician (i.e. code situation).

Medications allowed for direct infusion:

- The policy lists which medications may be given by direct IV infusion with the recommended infusion rate and further dilution if required
- The use of infusion pumps is strongly encouraged for any infusion rate longer than 5 minutes.
- If a medication is ordered that is not in the policy or at a rate or dilution different than the table, the pharmacist shall be contacted for further guidance.

TIPS

- Implementation is successful within a culture that promotes teamwork and where all individuals feel empowered to ensure patient safety.
- The listed areas defined in the policy required level of care rather than a specific patient location.
- The medication list will be reviewed and updated periodically as new information becomes available.

<Insert Facility name>

DEPARTMENT: Pharmacy Services

POLICY DESCRIPTION: Medication Restrictions in Patient Care Areas

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REPLACES POLICY DATED:

EFFECTIVE DATE:

REFERENCE NUMBER:

SCOPE:

Nursing/LPN/Pharmacist, Respiratory Therapists, Medical staff

PURPOSE:

Implementation is successful within a culture that promotes teamwork and where all individuals feel empowered to ensure patient safety.

POLICY:

It is our policy that the administration and monitoring of certain medications will be restricted to patient care areas to foster a culture that supports patient safety, consistent with the requirements of TJC, CMS, and other regulatory agencies.

To assure that specific medications are administered under appropriate monitoring and by qualified and trained personnel within the scope of practice. Any medication may be given in any area under the direct supervision of a physician. Medications as defined in this policy may only be given in specified patient care areas. Only medications as defined in this policy may be given by direct IV infusion. *Medications not listed or orders outside of parameters listed will be discussed with the physician, nursing manager and pharmacist to determine appropriate scope of practice.*

PROCEDURE:

A list of medications with specific restrictions as to areas in which they may be administered will be maintained with this policy. This is not to restrict use of any medication during emergency and/or code blue situations but continuation of any restricted drug may occur only in designated areas and by qualified and trained personnel. These locations described in this policy are intended to define the level of care, not necessarily the specific location in which a patient must be located. This listing of medications will be reviewed periodically as new data is available.

Medications restricted by unit:

1. Medications listed in this table may only be given in the defined patient care areas. Medications ordered that are not included in this list or not approved for the specific area will be discussed with the nursing manager, pharmacist and physician to determine appropriate action.
2. Any medication can be given in any area under the direct supervision of a physician (as in a code situation).

Medications allowed for direct infusion:

1. The table lists which medications may be given by direct IV infusion with the recommended infusion rate and further dilution if required
2. The use of infusion pumps is strongly encouraged for any infusion rate longer than 5 minutes.
3. If a medication is ordered that is not in the table or at a rate or dilution different than the table, the pharmacist shall be contacted for further guidance.

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(Note: X in the box designates medication can be administered)

Medication	Rate of Administration	Adult CC/ED	Anesthesia	Cath Lab/ Sp. Procedure	Adult Med Surg	L&D/OB
Acetazolamide (Diamox)	IV, 2 minutes	X	X		X *Not for Inpatient Rehab	
Acetylcysteine (Acetadote)	IVPB or drip ONLY	X	X		X (non-OD indication)	
Adenosine	IV, 1 – 2 seconds (no slower)	X	X	X		
Alteplase (TPA) for stroke/PE	IV Bolus over 1 minute <i>for stroke</i>	X *Not for Step Down	X	Specials		
Alteplase (TPA) for peripheral occlusion	IVPB or drip ONLY	X *Not for Step Down	X	Specials		
Aminocaproic Acid (Amicar)	IVPB or drip ONLY	X	X	X	X *Not for Inpatient Rehab	X
Aminophylline	IVPB or drip ONLY	X	X	X		
Amiodarone (Cordarone)	IV Drip	X	X	X		
Anti-venin	DO NOT GIVE IV PUSH	X *Not for Step Down				
Argatroban	IV drip ONLY	X	X	X	X *Not for Inpatient Rehab	X
Atropine	IV Push 1- 2 seconds (no slower).	X	X	X	X	X
					(Med Tele Only)	
Bivalirudin	IV drip ONLY	ICU only	X	X		X
Bumetanide (Bumex)	IV, 1 – 2 minutes	X	X	X		X
Bumetanide DRIP	IV Drip	X	X	X		X
Butorphanol (Stadol)	IV, 2 mg over 3–5 minutes	X	X	X	X	X
Parenteral Chemotherapy	See separate chemo policy					
Calcium Chloride	IV, 5 – 10 min (1 mL/min)	X *Not for Step Down	X	X		
Calcium gluconate	IV, 5 – 10 min	X	X	X	IVPB	X
Chlorpromazine (Thorazine)	IV, Dilute to 1mg/mL at 1mg/minute	X	X	X	X	X
Cisatracurium	IV bolus and drip	X *Not for Step Down	X	X		
Cosyntropin (Cortrosyn)	IV, 2 minutes	X	X		X	

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Desmopressin (DDAVP)	IV, 1 minute	X	X	X	X	
Dexamethasone	IV, 1 minute (doses > 10 mg should be given IVPB)	X	X	X	X	X
Dexmedetomidine	IV Drip only	X *Not for Step Down	X	X		
Dextrose 10%	Continuous infusion/Persistent hypoglycemia	X	X	X	X	X
Dextrose 10%	As PN bridge/replacement	X	X	X	X	X
Dextrose 25 – 50%	IV, 3 mL per minute	X	X	X	X	X
Diazepam (Valium)	IV, 5 mg per minute	X	X	X	X	
Digibind/Digifab	IVPB ONLY	X				
Digoxin (Lanoxin)	IV, 5 minutes	X	X	X	X (no loading dose) *Not for Inpatient Rehab	
Diltiazem (Cardizem)	IV Bolus over 2 minutes, IV Drip	X	X	X	No restriction for IV push administration.	X
Diphenhydramine (Benadryl)	IV Push or IVPB, NTE 25 mg per minute	X	X	X	X	X
Dobutamine (Dobutrex)	IV DRIP ONLY	X Titration not allowed outside of ICU/ED/PACU *10 mcg/kg/min max in Step Down	X	X		
Dopamine	IV DRIP ONLY	X Titration not allowed outside of ICU/ED/PACU *5 mcg/kg/min max in Step Down	X	X		
DroPERidol	IV Push/IM	ED Only (Restricted to psychosis-induced aggression or agitation)				
Ethacrynic Acid (Edecrin)	IVPB or drip ONLY	X	X			

