University of Michigan – Department of Pharmacy Services
IV Guidelines for PICU / CES / TBICU (<12 years of age)

DRUG – GENERIC NAME [TRADE NAME]	STANDARD CONCENTRATION Bolded diluent is standard/preferred	LOADING DOSE & BOLUS DOSE	USUAL DOSE RANGE	NURSING TITRATION INSTRUCTIONS	COMMENTS
ALPROSTADIL (PGE, PROSTIN, PROSTAGLANDIN) **Used for PDA patency (newborn cardiac) or graft patency (liver transplant)*	100mcg/33.3mL (3mcg/mL) 1000mcg/250mL (4mcg/mL) 200mcg/33.3mL (6mcg/mL) Diluents: D5W, **D10W**, NS	NONE	0.03-0.2mcg/kg/min Transplant: 10-40mcg/hr based on patient weight	DO NOT TITRATE	▪ Transplant dosing is different; refer to liver transplant protocol in OTIS ▪ 6mcg/mL conc use "alprostodil non-standard" in <50kg PICU Cardiac A-I syringe pump library
AMINOPHYLLINE *IV form of theophylline	100mg/50mL (2mg/mL) 250mg/50mL (5mg/mL) 500mg/50mL (10mg/mL) Diluents: **D5W**, D10W, NS	Loading: 5-7mg/kg IV given over 30 minutes	0.5-1.2mg/kg/hr *Note: refer to Peds Lexicomp for age appropriate dose*	DO NOT TITRATE	▪ Follow theophylline levels 1hr post-load, then Q12-24hr ▪ Therapeutic: 10-15mcg/mL ▪ Toxicity >20mcg/mL
AMIODARONE	10mg/20mL (0.5mg/mL) 20mg/20mL (1mg/mL) 100mg/50mL (2mg/mL) **Central Line ONLY:** 250mg/50mL (5mg/mL) 300mg/50mL (6mg/mL) Diluents: **D5W**	Loading: **<50kg:** 5mg/kg IV up to MAX of 150mg/dose given over 60 minutes; if cardiac rhythm response is not achieved, prescriber may choose to repeat loading dose (MAX 15mg/kg/day or 450mg/day) **≥50kg:** 150mg/dose IV given over 60 minutes; if cardiac rhythm response is not achieved, prescriber may choose to repeat (MAX 450mg/day)	**<50kg:** 5-15 mcg/kg/min [All conc] **≥50kg:** 1mg/min x 6hrs, then 0.5mg/min [2mg/mL and 6mg/mL conc ONLY]	DO NOT TITRATE	▪ **MUST BE FILTERED** with 0.22micron filter ▪ Tubing good for 72 hours

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Last Revised 3/11/2013 ver. 4

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ARGATROBAN	20mg/20mL (1mg/mL) 50mg/50mL (1mg/mL) Diluents: D5W, NS	Loading: ONLY used in cath lab or to prime ECMO circuit	0.1-3mcg/kg/min **ECMO:** 0.5-2mcg/kg/min	DO NOT TITRATE	▪ Follow aPPTs or anti-IIa levels ▪ ECMO follows ACTs ▪ Lower dosing needed in liver failure
AMINOCAPROIC ACID [AMICAR®]	1000mg/50mL (20mg/mL) 5000mg/250mL (20mg/mL) Diluents: D5W	Loading: 50-100mg/kg IV up to MAX of 5000mg/dose given over 60 minutes	**<50kg:** 25-30mg/kg/hr, total hourly dose cannot exceed 1000mg/hr **≥50kg:** 1000mg/hr	DO NOT TITRATE	▪ Mott infusions (syringes) run as mg/kg/hr ▪ UH infusion orders (250mL bags) run in mg/hr
BUMETANIDE [BUMEX®]	5mg/20mL (0.25mg/mL) 12.5mg/50mL (0.25mg/mL) **No Diluent** – This is straight drug	NONE	0.01-0.04mg/kg/hr	DO NOT TITRATE	▪ Found under "PICU Misc Continuous" in <50kg PICU syringe pump library
CALCIUM CHLORIDE	**Central Line ONLY:** 1000mg/50mL (20mg/mL) 2000mg/100mL (20mg/mL) 5000mg/250mL (20mg/mL)	NONE	2.5-20mg/kg/hr CRRT Calcium Infusion: per CRRT Citrate protocol	DO NOT TITRATE **Exception:** For CRRT calcium infusion, titrate per CRRT Citrate protocol	▪ CENTRAL LINE administration ONLY
CISATRICURIUM [NIMBEX®]	50mg/50mL (1mg/mL) 100mg/50mL (2mg/mL) Diluents: **D5W**, NS	Loading: 0.1 mg/kg IV given over 5-10 seconds and then initiate continuous infusion Bolus: May give 0.1mg/kg over 5-10 seconds with each infusion increase	1-10mcg/kg/min	Titrate by 0.5mcg/kg/min every 30-60 minutes until ordered Train-of-Four or max ordered dose achieved	***Neuromuscular blockade*** ▪ Monitor with peripheral nerve stimulation (Train-of-Four) ▪ Recommended starting voltage: 2 Hz every 0.5 seconds x 4, may repeat in 12 seconds

