









Intravenous Medication Guidelines for Adults

Ventura County Medical Center / Santa Paula Hospital

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Acetaminophen (Ofirmev)	IVPB	IVPB	IVPB	IVPB	Infusion over 15 minutes. Once container has been spiked, administer dose within 6 hours. ¹
Acetazolamide (Diamox)	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over 1-3 minutes. ¹
Acetylcysteine (Acetadote) REVERSAL AGENT	IVPB	IVPB	IVPB		Reversal agent for acetaminophen.
Acyclovir EXTRAVASATION RISK	IVPB	IVPB	IVPB	IVPB	Vesicant. ²⁻³
Adenosine (Adenocard)	IV Push IV Infusion*				Rapid bolus over 1-2 seconds. ¹ See ACLS guidelines. *Nuclear Medicine: IV Infusion via peripheral line permitted. See Policy IS.26 Pharmacologic Vasodilator Stress Test.
Albumin	IVPB	IVPB	IVPB	IVPB	Begin use with 4 hours of spiking the bag. ¹ Infusion rates should be adjusted based on patient's condition and response. ¹
Alteplase (Activate, tPA) Not Cathflo Activase HIGH ALERT MEDICATION IDC required	IV Push IVPB IV/IA Infusion*				For Acute Ischemic Stroke: See CPG.25 Acute Ischemic IV t-PA (alteplase). *Interventional Radiology: IV & Intra Arterial (IA) infusions permitted and continued in ICU1.
Aminocaproic Acid (Amicar)	IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion		Avoid rapid IV injection due to hypotension, bradycardia, and arrhythmias. ¹

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Aminophylline	IV Push* IVPB IV infusion	IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion	IV load over 30 minutes. ¹ *Nuclear Medicine: IV push over 60 seconds permitted for reversal of stress test vasodilator. See Policy IS.26 Pharmacologic Vasodilatory Stress Test.
Amiodarone (Cordarone) EXTRAVASATION RISK	IV Infusion	IV Infusion	IV Infusion: AFIB rate control only		Administer with an in-line 0.22-micron filter. ¹ Rapid IV bolus doses during cardiac arrest only Vesicant. ²⁻³
Amphotericin B Liposomal (Ambisome) HIGH ALERT MEDICATION Look-Alike/Sound-Alike	IV Infusion	IV Infusion	IV Infusion	IV Infusion	Infusion time defaults to 4 hours however may adjust to more rapid infusion per patient tolerance and in consultation with Infectious Disease. Flush lines with D5W only. Not compatible with NS.
Angiotensin II (Giapreza) HIGH ALERT MEDICATION	IV Infusion				Administer via IV infusion only, preferably through a central venous line. ¹ See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
Argatroban HIGH ALERT MEDICATION IDC required	IV Infusion	IV Infusion			See Policy 100.087 and Attachment D Argatroban Protocol. See CPG.56 Management of Bleeding of Associated with Anticoagulants and Antiplatelet Therapies

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Bumetanide (Bumex) BOXED WARNING	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over 1-2 minutes. ¹
Bupivacaine BOXED WARNING	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Bupivacaine 0.1% in 100 mL NS and Bupivacaine 0.25%/250 mL are used as a continuous nerve block infused via OnQ pump (elastomeric infusion pump).
Buprenorphine (Buprenex) BOXED WARNING Look-Alike/Sound-Alike	IV Push	IV Push	IV Push	IV Push	Buprenorphine 0.3 mg/mL may be given as an IV Push over 2 minutes. It may also be given as a deep IM injection. ¹ Buprenorphine (Sublocade) subcutaneous depot injection may ONLY be administered by an Addiction Medicine Prescriber. See CPG.87 High Opiate Burden Medication Assisted Treatment (MAT) Inductions.
Caffeine Citrate	IV Push*				*Nuclear medicine: 60 mg IV push over 3-5 minutes for the reversal of stress test vasodilator. See Policy IS.26 Pharmacologic Vasodilator Stress Test.
Calcium Chloride 10% EXTRAVASATION RISK HIGH ALERT MEDICATION	IV Push* IVPB	IVPB	IVPB		*Avoid rapid administration (do not exceed 100mg/min except in emergency situations). ¹ Do not infuse calcium chloride in the same IV as phosphate containing solutions. ¹ Vesicant. ²⁻³ Administer through a small needle into a large vein; preferably in a central or deep vein. ¹