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Enalaprilat (Vasotec)	IV, 5 minutes	X	X	X	X	
Ephedrine	IV, 10 mg over 1 minute	X *Not for Step Down	X	X		
EpiNEPHrine (Adrenalin)	IV Drip	X *Not for Step Down	X	X		
Epoprostenol (Flolan)	IV Drip	X *Not for Step Down	X	X		
Epoprostenol (Veletri)	INH Syringe (RESP only)	X *Not for Step Down	X	X		
Epoprostenol	SubQ Pump**	X	X	X		
Eptifibatide (Integrilin) push/drip	IV, Bolus dose over 1 – 2 minutes	X	X	X		
Erythropoietin (Epogen, Procrit)	IV, 1 minute	X	X		X	
Esmolol (Brevibloc)	IV drip ONLY	X *Not for Step Down	X	X		
Estrogen (Premarin)	IV, 10 mg/minute	X	X		X	X
Fat Emulsion (Liposyn)	IV drip ONLY	X	X	X	X	X
Fentanyl	IV, Over 2 minutes for procedural sedation/analgesia.	X *Not for Step Down	X	X		**L&D Administration: Pushes only; Epidurals only by anesthesia provider
Fentanyl Drip	IV Drip	X *Not for Step Down	X	X		
Flumazenil (Romazicon)	IV, 15 – 30 seconds	X	X	X	X	X
Furosemide (Lasix)	IV, 40 mg per minute	X	X	X	X	X
Furosemide (Lasix) Drip	IV Drip	X	X	X	X	
Glucagon BOLUS	IV, 2 – 5 minutes	X	X	X	X	X
Glucagon Drip	IV Drip	X *Not for Step Down	X	X		
Haloperidol (Haldol)	IV Push, 5 – 10 minutes	X	X	X	X *Not for Inpatient Rehab	
Heparin drip	IV Bolus dose over 1 minute	X	X	X	X	X

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Medication	Rate of Administration	Adult CC/ED	Anesthesia	Cath Lab/ Sp. Procedure	Adult Med Surg	L&D/OB
HydrALAZine (Apresoline)	IV Push, 3 – 5 minutes, NTE 5 mg per minute	X	X	X	X	X
Hydrocortisone (Solu-cortef)	1 minute, doses over 100 mg should be IVPB	X	X	X	X	
Hydromorphone (Dilaudid)	IV Push, 2 – 5 minutes, dilute to 5 mL prior to administration	X	X	X	X	X
Hydromorphone DRIP	IV Drip	X *Not for Step Down	X			
Hydromorphone PCA	PCA	X	X	X	X	X
Ibutilide (Corvert)	IV, 10 minutes (*see EHR or call pharmacy for most updated requirements for administration)	X * For Step Down, only in Cardiac Step Down. *Has to be 1:1 nursing ratio during infusion	X	X		
Immune Globulin (IVIG)	IV drip ONLY	X			X	X
Infliximab (Remicade)	IV drip ONLY	X			X	
Insulin IV push	IV Push, NTE 50 units/minute	X	X	X	X *Not for Inpatient Rehab	X
Insulin Drip	IV Drip	X *Not for Step Down	X			
Isoproterenol (Isuprel)	IV drip ONLY	X *Not for Step Down	X	X		
Ketamine	IV drip and push	X *Not for Step Down	X	X		
Ketorolac (Toradol)	IV Push, at least 15 seconds	X	X	X	X	X
Labetalol IV Push (Trandate)	IV Push, 2 minutes	X	X	X	X *Not for Inpatient Rehab	
Labetalol DRIP	IV Drip	X *Not for Step Down	X	X		
Lidocaine	IV Drip, 25 – 50 mg per minute	X	X	X		X
Lorazepam (Ativan) IV Push	IV Push, NTE 2 mg per minute, dilute with equal volume	X	X	X	X	X

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Lorazepam (Ativan) Drip	IV Drip	X *Not for Step Down	X			
Magnesium	IVPB	X	X	X	X (RATE must be ≤1g/hr)	X
Mannitol	IV, over 15 minutes	X *Not for Step Down	X	X		X
Methylergonavine (Methergine)	IV, over 1 minute	X *Not for Step Down	X			X
Methyprednisolone (Solu-medrol)	< 125 mg over 3 – 15 minutes, > 125 mg IVPB	X	X	X	X	X
Metoclopramide (Reglan)	1 – 2 minutes, doses > 10mg should be IVPB	X	X	X	X	X
Metoprolol (Lopressor)	IV Push, 5 mg/min	X	X	X	X *Not for Inpatient Rehab	X
Midazolam (Versed) Drip	IV Drip	X *Not for Step Down	X	X		
Milrinone (Primacor) push/drip	IVPB or Drip ONLY	X Titration not allowed outside of ICU/ED/PACU	X	X		
Morphine Drip	IV Drip	X *Not for Step Down	X	X		
Morphine PCA	PCA	X	X	X	X	X
Naloxone (Narcan) Drip	IV Drip	X *Not for Step Down				**L&D Administration: no restrictions for bolus doses. Low-dose naloxone drips for post-spinal itching are approved for use in the instance of a nalbuphine shortage.
Nicardipine IV (Cardene)	IV Drip	X *Not for Step Down	X	X		X
Nitroglycerin (Tridil)	IV Drip	X (40 mcg/min max in Step Down)	X	X		
Nitroprusside (Nipride)	IV Drip	X *Not for Step Down	X	X		