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DEXMEDETOMIDINE [PRECEDEX®]	80mcg/20mL (4mcg/mL) 200mcg/50mL (4mcg/mL) Diluents: D5W, **NS**	Loading: Due to potential side effects, loading doses are not currently recommended	0.2-1.5mcg/kg/hr	Titrate by 0.1-0.2mcg/kg/hr every 30 minutes until ordered sedation or max ordered dose achieved	▪ Common side effects: bradycardia and hypotension ▪ Due to no compatibility information for dexmedetomidine and TPN, place dexmedetomidine stopcock furthest from TPN stopcock if running via same lumen ▪ Pediatric ICU Dexmedetomidine Guidelines
DILTIAZEM [CARDIZEM®]	10mg/50mL (0.2mg/mL) 50mg/50mL (1mg/mL) Diluents: **D5W**, NS	Loading: 0.25mg/kg IV given over 2 minutes; after 15 minutes if cardiac rhythm response is not achieved, prescriber may order 2nd dose of 0.35mg/kg IV	**<50kg:** 0.07-0.2mg/kg/hr [All conc] **≥50kg:** 5-15mg/hr [1mg/mL conc ONLY]	DO NOT TITRATE	
DOBUTAMINE	50mg/50mL (1mg/mL) 100mg/50mL (2mg/mL) 150mg/50mL (3mg/mL) **Central Line ONLY:** 250mg/50mL (5mg/mL) Diluents: D5W, D10W, NS	NONE	2-20mcg/kg/min	Titrate by 2-5mcg/kg/min every 5 minutes until ordered parameter or max ordered dose achieved	

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DOPAMINE	50mg/50mL (1mg/mL) 100mg/50mL (2mg/mL) 150mg/50mL (3mg/mL) **Central Line ONLY:** 300mg/50mL (6mg/mL) Diluents: D5W, D10W, NS	NONE	2-20mcg/kg/min	Titrate by 2-5mcg/kg/min every 5 minutes until ordered parameter or max ordered dose achieved	
EPINEPHRINE HYDROCHLORIDE	0.2mg/20mL (0.01mg/mL) 1mg/50mL (0.02mg/mL **Central Line ONLY:** 2 mg/50mL (0.04mg/mL) 6 mg/50mL (0.12mg/mL) Diluents: D5W, D10W, NS	NONE	0.01-1mcg/kg/min	Titrate by 0.01-0.02mcg/kg/min every 5 minutes until ordered parameter or max ordered dose achieved	
EPOPROSTANOL [FLOLAN®]	0.03mg/10mL (3mcg/mL) 0.1mg/20mL (5mcg/mL) 0.75mg/50mL (15mcg/mL) 1.5mg/50mL (30mcg/mL) Alternate volumes available Special concentrations available – must be approved by Pharmacy **Special Flolan Diluent**	NONE	**Starting dose:** 2-3ng/kg/min 1ng (nanogram) = 0.001 mcg **OR** 1000ng (nanogram) = 1mcg	DO NOT TITRATE **Titration based on patient response per MD order. Usual dose increase by 1-2ng/kg/min every 8-24 hours.*	▪ Flolan cartridges are stable for 24 hours – **store on ice and protect from light** ▪ Flolan syringes must be **changed every 8 hours** – do not have to cover syringe or IV tubing ▪ Flolan is NOT COMPATIBLE with any other medications or IV fluids ▪ DO NOT stop, pause, or interrupt Flolan infusion ▪