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Calcium Gluconate 10% EXTRAVASATION RISK HIGH ALERT MEDICATION	IV Push* IVPB	IVPB	IVPB	IVPB	*Administer slowly (do not exceed 200 mg/min) with a small needle into a large vein to reduce irritation. ¹ Do not mix with Sodium Bicarbonate or Phosphate infusions. Vesicant. ²⁻³
Chlorpro MAZINE BOXED WARNING Look-Alike/Sound-Alike	IV Push* IVPB	IVPB	IVPB	IVPB	*Slow IV injection at a rate of 1 mg per minute. ¹ For IM administration. Inject slowly and keep patient lying down for at least 30 min after injection to avoid hypotension. ¹
Chlorothiazide (Diuril)	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	Reconstitute with at least 18 mL of sterile water to dilute for IV Push. ¹ Administer by slow IV injection or by infusion. ¹
Cisatracurium (Nimbex) HIGH ALERT MEDICATION IDC required PARALYZING AGENT	IV Infusion				Patient must be intubated with adequate pain control and sedation prior to and during the administration of neuromuscular blockade as paralyzing agents do not provide pain control, sedation, or amnestic effects. See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Reversal Agent: Neostigmine
Conjugated Estrogen (Premarin IV) BOXED WARNING	IV Push	IV Push	IV Push	IV Push	IV Push slowly to avoid flushing and do not administer with other agents. ¹

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Cosyntropin (Cortrosyn)	IV Push	IV Push	IV Push	IV Push	For IV Push, dilute in 2 mL of NS and administer over 2 minutes. ¹ For cosyntropin stimulation test: <ul style="list-style-type: none"> - Draw baseline ACTH and cortisol levels prior to injection - Inject cosyntropin 0.25 mg - Draw cortisol level 30 minutes and 60 minutes post injection.
Dantrolene	IV Push IVPB				See policy 100.097 Acute Treatment Guidelines for Malignant Hyperthermia. Administer within 6 hours of reconstitution. ¹
Deferoxamine (Desferal) REVERSAL AGENT	IV Infusion				Reversal agent for iron toxicity. IM preferred if patient not in shock. ¹ Rate should not exceed 15 mg/kg/hr for first 1000 mg then subsequent, doses must be at a slower rate not to exceed 125 mg/hr. ¹
Desmopressin Acetate (DDAVP)* HIGH ALERT MEDICATION	IV Push IVPB	IV Push IVPB	IVPB	IVPB	0.5 – 4 mcg usually given IV Push. <u>*Indication specific restrictions due to monitoring:</u> Hyponatremia and Diabetes Insipidus 1:1 to 1:3 Uremic bleeding (no restriction) Infusion rate may be indication specific.
Dexamethasone (Decadron)	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push 4 mg/mL or 10 mg/mL concentrations undiluted over < 1 minute. ¹

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Dexmedetomidine (Precedex) HIGH ALERT MEDICATION	IV Infusion				See Policy CC.23 Intravenous Medication Administration in Critical Care Areas. Do not give as an IV Push as it may result in bradycardia and sinus arrest. ¹
Diazepam (Valium) BOXED WARNING	IV Push Max: 10 mg/dose	IV Push Max: 10 mg/dose	IV Push Max: 10 mg/dose	IV Push Max: 10 mg/dose	IV Push maximum rate: 5 mg/min. ¹ Do not inject into small veins. ¹ Reversal Agent: Flumazenil
Digoxin in single bolus dose ≤ 0.5 mg (Lanoxin)	IV Push*	IV Push*	IV Push*		*Slow IV injection over 5 minutes or longer. ¹ Reversal Agent: Digoxin Immune Fab (Digibind)
Digoxin Immune Fab (Digibind) REVERSAL AGENT	IVPB	IVPB	IVPB		Reversal agent for digoxin toxicity. Administer by slow IV infusion over at least 30 minutes. ¹
Diltiazem (Cardizem) HIGH ALERT MEDICATION	IV Push IV Infusion	IV Push IV Infusion	IV Push IV Infusion (Non-titratable MAX dose: 15 mg/hr)		IV Push over 2 minutes. ¹ See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
Diphenhydramine (Benadryl)	IV Push	IV Push	IV Push	IV Push	Maximum rate is 25 mg/min. ¹ Avoid use with concomitant medications that can cause drowsiness. ¹