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Medication	Rate of Administration	Adult CC/ED	Anesthesia	Cath Lab/ Sp. Procedure	Adult Med Surg	L&D/OB
Norepinephrine (Levophed)	IV Drip	X *Not for Step Down	X	X		
Octreotide (Sandostatin)	IV Push or IVPB, 3 minutes	X	X	X	X	
Oxytocin (Pitocin)	IV Drip ONLY	X *Not for Step Down	X			X
Pentobarbital Drip	IV Drip	X *Not for Step Down	X			
Phenobarbital	IV, 60 – 100 mg minute	X	X			
Phenobarbital Drip	IV Drip	X *Not for Step Down	X			
Phenylephrine	IV Drip	X	X	X		
(Neo-Synephrine)		*Not for Step Down				
Phenytoin IV (Dilantin)	IV, 50 mg/min, doses over 100 mg should be IVPB	X	X	X	X *<200mg doses in Inpatient Rehab	X
Potassium Chloride/Phosphate	See separate policy	X	X	X	X	X
Procainamide (Pronestyl)	IV, 20 mg/minute	X	X	X		
Propofol (Diprivan) <i>Pt must be mechanically ventilated</i>	IV Drip ONLY (outside of anesthesia use)	X *Not for Step Down	X	X		
Propranolol (Inderal)	IV Push, 1 mg/minute	X	X	X		
Protamine	IV Push or IVPB, 5 mg/minute	X	X	X	X	X
Remifentanyl		ICU Only	X			
Rocuronium (Zemuron)	IV Push, 30 seconds	X *Not for Step Down	X			
Sodium Bicarbonate	IV Drip	X	X	X	X (chemo pts only)	
Sodium Chloride 3%	Drip ONLY	X				
Succinylcholine (Anectine)	30 seconds	X *Not for Step Down	X	X		
Tenecteplase (TNK)	5 seconds	X *Not for Step Down	X	X		
Terbutaline (Brethine)	Drip	X *Not for Step Down	X			X

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Medication	Rate of Administration	Adult CC/ED	Anesthesia	Cath Lab/ Sp. Procedure	Adult Med Surg	L&D/OB
Tirofiban (Aggrastat) push/drip	Bolus over 1 minute	X	X	X		
Torsemide (Demadex)	IV Push, 2 minutes	X	X	X		
Treprostinil (Remodulin)	IV Drip	X *Not for Step Down	X	X		
Treprostinil (Remodulin)	SubQ Pump**	X	X	X		
Vasopressin (Pitressin)	IV, 30 seconds	X *Not for Step Down	X	X		
Vecuronium (Norcuron)	IV Push	X *Not for Step Down	X	X		
Verapamil (Isoptin)	IV, 2 – 3 minutes	X	X	X		

**SubQ Pump to be treated as patient's own med

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PEDIATRIC LEVEL 1 (Pedi 1) General Pediatric Nursing units when patient is not on continuous cardiac monitoring
Pediatric Level 1 units may administer Pedi 1 medications

PEDIATRIC LEVEL 2 (Pedi 2) **Monitored Bed: when patient on continuous cardiac monitoring**
Pediatric Level 2 units may administer Pedi 1 and Pedi 2 medications

PEDIATRIC LEVEL 3 (Pedi 3) Monitored Bed Nursing Unit- **CHEMO**
Pediatric Level 3 unit may administer Pedi 1, Pedi 2, and Pedi 3 medications

PEDIATRIC LEVEL 4 (Pedi 4) **Life Support Nursing Units: units equipped to provide continuous cardiac monitoring and ventilator Support.** (ED, Cardiac ICU, PICU, NICU, OR, PACU, Rapid Response/Code Blue Situations in any area with Pediatric Critical Care RN present)
Pediatric Level 4 units may administer Pedi 1, Pedi 2, Pedi 3, and Pedi 4 medications.