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ESMOLOL [BREVIBLOC®]	400mg/20mL (20mg/mL) 1000mg/50mL (20mg/mL) Diluents: **D5W**, NS	Loading: 50-500mcg/kg given over 1 minute	50-200mcg/kg/min If >2yr may run 300-800mcg/kg/min with MD order	Titrate by 25mcg/kg/min every 5 to 15 minutes until ordered parameter or max ordered dose achieved	
FENOLDOPAM	1.6mg/20mL (80mcg/mL) 4mg/50mL (80mcg/mL) Diluents: D5W, NS	NONE	0.1-0.8mcg/kg/min	DO NOT TITRATE	▪ Found under "PICU Misc Continuous" in <50kg PICU syringe pump library
FENTANYL [SUBLIMAZE®]	1 mg/20 mL (50 mcg/mL) 0.5mg/20mL (25mcg/mL)	Loading: 1-2mcg/kg IV given slow IV push* Bolus: May give 1-2mcg/kg slow IV push with each infusion increase ***Administration rates for loading or bolus doses:** <5mcg/kg = 3-5 minutes ≥5mcg/kg = 5-10 minutes	1-10mcg/kg/hr	Titrate by 0.5mcg/kg/hr every 30 minutes until ordered parameter or max ordered dose achieved	▪ Pushing IV fentanyl too quickly will result in chest wall rigidity
FUROSEMIDE [LASIX®]	20mg/20 mL (1mg/mL) 125mg/50mL (2.5mg/mL) 250mg/50mL (5mg/mL) 200mg/20mL (10mg/mL) Diluents: D5W, D10W, NS	NONE	**<50kg:** 0.05-0.4mg/kg/hr [All conc] **≥50kg:** 0.5-40mg/hr [5mg/mL and 10mg/mL conc ONLY]	DO NOT TITRATE	

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HEPARIN	2000units/20mL (100units/mL) 5000units/50mL (100units/mL) **ECMO:** 750units/30mL (25units/mL) 2500units/50mL (50units/mL) 5000units/50mL (100units/mL) 20,000units/50mL (400units/mL) Diluents: D5W, D10W, NS	Loading: 50-80units/kg IV given over 15 minutes ECMO Loading: 100mg/kg IV given over 15 minutes	**Starting Dose:** 15-18units/kg/hr **Maintenance Dose Range:** 15-40unit/kg/hr	DO NOT TITRATE	▪ MONITOR PTT (or anti-Xa level) ▪ Doses will be adjusted per PTT (or anti-Xa level) ▪ Nomogram imbedded in CareLink order ▪ ECMO uses different concentrations ▪ ECMO monitors ACTs
INSULIN REGULAR	2units/20 mL (0.1unit/mL) 20units/20mL (1unit/mL) 50units/50mL (1unit/mL) 250units/50mL (5units/mL) Diluents: D5W, D10W, **NS**	NONE	**DKA:** 0.05-0.1unit/kg/hr **HYPERGLYCEMIA of critical illness:** **<50kg:** Start at 0.05-0.1units/kg/hr [All conc] **≥50kg:** Start at 1unit/hr [1unit/mL and 5unit/mL conc ONLY]	**DKA:** DO NOT TITRATE **HYPERGLYCEMIA of critical illness:** DO NOT TITRATE	▪ MONITOR GLUCOSE LEVELS ▪ For insulin infusion guidelines on pediatric diabetic patients see Pediatric Endocrinology Guidelines for DKA

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ISOPROTERENOL [ISUPREL®]	0.2mg/20mL (0.01mg/mL) **Central Line ONLY:** 1mg/50mL (0.02mg/mL) Diluents: D5W, NS	NONE	0.01-2mcg/kg/min	DO NOT TITRATE	
KETAMINE [KETALAR®]	100mg/50mL (2mg/mL) 250mg/50mL (5mg/mL) 500mg/50mL (10mg/mL) Diluents: D5W, NS	Loading: 0.5-2mg/kg IV given over 1 minute Bolus: May give 0.5-2mg/kg IV over 1 minute with each infusion increase	5-40mcg/kg/min	Titrate by 5mcg/kg/min every 30 minutes until ordered sedation or max ordered dose achieved	
LABETOLOL	20mg/20mL (1mg/mL) 100mg/50mL (2mg/mL) **Central Line ONLY:** 250mg/50mL (5mg/mL) Diluents: D5W, NS	Loading: 0.2-1mg/kg up to MAX of 20mg/dose IV given over 5 minutes	**<50kg:** 0.25-3.0mg/kg/hr [All conc] **≥50kg:** 0.5-3mg/min [5mg/mL conc ONLY]	DO NOT TITRATE	
LEVOTHYROXINE (T4 – GIFT OF LIFE) [SYNTHROID®]	100mcg/50mL (2mcg/mL) 200mcg/500mL (0.4mcg/mL)	Loading: 0.8-5mcg/kg IV given over 30-45 minutes	**<50kg:** 0.8-1.4mcg/kg/hr [2mcg/mL conc ONLY] **≥50kg:** 1-20mcg/hr [0.4mcg/mL conc ONLY]	DO NOT TITRATE	▪ Not in syringe pump library ▪ Syringe expires in 12 hours ▪ Age based dosing available under "Organ donor management" in dosing section