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DOBUTamine EXTRAVASATION RISK HIGH ALERT MEDICATION	IV infusion				See Policy CC.23 Intravenous Medication Administration in Critical Care Areas. Nuclear Medicine: See Policy IS.26 Pharmacologic Vasodilator Stress Test. IV Infusion via peripheral line permitted. Vesicant. ²⁻³
DOPamine BOXED WARNING EXTRAVASATION RISK HIGH ALERT MEDICATION	IV infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Vesicant ²⁻³ See Policy CC.22 Vasopressor IV Administration Through Peripheral Line
Droperidol (Inapsine) BOXED WARNING	IV* IV Infusion	IV* IV Infusion	IV* IV Infusion		*Administer IV slowly. ¹ See CPG.68 Initial Management of Acute Agitation in the Emergency Department Setting.
Enalaprilat (Vasotec) BOXED WARNING	IV Push*	IV Push*	IV Push*		*Slow intravenous injection over 5 minutes. ¹

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EPINEPHrine* (Adrenalin) HIGH ALERT MEDICATION INFILTRATION RISK Look-Alike Sound-Alike REVERSAL AGENT	IM IV Push IV Infusion**	IM	IM	IM	*Medication errors have occurred due to confusion with epinephrine products: <u>1 mg/mL (1mL vial, 1mL ampule, 30 mg/30mL MDV)</u> - IM administration indicated for anaphylaxis - See CPG.73 Initial Management of Anaphylaxis <u>0.1 mg/mL (1 mg/10mL pre-filled syringe)</u> - IV Push indicated for CPR - See ACLS guidelines <u>0.01 mg/mL (10 mcg/mL pre-filled syringe)</u> - See CPG.70 Intravenous Administration of Push Dose Vasopressors **See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Irritant. ³ See Policy CC.22 Vasopressor IV Administration Through Peripheral Line
Eptifibatide (Integrilin)	IV Push IV Infusion IVPB	IV Push IV Infusion IVPB	IV Push IV Infusion IVPB		Bolus doses should be withdrawn from a 10 mL vial into a syringe and administered by IV Push. ¹
Esmolol (Brevibloc) HIGH ALERT MEDICATION	IV Infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.

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Esomeprazole (Nexium)	IV Push* IV infusion	IV Push*	IV Push*	IV Push*	Reconstitute vial with 5 mL Sodium Chloride for injection. ¹ DO NOT reconstitute with a NS flush pre-filled syringe. *Slow IV Injection over 3 minutes. ¹
Ethacrynic Acid (Edecrin)	IV Push* IVPB	IV Push* IVPB	IV Push* IVPB		*Administer slowly through the tubing of a running infusion or by direct IV injection over several minutes. ¹
BOXED WARNING					
Famotidine (Pepcid)	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over 2 minutes. ¹
FentaNYL HIGH ALERT MEDICATION BOXED WARNING	IV Push IV infusion	IV Push (Provider must be present at bedside)			IV Push over 1-2 minutes. ¹ See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Reversal Agent: Naloxone
Flumazenil (Romazicon) BOXED WARNING REVERSAL AGENT	IV Push	IV Push	IV Push	IV Push	Reversal agent for benzodiazepines or sedation. Administer only through a freely running IV infusion into a large vein. Administer as a series of small injections. ¹
Folic acid (Folvite)	IVPB	IVPB	IVPB	IVPB	