Continuous Infusion	Dose Range	Standard Concentration & Access*	Required Level of Care	Monitoring Parameters
Alprostadil (PROSTIN)	0.01 – 0.4 mcg/kg/minute	10 & 20 mcg/mL ☒ C	Pedi 4	Vital signs, gastric obstruction
Alteplase (ACTIVASE)	0.1 - 0.8 mg/kg/hr	1 mg/mL ☒ C	Pedi 4	Stroke/PE protocol paparmeters & bleeding
Aminophylline	0.5 – 1.5 mg/kg/hour	5 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, blood gases, peak and trough theophylline concentrations
Amiodarone (CORDARONE)	10 – 20 mg/kg/day Max 2200 mg/day	1.8 mg/mL ☒ C (preferred) ☒ P	Pedi 2	Vital signs, ECG, chest X-ray, pulmonary function tests, thyroid function tests, electrolytes, liver function, ophthalmologic exams
Argatroban	1-20 mcg/kg/min	1 mg/mL ☒ C	Pedi 3	liver function, bleeding
Bumetanide (BUMEX)	0.001 – 0.2 mg/kg/hour	0.1 & 0.25 mg/mL ☒ C ☒ P	Pedi 1	Electrolytes, vital signs, renal function, ophthalmologic exams
Calcium chloride	20 – 50 mg/kg/hour	20 mg/mL ☒ C (preferred) ☒ P	Pedi 4	Electrolytes, vital signs, ECG
Calcium gluconate	2 – 20 mg/kg/hour	50 & 100 mg/mL ☒ C (preferred) ☒ P	Pedi 4	Electrolytes, vital signs, ECG
Cisatracurium (NIMBEX)	0.1 – 0.3 mg/kg/hour	0.4 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, TOF
Dexmedetomidine (PRECEDEX)	0.1 – 2.5 mcg/kg/hour	4 & 20 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, ECG, sedation
Dobutamine	0.5 – 20 mcg/kg/minute	1000 & 2000 mcg/mL ☒ C	Pedi 4	Vital signs, ECG
Dopamine	1 – 20 mcg/kg/minute	800 & 1600 mcg/mL ☒ C	Pedi 4	Vital signs, ECG, renal function
Epinephrine (ADRENALIN)	0.05 – 2.6 mcg/kg/minute	20 & 100 mcg/mL ☒ C	Pedi 4	Vital signs, ECG
Epoprostenol (VELETRI)	1 – 150 ng/kg/minute	3 & 15 mcg/mL ☒ C	Pedi 4	Pulmonary function, vital signs
Treprostinil (Remodulin)	0.624-80 ng/kg/minute	2 mcg/mL ☒ C	Pedi 4	Pulmonary function, vital signs
Esmolol (BREVIBLOC)	50 – 1000 mcg/kg/minute	10 mg/mL ☒ C	Pedi 4	Vital signs, ECG, electrolytes
Fat Emulsion (Plant Based) (INTRALIPID)	0.5 – 3 g/kg/day	20% (20 g/100 mL) ☒ C ☒ P	Pedi 1	Liver function, renal function, triglycerides, electrolytes
Fentanyl (SUBLIMAZE)	1 – 20 mcg/kg/hour	5, 10 & 50 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, pain, bowel frequency
Furosemide (LASIX)	0.1 – 0.5 mg/kg/hour	2 & 10mg/mL ☒ C ☒ P	Pedi 4	Renal function, electrolytes, weight
Glucagon (GLUCAGEN)	0.005-0.3 mg/kg/hr	100 & 500 mcg/mL ☒ C ☒ P	Pedi 4	Glucose, vital signs, ECG
Heparin	1 – 55 units/kg/hour	50 units/mL ☒ C ☒ P	Pedi 4	CBC, aPTT, ACT
Hydromorphone (DILAUDID)	0.003 – 0.14 mg/kg/hour	0.2 & 1 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, pain, bowel frequency
Insulin Regular (HUMULIN R)	0.01 – 0.2 units/kg/hour	0.2, 0.5 & 1 units/mL ☒ C ☒ P	Pedi 4	Glucose, HbA1c, electrolytes
Isoproterenol (ISUPREL)	0.05 – 2 mcg/kg/minute	20 & 64 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, blood gases, ECG, renal function, cardiac enzymes
Ketamine (KETALAR)	0.3 – 3.6 mg/kg/hour	2 & 10 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, sedation
Labetalol (TRANDATE)	0.2 - 4 mg/kg/hr	1 mg/mL ☒ C ☒ P	Pedi 2	Vital signs
Lidocaine (XYLOCAINE)	20 – 50 mcg/kg/minute	4000 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, ECG, injection site reactions, electroencephalogram (EEG)
LORazepam (ATIVAN)	0.05 -0.9 mg/kg/hr	0.2 mg/mL ☒ C ☒ P	Pedi 2	Vital signs, CBC, renal function, sedation
Midazolam (VERSED)	0.02 – 2 mg/kg/hour	0.5 & 1 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, sedation
Milrinone (PRIMACOR)	0.25 – 1 mcg/kg/minute	200 mcg/mL ☒ C (preferred) ☒ P	Pedi 4	Vital signs, ECG, electrolytes, renal function, platelets

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Continuous Infusion	Dose Range	Standard Concentration & Access*	Required Level of Care	Monitoring Parameters
Morphine (DURAMORPH)	0.005 – 2.6 mg/kg/hour	0.04 & 0.1 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, pain, bowel frequency
Naloxone (NARCAN)	2.5 – 160 mcg/kg/hour	8 & 40 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, temperature, arterial blood gas, level of consciousness
Nicardipine (CARDENE)	0.5 – 5 mcg/kg/minute	0.1 & 0.2 mg/mL ☒ C (preferred) ☒ P	Pedi 4	Vital signs, liver function, renal function, injection site reactions
Nitroglycerin	0.5 - 6 mcg/kg/min	200 mcg/mL ☒ P	Pedi 4	Vital signs
NitroPRUSside (NITROPRESS)	0.2 -10 mcg/kg/min	125 & 400 mcg/mL ☒ C	Pedi 4	Vital signs
Norepinephrine (LEVOPHED)	0.1 – 7.1 mcg/kg/minute	16 & 32 mcg/mL ☒ C	Pedi 4	Vital signs, ECG
Octreotide (SANDOSTATIN)	0.5 – 15 mcg/kg/hour	10 mcg/mL ☒ C ☒ P	Pedi 4	Vital signs, electrolytes, glucose, growth parameters
Pentobarbital (NEMBUTAL)	1 – 6 mg/kg/hour	8 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, CNS status, CBC, renal function, liver function
Phenylephrine (NEO-SYNEPHRINE)	0.1 – 5 mcg/kg/minute	60 & 100 mcg/mL ☒ C	Pedi 4	Vital signs, central venous pressure, blood gases
Procainamide	20 – 80 mcg/kg/minute	4 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, ECG, CBC, renal function, serum concentrations
Propofol	40 -360 mcg/kg/min	10 mg/mL ☒ C (preferred) ☒ P	Pedi 4	Vital signs and level of consciousness
ROCuronium (ZEMURON)	0.2 - 1.5 mg/kg/hr	5 & 10 mg/mL ☒ C	Pedi 4	Vital signs, TOF
Sildenafil (REVATIO)	0.015 – 0.45 mg/kg/hour	0.8 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, oxygen saturation
Sodium Bicarbonate Sodium Acetate	1 – 4 mEq/kg/hour	0.5 & 1 mEq/mL ☒ C ☒ P	Pedi 4	Electrolytes, blood gases
Sodium Chloride 3%	0.1 – 2.5 mL/kg/hour	0.5 mEq/mL ☒ C (preferred) ☒ P	Pedi 4	Renal function, electrolytes, serum osmolality , vital signs, ICP
Terbutaline (BRETHINE)	0.2 – 5 mcg/kg/minute	1 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, ECG, blood gases
Vasopressin (DI) (VASOSTRICT)	0.3 - 10 milliUNIT/kg/HOUR Diabetes Insipidus and Organ Donation	0.05 UNIT/mL ☒ C	Pedi 4	Vital signs, renal function, CBC
Vasopressin (SHOCK) Vasopressin (VASOSTRICT)	0.5 - 10 milliUNIT/kg/minute Shock	0.2 & 1 UNIT/mL ☒ C	Pedi 4	Vital signs, renal function, CBC
Vecuronium (NORCURON)	0.05 – 0.18 mg/kg/hour	0.2 & 1 mg/mL ☒ C ☒ P	Pedi 4	Vital signs, TOF