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LIDOCAINE	200mg/50mL (4mg/mL) **Central Line ONLY:** 2000mg/250mL (8mg/mL) Diluents: **D5W**, NS	Cardiac Loading: 1mg/kg IV given over 2 minutes. After 15 minutes if cardiac rhythm response is not achieved, prescribe may choose to repeat loading dose.	**For cardiac:** 20-80mcg/kg/min **For chronic pain:** 15-30mcg/kg/min	DO NOT TITRATE	▪ Check lidocaine level Q24hr ▪ Therapeutic: 1.5-5 mcg/mL
LORAZEPAM [ATIVAN®]	4mg/20mL (0.2mg/mL) 20mg/20mL (1mg/mL) 50mg/50mL (1mg/mL) Diluents: **D5W**, D10W, NS	Loading: 0.1-0.3mg/kg IV given over 1-2 minutes Bolus: May give 0.1-0.3mg/kg IV over 1-2 minutes with each infusion increase	**<50kg:** 20-200mcg/kg/hr [All conc] **≥50kg:** 1-10mg/hr [1mg/mL conc ONLY]	**<50kg:** Titrate by 10-20mcg/kg/hr every 60 minutes until ordered sedation or max ordered dose achieved **>50kg:** Titrate by 0.5-1mg/hr every 60 minutes until ordered sedation or max ordered dose achieved	▪ Doses above 200mcg/kg/hr or 10mg/hr may be used but patient should be monitored for propylene glycol toxicity (osmolar gap metabolic acidosis)
MIDAZOLAM [VERSED®]	4mg/20mL (0.2mg/mL) 20mg/20mL (1mg/mL) 50mg/50mL (1mg/mL) Diluents: D5W, D10W, NS	Loading: 0.05-0.2mg/kg IV given over 2 minutes Bolus: May give 0.05-0.2mg/kg IV over 2 minutes with each infusion increase	**<50kg:** 20-200mcg/kg/hr [All conc] **≥50kg:** 1-10mg/hr [1mg/mL conc ONLY]	**<50kg:** Titrate by 10-20mcg/kg/hr every 60 minutes until ordered sedation or max ordered dose achieved **>50kg:** Titrate by 0.5-1 mg/hr every 60 minutes until ordered sedation or max ordered dose achieved	

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MILRINONE	1mg/20mL (0.05mg/mL) 2mg/20mL (0.1mg/mL) 25mg/50mL (0.5mg/mL) Diluents: D5W, D10W, NS	Loading: 50mcg/kg IV given over 15 minutes ***Do not routinely load in the PICU**	0.3-0.75mcg/kg/min	DO NOT TITRATE	
MORPHINE SULFATE	4mg/20mL (0.2 mg/mL) 20mg/20mL (1mg/mL) 50mg/50mL (1 mg/mL) 250mg/50mL (5mg/mL) Diluents: D5W, D10W, NS	Loading: 0.1-0.3mg/kg IV given over 5 minutes Bolus: May give 0.1-0.3mg/kg IV over 5 minutes with each infusion increase	**<50kg:** 20-200mcg/kg/hr [0.2 and 1mg/mL conc ONLY] **≥50kg:** 1-10 mg/hr [1mg/mL or 5mg/mL conc ONLY]	**<50kg:** Titrate by 10-20mcg/kg/hr every 60 minutes until ordered parameter or max ordered dose achieved **>50kg:** Titrate by 0.5-1 mg/hr every 60 minutes ordered parameter or max ordered dose achieved	
NALOXONE (NARCAN®)	**For pruritus or hyperalgesia:** 1.1mg/20mL (0.005mg/mL) 1.2mg/20mL (0.01mg/mL) **For opioid reversal:** 10mg/100mL (0.1mg/mL) Diluents: **NS**	NONE	**For pruritus or hyperalgesia:** 0.1-0.25mcg/kg/hr **For opioid reversal:** 20-40mcg/kg/hr	DO NOT TITRATE	▪ To decrease opioid-induced pruritus or opioid tolerance and rapid escalation ▪ For opioid reversal, dose may be higher or lower based on amount opioid intoxication