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Fosphenytoin (Cerebyx) BOXED WARNING	IVPB	IVPB	IVPB	IVPB	Do not exceed 150mg PE/minute. Slower administration rates reduce the incidence of hypotension, arrhythmias as well as the severity of paresthesia and pruritus. ¹ Boxed warning for cardiovascular risk with rapid infusion.
Furosemide (Lasix)	IV Push IVPB IV infusion	IV Push IVPB IV infusion	IV Push IVPB IV infusion	IV Push IVPB (IV infusion for anasarca only)	IV Push up to 80 mg over 1-2 minutes. ¹ For higher does, administered as an infusion (not to exceed 4mg/min). ¹
Ganciclovir (Cytovene) EXTRAVASATION RISK	IVPB	IVPB	IVPB	IVPB	Should only be infused into veins with adequate blood flow to permit rapid dilution and distribution. ¹ Do not administer as a rapid or bolus IV injection due to increased risk of toxicity. Do not exceed dosage or infusion rate (give at a constant rate over 1 hour). ¹ Vesicant. ²⁻³
Glucagon REVERSAL AGENT	IM IV Push* IV Infusion	IM IV Push* IV Infusion	IM IV Push*	IM	Route and rate are dependent on indication. For hypoglycemia, IM or IV. ¹ For anaphylaxis refractory to epinephrine, slow IV injection over 5 minutes. ⁴ For Beta-blocker/calcium channel blocker toxicity, slow IV injection over 3-5 minutes and continuous

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					infusion may be used. ⁵ For diagnostic procedures, IV Push over 1 minute. ¹
Glycopyrrolate (Robinul) REVERSAL AGENT	IV Push				May be administered with or without dilution ¹
Haloperidol (Haldol) BOXED WARNING	IM IV Push*	IM IV Push*	IM IV Push*	IM	*IV Push doses up to 10 mg IV over 1 minute ¹ . If given IV, a baseline EKG is required. See CPG.69 Initial Management of Acute Agitation in the Emergency Department Setting
Heparin HIGH ALERT MEDICATION IDC required	IV Push IV infusion	IV Push IV infusion	IV Push IV infusion	IV Push IV infusion	See Policy 100.087 Anticoagulation Management and Attachment B for Heparin Protocol Reversal agent: Protamine
HydrALAZINE (Apresoline) Look-Alike Sound-Alike	IV Push	IV Push	IV Push	IV Push	Administration rates may differ based on indication.
Hydrocortisone (Solu-Cortef) Look-Alike Sound-Alike	IV Push IVPB IV Infusion	IV Push IVPB IV Infusion	IV Push IVPB IV Infusion	IV Push IVPB IV Infusion	IV Push over 30 seconds. IVPB over 10-30 minutes required for doses ≥ 500mg. ¹

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HYDRomorphone (Dilaudid) BOXED WARNING HIGH ALERT MEDICATION IDC required for PCA	IV Push PCA IV Infusion	IV Push PCA IV Infusion (comfort care only)	IV Push PCA IV Infusion (comfort care only)	IV Push PCA IV Infusion (comfort care only)	All nursing units may administer doses > 1 mg. Slow IV injection over 2-3 minutes as rapid IV Push has been associated with an increase in side effects especially respiratory depression and hypotension. ¹ See policy 100.235 Patient-Controlled Analgesia (PCA) Reversal agent: Naloxone
Immune Globulin Intravenous	IVPB	IVPB	IVPB		See policy PH.113 Intravenous Immune Globulin Dosing
Insulin, Regular Human HIGH ALERT MEDICATION IDC required for infusion	IV Push* IV infusion	IV Push* IV infusion	IV Push*	IV Push*	Only REGULAR insulin may be administered by the IV route. For continuous infusions, only one concentration is used: 100 unit / 100 mL (1 unit/mL). *May be administered IV Push for hyperkalemia followed by recommended point of care blood glucose monitoring (see hyperkalemia PowerPlans) Reversal agent: Dextrose, glucagon
Iron Sucrose (Venofer)	IVPB	IVPB	IVPB	IVPB	IVPB rate dependent on dose. ¹
Isoproterenol	IV Infusion				Restricted to Torsades refractory to magnesium treatment/infusion only. See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
Ketorolac (Toradol) BOXED WARNING	IV Push	IV Push	IV Push	IV Push	IV Push over at least 15 seconds. ¹