Chemotherapeutic Agent	Dose Range	Standard Concentration & Access*	Required Level of Care	Monitoring Parameters
Bleomycin	5 - 15 units/m ²	3 units/mL ☒ C	Pedi 3	LFT, SCr, Baseline and Periodic PFTs
Cyclophosphamide	200 - 500 mg/m ²	20 mg/mL ☒ C	Pedi 3	SCr, CBC, Chest X-Ray and/or PFTs for new or worsening pulmonary symptoms
Cytarabine (HIGH)	500 - 3000 mg/m ²	100 mg/mL ☒ C	Pedi 3	LFT, SCr, CBC
Cytarabine (LOW)	20 - 220 mg/m ²	50 mg/mL ☒ C	Pedi 3	LFT, SCr, CBC
DACTINomycin	400 - 2000 mcg/m ²	0.5 mg/mL ☒ C	Pedi 3	LFT, CBC
DAUNOrubicin	6.6 - 65 mg/m ²	Variable 0.5 - 5 mg/mL ☒ C	Pedi 3	LFT, CBC, SCr, LVEF, ECG
DOXOrubicin	5 - 90 mg/m ²	2 mg/mL ☒ C	Pedi 3	LFT, CBC, LVEF, ECG
Methotrexate	10 - 500 mg/m ²	25 mg/mL ☒ C	Pedi 3	LFT, CBC, SCr, Chest X-Ray and/or PFTs for new or worsening pulmonary symptoms
MitoXANTRONE	0.5 - 14 mg/m ²	Variable 0.002 - 0.4 mg/mL ☒ C	Pedi 3	LFT, CBC, BP, SCr, LVEF