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NESIRITIDE [NATRECOR®] *Used most commonly in decompensated heart failure to help dilate veins and arteries	0.12mg/20mL (6mcg/mL) 0.3mg/50mL (6mcg/mL) Diluents: **NS**	NONE	0.01-0.03mcg/kg/min	DO NOT TITRATE	▪ Common side effect: HYPOTENSION
NICARDIPINE	6mg/20mL (0.3mg/mL) 40mg/200mL (0.2mg/mL) – **NS only** **Central Line ONLY:** 25mg/50mL (0.5mg/mL) Diluents: D5W, NS	NONE	**<50kg:** 1-5mcg/kg/min [0.3mg/mL and 0.5mg/mL ONLY] **≥50kg:** 1-15mg/hr [0.2mg/mL and 0.5mg/mL ONLY]	**<50kg:** Titrate by 0.2mcg/kg/min every 5 minutes ordered parameter or max ordered dose achieved **≥50kg:** Titrate by 0.5-1mg/hr every 5 minutes ordered effects or max ordered dose achieved	▪ Watch peripheral infusion site for infiltration or extravasation
NITROGLYCERIN	10mg/50mL (0.2mg/mL) **Central Line ONLY:** 20mg/50mL (0.4mg/mL) Diluents: D5W, NS	NONE	0.5-20mcg/kg/min	DO NOT TITRATE	▪ Use low-sorbing tubing MSC item #5101: Set, IV Low sorbing w/o ports

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NITROPRUSSIDE [NIPRIDE®]	10mg/20mL (0.5mg/mL) **Central Line ONLY:** 50mg/50mL (1mg/mL) Diluents: **D5W ONLY**	NONE	0.5-10mcg/kg/min	DO NOT TITRATE	▪ **Protect syringe from light** – do not need to cover IV tubing ▪ Check cyanide/thiocyanate level every 24 hours to monitor for cyanide toxicity
NOREPINEPHRINE BITARTRATE [LEVOPHED®]	0.2mg/20 mL (0.01mg/mL) 1mg/50 mL (0.02mg/mL) **Central Line ONLY:** 2mg/50mL (0.04mg/mL) 6mg/50mL (0.12mg/mL) Diluents: **D5W, D10W**, NS	NONE	0.01-2mcg/kg/min	Titrate by 0.01-0.02mcg/kg/min every 5 minutes ordered parameter or max ordered dose achieved	
OCTREOTIDE	0.05mg/20mL (2.5mcg/mL) 0.25mg/50mL (5mcg/mL) 0.5mg/50mL (10mg/mL) Diluents: D5W, NS	NONE	**Chylothorax:** 1-3mcg/kg/hr **GI bleed:** 1-10mcg/kg/hr	DO NOT TITRATE	
PANTOPRAZOLE [PROTONIX®]	16mg/20mL (0.8mg/mL) 40mg/50mL (0.8mg/mL) Diluents: **NS**	Loading: 1-2mg/kg IV up to MAX of 80mg/dose) given over 5 minutes	0.1-0.2mg/kg/hr	DO NOT TITRATE	▪ Should be used for GI bleeding only

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PENTOBARBITAL [NEMBUTAL®]	100mg/20mL (5mg/mL) **Central Line ONLY:** 1000mg/20mL (50mg/mL) Diluents: D5W, D10W, NS	Loading: 1-5mg/kg IV given over 20 minutes Bolus: May give 1-2mg/kg IV over 20 minutes with each infusion increase	0.25-10mg/kg/hr	DO NOT TITRATE	▪ Vasopressor may be needed to sustain BP due to myocardial depressant effects ▪ **PICU Practice:** Continuous infusion require in-line 0.22 micron **filter** and use **4-way ECMO stopcock** to avoid drug precipitation ▪ **Infusion, tubing, and stopcock needs to be changed Q12hr**
PHENYLEPHRINE * Used most commonly in neurogenic shock	2.5mg/50mL (0.05mg/mL) 5mg/50mL (0.1mg/mL) **Central Line ONLY:** 50mg/50mL (1mg/mL) Diluents: D10W, D5W, NS	NONE	0.05-5mcg/kg/min	DO NOT TITRATE	