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Ketamine (Ketalar) BOXED WARNING	IM* IV infusion**				*See CPG.68 Initial Management of Acute Agitation in the Emergency Department Setting. **See Policy CC.23 Intravenous Medication Titration in Critical Care Areas
Labetalol (Trandate, Normodyne)	IV Push* IV infusion	IV Push*	IV Push*		*IV Push over 2 minutes. ¹ Patient should remain supine to prevent postural hypotension. ¹ See policy CC.23 Intravenous Medication Titration in Critical Care Areas. See policy 100.226 Acute Stroke Management/ Code Stroke, Attachment 7 Blood Pressure Management Reference.
Lidocaine HIGH ALERT MEDICATION	IV Push IV infusion				IV Push administration rate 25 – 50 mg/min. ¹ Administer IV infusion via infusion pump and guardrails with constant ECG monitoring. ¹ Prescriber-driven titration only.
LevEIRAcetam (Keppra) Look-Alike/Sound-Alike	IVPB	IVPB	IVPB	IVPB	Infuse over 15 minutes.
LevoFLOXacin (Levaquin) Look-Alike/Sound-Alike	IVPB	IVPB	IVPB	IVPB	

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Levothyroxine (Synthroid) BOXED WARNING	IV Push IV Infusion*	IV Push	IV Push	IV Push	IV Push reconstituted with NS 5 mL not to exceed a rate of 100 mcg/min. ¹ *T4 Protocol for IV Infusion: Prescriber driven dosing and Prescriber driven titration only.
Lorazepam (Ativan) BOXED WARNING	IV Push IV Infusion*	IV Push Max dose: 32 mg/24 hrs	IV Push Max dose: 16 mg/24 hrs	IV Push Max dose: 16 mg/24 hrs	IV Push diluted with equal volume sterile water, NS, or D5W over a max rate of 2 mg/min. ¹ *See CC.23 Intravenous Medication Titration in Critical Care Areas Reversal Agent: Flumazenil
Magnesium Sulfate HIGH ALERT MEDICATION IDC required for Magnesium 20 gm/500mL	IVPB IV infusion	IVPB IV infusion	IVPB IV infusion	IVPB	Infuse 1 gram per hour. ¹ See OB.05 management of Preeclampsia and Hypertension in Pregnancy Disorders. See PH.115 Medication Boxes and Kits, Preeclampsia Medication box for dosing guidelines See OB.47 Magnesium Sulfate for Pre-Eclampsia and Tocolytic therapy. See Policy CC.28 Targeted Temperature (TTM) and Shivery Protocol.

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<p>Mannitol</p> <p>EXTRAVASATION RISK</p>	<p>IV Push* IV infusion**</p>	<p>IV Push* IV infusion**</p>	<p>IV Push*</p>	<p>IV Push* (Dialysis Nurse must administer)</p>	<p>Each 50 mL of Mannitol 25% should be IVP over 5 minutes. Adjust rate of administration based on patient condition and response.¹ For intracranial pressure management, mannitol is administered over 5-15 minutes.⁶</p> <p>*See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.</p> <p>Vesicant at concentrations >20%.²⁻³ Administer IV infusions preferably into a central line,¹ but may be given via peripheral access.⁶</p> <p>Inspect for crystals prior to use; if crystals visible, return mannitol to Pharmacy. Use administration sets with a final in-line filter.¹</p>
<p>Meperidine (Demerol)</p> <p>BOXED WARNING</p>	<p>IV Push*</p>	<p>IV Push*</p>	<p>IV Push*</p>	<p>IV Push*</p>	<p>Restricted to rigors or shivering in oncology, post-Op, and following amphotericin administration.</p> <p>*Administered diluted via slow IV injection and patient should be lying down.¹</p>
<p>Methocarbamol (Robaxin)</p>	<p>IV Push* IVPB</p>	<p></p>	<p></p>	<p></p>	<p>Restricted to use in ICU1 patients only.</p> <p>*Administer injection undiluted at a maximum rate of 300 mg/min (3 mL/min). Exercise caution during IV administration to avoid extravasation. Position patient</p>