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IV Medications	Dose Range & Max Dose	Infusion Duration	Required Level of Care	Monitoring Parameters
Acetaminophen (OFIRMEV)	7 – 15 mg/kg/dose Max 1000 mg/dose	15 minutes	Pedi 1	Liver function
Acetazolamide (DIAMOX)	3 – 10 mg/kg/dose Max 500 mg/dose	15 minutes	Pedi 1	Electrolytes, blood gas
Acyclovir (ZOVIRAX)	9 – 20 mg/kg/dose	1 hour	Pedi 1	Renal function, liver function, complete blood count (CBC)
Adenosine (ADENOCARD)	0.1 – 0.3 mg/kg/dose Max 12 mg/dose	1 – 2 seconds	Pedi 4	Vital signs, continuous electrocardiogram (ECG)
Albumin	0.5 – 1 g/kg/dose Max 25 g/dose	5%: max 10 mL/min 25%: max 3 mL/min	Pedi 1	Vital signs, fluid status
Alteplase (CATHflo)	0.5 – 2 mg/dose	Instill for 30 – 60 minutes then aspirate	Pedi 1	Bleeding
Aminocaproic Acid (AMICAR)	40 – 100 mg/kg/dose	15 – 60 minutes	Pedi 4	Renal function, bleeding
Amikacin	7.5 – 30 mg/kg/dose	30 – 120 minutes	Pedi 1	Renal function, peak and trough concentrations, ophthalmologic exams
Aminophylline	1.5 – 8 mg/kg/dose	15 – 30 minutes	Pedi 4	Vital signs, blood gases, peak and trough theophylline concentrations
Amiodarone (CORDARONE)	1 – 5 mg/kg/dose Max 300 mg/dose	20 – 60 minutes	Pedi 4	Vital signs, ECG, chest X-ray, pulmonary function tests, thyroid function tests, electrolytes, liver function, ophthalmologic exams
Amphotericin B (FUNGIZONE/AMBISOME)	Conventional: 0.5 – 1.5 mg/kg/dose Liposomal: 2 – 7 mg/kg/dose	Conventional: 2 – 6 hours Liposomal: 1 – 2 hours	Pedi 1	Renal function, liver function, electrolytes, CBC, vital signs
Ampicillin	25 – 100 mg/kg/dose Max 2000 mg/dose	10 – 15 minutes	Pedi 1	Renal function, liver function, bowel frequency
Ampicillin/Sulbactam (UNASYN)	33 – 100 mg ampicillin/kg/dose Max 2000 mg/dose	10 – 30 minutes	Pedi 1	Renal function, liver function, bowel frequency
Atropine (ATROPEN)	0.02 mg/kg/dose Min 0.1 mg/dose Max 1 mg/dose	1 – 2 seconds	Pedi 4	Vital signs
Azithromycin (ZITHROMAX)	5 – 20 mg/kg/dose Max 500 mg/dose	1 hour	Pedi 1	Liver function, CBC, bowel frequency
Aztreonam (AZACTAM)	30 – 75 mg/kg/dose Max 3000 mg/dose	20 – 60 minutes	Pedi 1	Renal function, liver function, bowel frequency
Bumetanide (BUMEX)	0.01 – 0.1 mg/kg/dose Max 2 mg/dose	5 minutes	Pedi 1	Electrolytes, vital signs, renal function, ophthalmologic exams
Caffeine (CAFCIT)	5 – 80 mg/kg/dose 10 – 20 mg/kg/dose Max 2000 mg/dose	10 – 30 minutes	Pedi 1	Apnea spells, vital signs, caffeine concentration
Calcium chloride	50 – 200 mg/kg/dose Max 3000 mg/dose	3 – 5 minutes	Pedi 2	Electrolytes, vital signs, ECG
Calcium gluconate	50 – 200 mg/kg/dose Max 3000 mg/dose	5 – 10 minutes	Pedi 2	Electrolytes, vital signs, ECG
Cefazolin (ANCEF)	17 – 50 mg/kg/dose Max 2000 mg/dose	3 – 60 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Cefepime (MAXIPIME)	30 – 50 mg/kg/dose Max 2000 mg/dose	3 – 30 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Ceftazidime (FORTAZ, TAZICEF)	30 – 50 mg/kg/dose Max 2000 mg/dose	3 – 30 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Ceftriaxone (ROCEPHIN)	25 – 100 mg/kg/dose Max 2000 mg/dose	2 – 60 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Cefuroxime (CEFTIN, ZINACEF)	25 – 50 mg/kg/dose Max 1500 mg/dose	3 – 30 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Chlorothiazide (DIURIL)	2.5 – 20 mg/kg/dose Max 500 mg/dose	3 – 30 minutes	Pedi 1	Renal function, electrolytes, weight
Ciprofloxacin (CIPRO)	10 – 30 mg/kg/dose Max 400 mg/dose	60 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Cisatracurium (NIMBEX)	0.1 – 0.15 mg/kg/dose	5 – 10 seconds	Pedi 4	Vital signs, train-of-four (TOF)
Clindamycin (CLEOCIN)	5 – 10 mg/kg/dose Max 900 mg/dose	10 – 60 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Colistimethate (COLY-MYCIN M)	0.6 – 2.5 mg/kg/dose Max 100 mg/dose	3 – 30 minutes	Pedi 1	Renal function, CBC, bowel frequency
Deferoxamine (DEFERAL)	6 – 25 mg/kg/dose Max 1000 mg/dose	Max 15 mg/kg/hour	Pedi 1	Renal function, liver function, CBC, iron studies
Desmopressin (DDAVP)	0.05 – 2 mcg/dose	1 – 30 minutes	Pedi 1	Renal function, electrolytes
Dexamethasone (DECADRON)	0.01 – 2 mg/kg/dose Max 20 mg/dose	1 – 30 minutes	Pedi 1	Glucose, vital signs, electrolytes, weight, height
Dextrose 10%	0.2 – 0.4 g/kg/dose	Max 200 mg/kg/minute	Pedi 1	Glucose, electrolytes
Digoxin (LANOXIN)	2 – 20 mcg/kg/dose	5 – 10 minutes	Pedi 1 Pedi 2 (load)	Renal function, electrolytes, vital signs, ECG, trough concentration
Diphenhydramine (BENADRYL)	1 – 2 mg/kg/dose Max 50 mg/dose	10 – 15 minutes	Pedi 1	Sedation
Doxycycline (DOXY)	2.2 – 4.4 mg/kg/dose Max 200 mg/dose	1 – 4 hours	Pedi 1	Renal function, liver function, CBC, bowel frequency
Enalaprilat (VASOTEC)	5 – 10 mcg/kg/dose Max 1250 mcg/dose	5 minutes	Pedi 1	Vital signs, renal function, CBC, electrolytes
Epinephrine (ADRENALIN)	0.01 – 0.03 mg/kg/dose Max 1 mg/dose	1 – 2 seconds	Pedi 2	Vital signs, ECG
Epoetin alfa (RETACRIT)	50 – 2500 units/kg/dose	1 minute	Pedi 1	CBC, iron studies, renal function
Erythromycin (ERYTHROCIN LACTOBIONATE)	4 – 10 mg/kg/dose Max 1000 mg/dose	20 – 60 minutes	Pedi 1	Liver function, bowel frequency, vitals
Esmolol (BREVIBLOC)	100 – 500 mcg/kg/dose	30 – 60 seconds	Pedi 4	Vital signs, ECG, electrolytes
Etomidate (AMIDATE)	0.1 – 0.6 mg/kg/dose Max 20 mg/dose	30 – 60 seconds	Pedi 4	Vital signs, renal function, sedation
Famotidine (PEPCID)	0.25 – 1 mg/kg/dose Max 20 mg/dose	2 – 30 minutes	Pedi 1	Gastric pH, renal function, CBC
Fentanyl (SUBLIMAZE)	0.5 – 10 mcg/kg/dose Max 100 mcg/dose	3 – 30 minutes	Pedi 2	Vital signs, pain, bowel frequency
Filgrastim (GRANIX)	5 – 120 mcg/kg/dose	15 – 30 minutes	Pedi 1	CBC
Fluconazole (DIFLUCAN)	3 – 35 mg/kg/dose Max 800 mg/dose	1 – 2 hours	Pedi 1	Liver function, renal function, CBC
Flumazenil (ROMAZICON)	0.0078 – 0.01 mg/kg/dose Max 0.2 mg/dose	15 – 30 seconds	Pedi 1	Vital signs, sedation
Fosphenytoin (CEREBRYX)	2 – 20 mg PE (phenytoin sodium equivalent)/kg/dose Max 1500 mg PE/dose	Max 2 mg PE/kg/minute or 150 mg PE/minute	Pedi 2	CBC, vital signs, ECG, liver function, free phenytoin trough concentration, seizures