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PROCAINAMIDE	80mg/20mL (4mg/mL) 200mg/50mL (4mg/mL) **Central Line ONLY:** 400mg/50mL (8mg/mL) 2000mg/250mL (8mg/mL) Diluent: **D5W**	Loading: **<50kg:** 3-6 mg/kg IV up to MAX of 100mg/dose given over 5 minutes. After 10 minutes if cardiac rhythm response is not achieved, prescriber may choose to repeat loading dose every 5-10 minutes to a total dose of 15mg/kg or 500mg in 30 minutes. **≥50kg:** 15-18mg/kg IV given over 25-30 minutes OR 100mg IV over 2 minutes repeated every 5 minutes as needed to a total dose of 1000mg.	**<50kg:** 20-80mcg/kg/min [All conc in syringes] **≥50kg:** 1-4mg/min [8mg/mL conc ONLY]	DO NOT TITRATE	▪ Check Procainamide and NAPA levels 6 to 12 hours after start of continuous infusion
PROPOFOL [DIPRIVAN®]	500mg/50mL (10mg/mL) 1000mg/100mL (10mg/mL)	NONE	10-150mcg/kg/min	Titrate by 5-10mcg/kg/min every 5 minutes until ordered sedation or max ordered dose achieved	▪ See Pediatric Propofol Policy

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ROCURONIUM	50mg/50 mL (1mg/mL) Diluents: D5W, **D10W**, NS	Loading: 1mg/kg IV given over 5-10 seconds and then initiate continuous infusion Bolus: May give 1mg/kg IV over 5-10 seconds with each infusion increase	7-12mcg/kg/min	Titrate by 1mcg/kg/min every 30-60 minutes until ordered Train-of-Four or max ordered dose achieved	***Neuromuscular blockade*** ▪ Monitor with peripheral nerve stimulation (Train-of-Four) ▪ Recommended starting voltage: 2 Hz every 0.5 seconds x 4, may repeat in 12 seconds
TERBUTALINE	5mg/50mL (0.1mg/mL) 25mg/50mL (0.5mg/mL) 50mg/50mL (1mg/mL) Diluents: D5W, NS	Loading: 2-10mcg/kg IV over 5 minutes	0.08-4mcg/kg/min	DO NOT TITRATE	▪ Common side effects: tachycardia, HTN, tremor, N/V, seizures
VASOPRESSIN (SHOCK)	4units/20 mL (0.2unit/mL) 25units/50 mL (0.5unit/mL) **Central Line ONLY:** 50units/50 mL (1unit/mL) Diluents: D5W, NS	NONE	0.0003-0.002 unit/kg/min	DO NOT TITRATE	
VASOPRESSIN (DIABETES INSIPIDUS)	No standard concentration Based on patient weight To calculate concentration: The vasopressin dose is 5% of patient's weight in 50mL **Example: 12kg patient** **12kg x 5% = 0.6 units** **0.6units/50mL = 0.012units/mL**	NONE	1milliunit/kg/hr = 1unit/hr	Titrate by 0.25-0.5milliunit/kg/hr every 60 minutes to ordered UOP	

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IV Guidelines for PICU / CES / TBICU (<12 years of age)

DRUG – GENERIC NAME [TRADE NAME]	STANDARD CONCENTRATION Bolded diluent is standard/preferred	LOADING DOSE & BOLUS DOSE	USUAL DOSE RANGE	NURSING TITRATION INSTRUCTIONS	COMMENTS
VECURONIUM	20mg/20mL (1mg/mL) 50 mg/50 mL (1mg/mL) **No diluents** – this is straight drug	Loading: 0.1mg/kg IV given over 5-10 seconds and then initiate continuous infusion Bolus: May give 0.1mg/kg IV over 5-10 seconds with each infusion increase	1-2.5mcg/kg/min	Titrate by 0.5mcg/kg/min every 30-60 minutes until ordered Train-of-Four or max ordered dose achieved	***Neuromuscular blockade*** ▪ Monitor with peripheral nerve stimulation (Train-of-Four) ▪ Recommended starting voltage: 2 Hz every 0.5 seconds x 4, may repeat in 12 seconds

Approved: Pediatric Critical Care Joint Practice: 2/2013
Pediatric Medication Safety: 2/2013
Pharmacy & Therapeutics Committee: 2/2013

*** Doses listed above are suggested maximum doses for patient safety; start at lowest dose when titrating unless clinical condition requires higher dose. Some clinical conditions may warrant the use of doses higher than those listed above.**