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					in recumbent position during and for at least 10 to 15 minutes following IV administration. ¹
Methylene Blue REVERSAL AGENT	IV Push IVPB				Reversal agent for drug induced encephalopathy and methemoglobinemia. Inject IV over 5-30 minutes. ¹ Only compatible with D5W. ¹
Methylergonovine (Methergine)	IV Push	IV Push	IV Push		IV Push over at least 1 minute and monitor blood pressure. ¹
MethylPREDNISolone (Solu-Medrol) LASA	IV Push IVPB IV infusion	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over several minutes. ¹ Rate dependent upon dose and severity of condition.
Metoclopramide (Reglan) BOXED WARNING	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over 1- 2 minutes for doses ≤ 10 mg. ¹ IVPB administered over at least 15 minutes. ¹
Metoprolol (Lopressor) BOXED WARNING	IV Push	IV Push	IV Push		IV Push over 1-2 minutes ¹
Midazolam (Versed) BOXED WARNING HIGH ALERT MEDICATION	IV Push IV Infusion	IV Push	IV Push	IV Push	IV Push over at least 2 minutes. ¹ See Policy CC.23 Intravenous Medication Titration in Critical Care Areas Reversal Agent: Flumazenil

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Milrinone HIGH ALERT MEDICATION	IV Infusion				Loading dose over 10 minutes followed by continuous infusion. ¹ See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
Morphine sulfate BOXED WARNING HIGH ALERT MEDICATION IDC for PCA and Infusion	IV Push* PCA IV Infusion	IV Push* PCA IV Infusion	IV Push* PCA IV Infusion	IV Push* (MAX: 5mg/dose) PCA IV Infusion (Comfort measures only)	*Slow IV injection over 4-5 minutes because rapid administration may result in chest wall rigidity. ¹ See Policy 100.235 Patient-Controlled Analgesia (PCA). See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Reversal Agent: Naloxone
Nafcillin	IVPB	IVPB	IVPB	IVPB	Neither a vesicant nor an irritant.
Naloxone (Narcan) REVERSAL AGENT	IV Push IV Infusion	IV Push IV Infusion	IV Push	IV Push	Reversal agent for opiate overdose. IV Push undiluted over 30 seconds. ⁷ See Policy 100.253 naloxone for opioid toxicity and CPG.75 Opioid Toxicity and Naloxone Treatment.
Neostigmine (Bloxiverz) REVERSAL AGENT	IV Push	IV Push			Reversal agent for neuromuscular blockade. IV Push over at least 1 minute. ¹

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niCARDipine HIGH ALERT MEDICATION INFILTRATION RISK	IV Infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. See Policy 100.226 Acute Stroke Management/ Code Stroke, attachment 7 Blood Pressure Management. Irritant. ³ Do not administer through small veins and change the infusion site every 12 hours if a peripheral vein is used. ¹
Nitroglycerin HIGH ALERT MEDICATION	IV infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
NitroPRUSSide (Nipride) BOXED WARNING HIGH ALERT MEDICATION	IV Infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
NORepinephrine (Levophed) BOXED WARNING HIGH ALERT MEDICATION Look-Alike/Sound-Alike EXTRAVASATION RISK	IV Infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Vesicant. ¹⁻² See Policy CC.22 Vasopressor IV Administration Through Peripheral Line
Octreotide (Sandostatin)	IV Push* IV infusion	IV Push* IV infusion	IV Push* IV infusion	IV Push* IV infusion	IV Push over 3 minutes. ¹ See Policy DM.001: Check point of care blood glucose 4 times a day for at least 24 hours.

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Ondansetron (Zofran)	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push IVPB	IV Push over no less than 30 second, preferably 2 to 5 minutes. ¹
Oxytocin (Pitocin) BOXED WARNING HIGH ALERT MEDICATION IDC required for induction	IV Infusion	IV Infusion	IV Infusion	IV Infusion*	See Policy OB.30 Oxytocin for Labor Induction/Augmentation. *For fetal demise, IV infusions are allowed on medical-surgical units.
Pamidronate (Aredia)	IVPB	IVPB	IVPB	IVPB	Administer as a single dose IV infusion over 2 to 24 hours in a dedicated line. ¹
Paricalcitol (Zemlar)	IV Push	IV Push	IV Push	IV Push	Administer as an IV bolus dose through a hemodialysis vascular access port during dialysis. Do not inject directly into the vein. ¹
Phenobarbital EXTRAVASATION RISK	IV Push	IV Push	IV Push		Inject IV at a rate not to exceed 60 mg/min. ¹ Vesicant. ²⁻³ Do not inject into small veins. Inject into a larger vein to minimize the risk of irritation and resultant thrombosis. Avoid perivascular extravasation; stop the injection for any reported limb pain. ¹
PHENYL ephrine (Neo-Synephrine) BOXED WARNING EXTRAVASATION RISK HIGH ALERT MEDICATION	IV Push* IV Infusion *				*See CPG.70 Intravenous Administration of Push Dose Vasopressors. **See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. See Policy CC.22 Vasopressor IV Administration Through Peripheral Line