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IV Medications	Dose Range & Max Dose	Infusion Duration	Required Level of Care	Monitoring Parameters
Furosemide (LASIX)	0.5 – 6 mg/kg/dose Max 200 mg/dose	Max 0.5 mg/kg/minute or 4 mg/minute	Pedi 1	Renal function, electrolytes, weight
Ganciclovir (CYTOVENE)	5 – 6 mg/kg/dose	1 hour	Pedi 1	CBC, renal function, liver function
Gentamicin	0.5 – 12 mg/kg/dose	30 – 120 minutes	Pedi 1	Renal function, peak and trough concentrations, ophthalmologic exams
Glucagon (GLUCAGEN)	0.02 – 0.2 mg/kg/dose Max 1 mg/dose	1 – 5 minutes	Pedi 1	Glucose, vital signs, ECG
Glycopyrrrolate (ROBINUL)	4 – 10 mcg/kg/dose Max 0.2 mg/dose	1 – 2 minutes	Pedi 1	Vital signs, bowel frequency, secretions
Haloperidol (HALDOL)	0.015 – 0.15 mg/kg/dose Max 20 mg/dose	Max 0.125 mg/kg/minute or 5 mg/minute	Pedi 1	Vital signs, CBC, liver function, ECG, mental status
Heparin	50 – 100 units/kg/dose	10 minutes	Pedi 2	CBC, activated partial thromboplastin time (aPTT), activated clotting time (ACT)
Hydralazine (APRESOLINE)	0.1 – 2 mg/kg/dose Max 20 mg/dose	Max 5 mg/minute	Pedi 1	Vital signs
Hydrocortisone (SOLUCORTEF)	0.25 – 5 mg/kg/dose Max 240 mg/dose	10 – 30 minutes	Pedi 1	Glucose, vital signs, electrolytes, weight, height
Hydromorphone (DILAUDID)	0.01 – 0.015 mg/kg/dose	2 – 3 minutes	Pedi 1	Vital signs, pain, bowel frequency
Immune Globulin (PRIVIGEN)	400 – 2000 mg/kg/dose	Initial 0.5 mg/kg/minute, increase up to 8 mg/kg/minute	Pedi 1	IgG levels, CVC, renal function, infusion-related reactions
Indomethacin (INDOCIN)	0.1 – 0.25 mg/kg/dose	20 – 30 minutes	Pedi 1	Renal function, electrolytes, liver function, CBC
Insulin Regular (HUMULIN R)	0.05 – 0.1 units/kg/dose	1 – 2 minutes	Pedi 1	Glucose, Hemoglobin A _{1c} , HbA _{1c} , electrolytes
Iron Sucrose (VENOFER)	0.5 – 7 mg/kg/dose Max 100 mg/dose	1 – 2 hours	Pedi 1	CBC, iron studies
Ketamine (KETALAR)	0.5 – 4.5 mg/kg/dose	2 – 3 minutes	Pedi 4	Vital signs, sedation
Ketorolac (TORADOL)	0.5 mg/kg/dose Max 30 mg/dose	1 – 5 minutes	Pedi 1	Renal function, CBC, electrolytes, liver function
Labetalol (TRANDATE)	0.2 – 1 mg/kg/dose Max 40 mg/dose	Max 10 mg/minute	Pedi 2	Vital signs, ECG
Levetiracetam (KEPPRA)	5 – 60 mg/kg/dose Max 3000 mg/dose	5 – 15 minutes	Pedi 1	Renal function, seizures
Levocarnitine (CARNITOR)	25 – 100 mg/kg/dose Max 6000 mg/dose	2 – 3 minutes	Pedi 1	Electrolytes, vital signs, hepatic function, CBC
Levofloxacin (LEVAQUIN)	8 – 10 mg/kg/dose Max 750 mg/dose	60 – 90 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency, tendonitis
Levothyroxine (SYNTHROID)	1.5 – 12 mcg/kg/dose Max 400 mcg/dose	2 – 3 minutes	Pedi 1	Thyroid function, vital signs
Linezolid (ZYVOX)	10 – 15 mg/kg/dose Max 600 mg/dose	30 – 120 minutes	Pedi 1	CBC, bowel frequency
Lorazepam (ATIVAN)	0.025 – 0.15 mg/kg/dose Max 2 mg/dose	2 – 5 minutes	Pedi 1	Vital signs, CBC, renal function, sedation
Magnesium Sulfate	25 – 75 mg/kg/dose Max 2000 mg/dose	1 – 4 hours	Pedi 2	Electrolytes, vital signs, renal function, ECG
Mannitol (OSMITROL)	0.25 – 2 g/kg/dose	20 – 30 minutes	Pedi 4	Renal function, electrolytes, serum and urine osmolality, intracranial pressure (ICP)
Meropenem (MERREM)	10 – 40 mg/kg/dose Max 2000 mg/dose	15 – 30 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Methadone (DOLOPHINE)	0.025 mg – 0.1 mg/kg/dose	1 – 2 minutes	Pedi 1	Vital signs, pain, ECG
Methylprednisolone (SOLUMEDROL)	0.1 – 30 mg/kg/dose Max 1000 mg/dose	15 – 60 minutes	Pedi 1	Glucose, electrolytes, CBC, weight, height
Metoclopramide (REGLAN)	0.1 – 2 mg/kg/dose Max 10 mg/dose	1 – 2 minutes	Pedi 1	Vital signs, dystonic reactions
Metronidazole (FLAGYL)	7.5 – 30 mg/kg/dose Max 750 mg/dose	30 – 60 minutes	Pedi 1	CBC, liver function
Micafungin (MYCAMINE)	1 – 15 mg/kg/dose Max 150 mg/dose	1 hour	Pedi 1	Renal function, liver function, CBC
Midazolam (VERSED)	0.025 – 0.5 mg/kg/dose Max 10 mg/dose	2 – 5 minutes	Pedi 2	Vital signs, sedation
Morphine (DURAMORPH)	0.025 – 0.2 mg/kg/dose Max 10 mg/dose	4 – 30 minutes	Pedi 1	Vital signs, pain, bowel frequency
Nafcillin	17 – 50 mg/kg/dose Max 2000 mg/dose	5 – 60 minutes	Pedi 1	Renal function, CBC, electrolytes, liver function
Naloxone (NARCAN)	0.001 – 0.1 mg/kg/dose Max 2 mg/dose	30 seconds	Pedi 1	Vital signs, temperature, arterial blood gas, level of consciousness
Neostigmine (BLOXIVERZ)	0.01 – 0.07 mg/kg/dose Max 5 mg/dose	1 – 2 minutes	Pedi 2	Vital signs, ECG
Ondansetron (ZOFRAN)	0.1 – 0.3 mg/kg/dose Max 16 mg/dose	2 – 15 minutes	Pedi 1	Electrolytes, ECG, serotonin syndrome
Pantoprazole (PROTONIX)	0.8 – 1.6 mg/kg/dose Max 80 mg/dose	2 – 15 minutes	Pedi 1	Renal function, liver function, CBC, electrolytes
Penicillin G (PFIZERPEN)	25,000 – 125,000 units/kg/dose Max 6,000,000 units/dose	15 – 30 minutes	Pedi 1	Renal function, electrolytes, CBC, bowel frequency
Pentobarbital (NEMBUTAL)	1 – 15 mg/kg/dose Max 100 mg/dose	10 – 30 minutes Load: 30 – 180 minutes	Pedi 4	Vital signs, central nervous system (CNS) status, CBC, renal function, liver function
Phenobarbital (LUMINAL)	1 – 20 mg/kg/dose Max 1000 mg/dose	< 60 kg: max 30 mg/minute ≥ 60 kg: max 60 mg/minute	Pedi 4	Vital signs, CNS status, seizures, CBC, renal function, liver function, serum concentration
Phentolamine (ORAVERSE)	0.05 – 0.1 mg/kg/dose Max 5 mg/dose	30 seconds	Pedi 4	Vital signs
Phenylephrine (NEO-SYNEPHRINE)	5 – 20 mcg/kg/dose Max 1000 mcg/dose	20 – 30 seconds	Pedi 4	Vital signs, central venous pressure, blood gases
Phenytoin (DILANTIN)	2 – 20 mg/kg/dose Max 1000 mg/dose	Max 3 mg/kg/minute or 50 mg/minute	Pedi 2	CBC, vital signs, ECG, liver function, free phenytoin trough concentration, seizures
Physostigmine	0.02 mg/kg/dose Max 0.5 mg/dose	Max 0.5 mg/minute	Pedi 4	Vital signs, ECG
Phytonadione	0.3 – 5 mg/dose	15 – 30 minutes	Pedi 1	Prothrombin time (PT), international normalized ratio (INR)
Piperacillin/Tazobactam (ZOSYN)	80 – 100 mg piperacillin/kg/dose Max 3000 mg piperacillin/dose	0.5 – 4 hours	Pedi 1	Renal function, liver function, CBC, electrolytes, bowel frequency
Potassium Chloride	0.5 – 1 mEq/kg/dose Max 40 mEq/dose	Max 1 mEq/kg/hour or 40 mEq/hour	Pedi 2	Electrolytes, renal function
Potassium Phosphate	0.08 – 1 mMol/kg/dose	4 – 12 hours Max 1 mEq/kg/hour or 40 mEq/hour	Pedi 2	Electrolytes, renal function
Prochlorperazine (COMPAZINE)	0.1 – 0.15 mg/kg/dose Max 10 mg/dose	Max 5 mg/minute	Pedi 1	CBC, extrapyramidal symptoms (EPS), vital signs