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Phenytoin (Dilantin) BOXED WARNING Purple Glove Syndrome**	IV Push* IVPB	IV Push* IVPB	IV Push* IVPB		*Must be administered slowly. Maximum IV administration rate is 50 mg/min. ¹ Use an in-line 0.22 to 0.5 in-line filter with IV administration. ¹ **Inject directly into a large peripheral or central vein through a large gauge catheter. Flush IV catheter with sterile saline prior to and following each IV injection to avoid local venous irritation caused by alkalinity of the solution. ¹ Monitor electrocardiogram, blood pressure, and respiratory function continuously during IV administration and for a period after administration ¹ Boxed Warning for cardiovascular risk with rapid infusion.
Physostigmine REVERSAL AGENT	IM IV Push				Administer as a slow controlled rate not exceeding 1 mg/min; however, slower rates have been recommended (0.5 mg/min). ¹
Phytonadione (Vitamin K1) BOXED WARNING REVERSAL AGENT	IVPB	IVPB	IVPB	IVPB	Reversal agent for anticoagulant. IV doses are prepared in 50 mL of D5W and given over 60 minutes. See CPG.56 Management of Bleeding Associated with Anticoagulants and Antiplatelet Therapies.

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Piperacillin-Tazobactam (Zosyn)	IVPB	IVPB	IVPB	IVPB	See PH.119 Piperacillin-Tazobactam (Zosyn) Adult Dosing Protocol and Attachment A: IV Compatibility.
Potassium Chloride EXTRAVASATION RISK HIGH ALERT MEDICATION	IVPB	IVPB	IVPB	IVPB	See PH.83 Intravenous Potassium Administration for Adults. Vesicant. ¹⁻²
Potassium Phosphate HIGH ALERT MEDICATION	IVPB	IVPB	IVPB	IVPB	See PH.83 Intravenous Potassium Administration for Adults. Do not infuse with calcium-containing intravenous fluids. ¹
Procainamide (Pronestyl) BOXED WARNING HIGH ALERT MEDICATION	IV infusion				See Policy CC.23 Intravenous Medication Titration in Critical Care Areas.
Pro CHLORPER azine (Compazine) BOXED WARNING	IV Push	IV Push	IV Push	IV Push	The maximum IV rate should not exceed 5 mg/min. Do not use bolus injection. ¹

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Propofol (Diprivan) HIGH ALERT MEDICATION	Slow IV Push* IV infusion				*Slow IV Push allowed for moderate sedation if Prescriber present. See Policy 100.070 Moderate and Deep Sedation. See Policy CC.23 Intravenous Medication Titration in Critical Care Areas. Propofol 200 mg/20 mL vials are to be used to prime the line to minimize waste. Tubing and unused emulsion must be discarded after 12 hours from spiking the vial. ¹
Propranolol (Inderal)	IV Push	IV Push	IV Push		Rate of administration should not exceed 1 mg/min. ¹
Protamine Sulfate BOXED WARNING REVERSAL AGENT	IV Push*	IV Push*	IV Push*	IV Push*	Reversal agent for unfractionated heparin and low molecular weight heparin. *Administer by very slow IV injection over 10 minutes in doses that do not exceed 50mg. ¹ See Boxed Warning for adverse effects as rapid rate of administration is a risk factor.
Prothrombin complex (Kcentra; 4F-PCC) BOXED WARNING REVERSAL AGENT	IVPB	IVPB	IVPB		Reversal agent for vitamin k antagonist See CPG.56 Management of Bleeding Associated with Anticoagulants and Antiplatelets.