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IV Medications	Dose Range & Max Dose	Infusion Duration	Required Level of Care	Monitoring Parameters
Propranolol (INDERAL)	0.01 – 0.25 mg/kg/dose Max 3 mg/dose	10 minutes	Pedi 4	Vital signs, ECG
Protamine	0.25 – 50 mg/dose	Max 5 mg/minute	Pedi 2	Coagulation tests, aPTT, ACT, vital signs
Rifampin (RIFADIN)	2.5 – 20 mg/kg/dose Max 600 mg/dose	0.5 – 3 hours	Pedi 1	Liver function, CBC, PT
Rocuronium (ZEMURON)	0.075 – 1.2 mg/kg/dose	30 seconds	Pedi 4	Vital signs, TOF
Sildenafil (REVATIO)	0.04 – 1 mg/kg/dose Max 10 mg/dose	5 minutes – 3 hours	Pedi 1	Vital signs, oxygen saturation
Sodium Bicarbonate	1 – 2 mEq/kg/dose Max 50 mEq/dose	2 – 8 hours or max 1 mEq/kg/hour Emergency: max 10 mEq/minute	Pedi 4	Electrolytes, blood gases
Sodium Chloride 3%	5 – 10 mL/kg	30 minutes	Pedi 4	Renal function, electrolytes, serum osmolality , vital signs, ICP
Sodium Phosphate	0.08 – 1 mEq/kg/dose	4 – 12 hours	Pedi 1	Renal function, electrolytes
Succinylcholine (QUELICIN)	1 – 3 mg/kg/dose	30 seconds	Pedi 4	Vital signs, electrolytes, TOF
Sulfamethoxazole (SMZ)/Trimethoprim (TMP) (BACTRIM)	2.5 – 10 mg TMP/kg/dose Max 160 mg TMP/dose	60 – 90 minutes	Pedi 1	Renal function, liver function, CBC, bowel frequency
Tobramycin	1 – 12 mg/kg/dose	15 – 60 minutes	Pedi 1	Renal function, peak and trough concentrations, ophthalmologic exams
Valproic Acid (DEPACON)	5 – 40 mg/kg/dose Max 2000 mg/dose	Max 3 mg/kg/minute or 20 mg/minute	Pedi 2	Liver function, serum ammonia, CBC, vitamin D level, weight, serum concentration
Vancomycin	10 – 20 mg/kg/dose Max 2000 mg/dose	60 – 120 minutes	Pedi 1	Renal function, serum trough concentration, CBC, red man syndrome
Vecuronium	0.03 – 0.15 mg/kg/dose	30 seconds	Pedi 4	Vital signs, TOF
Zidovudine (RETROVIR)	1.5 – 9 mg/kg/dose	30 – 60 minutes	Pedi 1	Electrolytes, CBC, renal function, lipid profiles, lactate