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Rocuronium HIGH ALERT MEDICATION PARALYZING AGENT	IV Push				Provider must be present for intubation or proning. Reversal Agent: Neostigmine, Sugammadex
Ropivacaine	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Elastomeric Infusion Pump	Ropivacaine 0.2% 100 mL is used as a continuous nerve block infused via OnQ pump (elastomeric infusion pump)
Sodium Bicarbonate EXTRAVASATION RISK	IV Push* IV Infusion	IV Infusion	IV Infusion	IV Infusion	Undiluted hypertonic 8.4% sodium bicarbonate may be given by IV injection for cardiac arrest. ¹ *Slow IV Injection over 5 minutes for cardiac arrest due to hyperkalemia. ⁵ Vesicant at hypertonic concentrations. ²⁻³
Sodium Chloride 2% HIGH ALERT MEDICATION IDC required	IVPB	IVPB			For moderate hyponatremia. See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.
Sodium Chloride 3% EXTRAVASATION RISK HIGH ALERT MEDICATION IDC required	IV Push* IVPB	IVPB			*For severe hyponatremia: 100 mL over 10 minutes See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.
Sodium Chloride 23.4% EXTRAVASATION RISK HIGH ALERT MEDICATION IDC required	IV Push*				*For neurological emergencies only: 30 mL over 10-20 minutes (central line only). See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline. Vesicant. ²⁻³

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Sodium Thiosulfate REVERSAL AGENT	IVPB	IVPB	IVPB		Reversal agent for cyanide poisoning. Dose and rate dependent on indication.
Succinylcholine (Anectine) BOXED WARNING HIGH ALERT MEDICATION PARALYZING AGENT	IV Push				Provider must be present for intubation.
Thiamine	IVPB	IVPB	IVPB	IVPB	
Tranexamic acid	IVPB	IVPB	IVPB	IVPB	See CPG.56 Management of Bleeding Associated with Anticoagulants and Antiplatelet Therapies.
Valproate Sodium	IVPB	IVPB	IVPB	IVPB	Infuse over 60 minutes or at a max rate of 20 mg/min. ¹
Vancomycin INFILTRATION RISK	IVPB	IVPB	IVPB	IVPB	Irritant with vesicant like properties. ²⁻³
Vasopressin EXTRAVASATION RISK HIGH ALERT MEDICATION	IV Infusion				See CC.23 Intravenous Medication Titration in Critical Care Units. Vesicant. ²⁻³

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Vecuronium BOXED WARNING HIGH ALERT MEDICATION PARALYZING AGENT	IV Push IV infusion				Patient must be intubated with adequate pain control and sedation prior to and during administration of neuromuscular blockade as paralyzing agents do not provide pain control, sedation, or amnestic effects. Boxed Warning for appropriate use by trained individuals familiar with its actions, characteristics, and hazards. Reversal Agent: Neostigmine, Sugammadex
Verapamil	IV Push	IV Push	IV Push		Administer bolus doses over at least 2 minutes under continuous ECG and blood pressure monitoring. ¹

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Related Policies:

Boxed Warning Drugs. See Policy PH.78 Boxed Warning Drugs

High Alert Medications. See Policy PH.70 High Alert Medications

Independent Double Check. See Policy PH.70 High Alert Medications

Look-Alike/Sound-Alike. See Policy 100.081 Avoiding “Look-Alike/Sound-Alike” Medication Errors

Vesicants or Irritants. See Policy 100.250 Management of Extravasation/Infiltration Due to Non-Chemotherapy Medication Administration

Abbreviations:

≤ Less than or equal to

ACLS Advanced cardiac life support

ACTH adrenocorticotropin hormone

AFIB Atrial fibrillation

D5W 5% Dextrose (in water) injection

ECG electrocardiography

ED Emergency Department

hr hour

ICU Intensive Care Unit

IDC Independent Double Check

IM Intramuscular

IV Intravenous

IVPB Intravenous piggyback

kg kilogram

LASA Look-Alike/Sound-Alike

mcg microgram

MDV multidose vial

mg milligram

min minute

mL milliliter

NS 0.9% sodium chloride solution

OR Operating Room

PACU post anesthesia care unit