












Intravenous Medication Guidelines for Adults


This document serves as a guideline. Deviations may occur with the approval of the Nursing Supervisor and/or Director of Nursing







Medication	Patient Classification				Considerations and Precautions:
	Acuity: 1 or 2 (1:1 or 1:2)	Acuity: 3 (1:3)	Acuity: 4 (1:4)	Acuity: 5 (1:5)	
 Do not administer					<ul style="list-style-type: none"> - Information here is limited. User should utilize appropriate drug reference for complete drug information. - Emergency/reversal medications may be given on all acuity levels during a rapid response.

Adenosine (Adenocard)	IV Push Infusion*	IV Push	IV Push	IV Push	*Nuclear Medicine: IV Infusion via peripheral line permitted. See Policy IS.26 Pharmacologic Stress Test.
Alteplase (Ativase, TPA) 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 and Intra Arterial (IA) Infusions are permitted and continued in ICU1
Aminocaproic Acid (Amicar)	IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion		
Aminophylline	IV Push* IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion	*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 <small>AFIB rate control only</small>		Vesicant ²⁻³
Angiotensin II (Giapreza) High Alert Medication	IV Infusion				See policy ICU.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 Associated with Anticoagulants and Antiplatelet Therapies
Buprenorphine (Buprenex)	IV Push Subcut depot*	IV Push Subcut depot*	IV Push Subcut depot*	IV Push Subcut depot*	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

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Boxed Warning Look-Alike/Sound-alike					*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 Stress Test.
Calcium Chloride 10% Extravasation Risk High Alert Medication	IV Push IVPB	IVPB	IVPB	IVPB	Vesicant ²⁻³
Calcium Gluconate 10% Extravasation Risk High Alert Medication	IV Push IVPB	IVPB	IVPB	IVPB	Vesicant ²⁻³
ChloroproMAZINE Boxed Warning Look-Alike/Sound-alike	IV Push IVPB	IVPB	IVPB	IVPB	
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

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					Critical Care Areas. Reversal Agent: Neostigmine
Dantrolene	IV Push IVPB				See policy 100.097 Acute Treatment Guidelines for Malignant Hyperthermia.
Deferoxamine (Desferal)	IV Infusion				Reversal agent for iron toxicity.
Reversal Agent					
Desmopressin Acetate (DDAVP)	IV Push IVPB	IV Push IVPB	IVPB	IVPB	Indication specific restrictions due to monitoring Hyponatremia and Diabetes Insipidus 1:1 to 1:3 Uremic bleeding (no restriction)
High Alert Medication					
Dexmedetomidine (Precedex)	IV Infusion				See Policy ICU.23 Intravenous Medication Administration in Critical Care Areas
High Alert Medication					
Digoxin in single bolus dose < 0.5 mg (Lanoxin)	IV Push	IV Push	IV Push		Reversal Agent: Digoxin Immune Fab (Digibind)
Digoxin Immune Fab (Digibind)	IVPB	IVPB	IVPB		Reversal Agent for digoxin toxicity
Reversal Agent					
Diltiazem (Cardizem)	IV Push IV Infusion	IV Push IV Infusion	IV Push IV Infusion <small>(non-titratable Max: 15 mg/hr)</small>		See policy ICU.23 Intravenous Medication Titration in Critical Care Areas
High Alert Medication					

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DOBUTamine Extravasation Risk High Alert Medication	IV Infusion				See policy ICU.23 Intravenous Medication Titration 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 ICU.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	IV		See CPG.68 Initial Management of Acute Agitation in the Emergency Department Setting
Enalaprilat (Vasotec) Boxed Warning	IV Push	IV Push	IV Push		
EPINEPHrine (Adrenalin)* Infiltration Risk High Alert Medication 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 (1 mL vial/ampule, 30mg/30mg MDV)</u> - IM administration indicated for anaphylaxis - See CPG.73 Initial Management of Anaphylaxis

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 Do not administer					<ul style="list-style-type: none"> - Information here is limited. User should utilize appropriate drug reference for complete drug information. - Emergency/reversal medications may be given on all acuity levels during a rapid response.

					<p><u>0.1 mg/mL (10 mcg/mL pre-filled syringe)</u></p> <ul style="list-style-type: none"> - IV Push indicated for CPR - See ACLS guidelines <p><u>0.01 mg/mL (10 mcg/mL pre-filled syringe)</u></p> <ul style="list-style-type: none"> - See CPG.70 Intravenous Administration of Push Dose Vasopressors <p>** See policy ICU.23 Intravenous Medication Titration in Critical Care Areas Irritant.³ See policy CC.22 Vasopressor IV Administration Through Peripheral Line</p>
Eptifibatide (Integrelin)	IV Push IV Infusion				
Esmolol (Brevibloc) High Alert Medication	IV Infusion				See policy ICU.23 Intravenous Medication Titration in Critical Care Areas
Fenta NYL High Alert Medication Boxed Warning	IV Push IV Infusion				<p>*Slow IV Push allowed for moderate sedation if prescriber present. See policy 100.070 Moderate and Deep Sedation.</p> <p>See policy ICU.23 Intravenous Medication Titration in Critical Care Areas.</p> <p>Reversal Agent: Naloxone</p>
Glucagon	IV Push IV Infusion	IV Push IV Infusion	IV Push	IV Push	

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Reversal Agent					
Glycopyrolate (Robinul)	IV Push				
Reversal Agent					
Haloperidol (Haldol)	IM IV Push*	IM IV Push*	IM IV Push*	IM	*If given IV Push, a baseline EKG is required. See CPG.69 Initial Management of Acute Agitation in the Emergency Department Setting
Boxed Warning					
Insulin, regular human	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)
High Alert Medication IDC required for infusion					*Regular insulin may be administered IV Push for hyperkalemia followed by recommended point of care blood glucose monitoring (see hyperkalemia PowerPlans)
					Reversal agent: Dextrose, glucagon
Isoproterenol	IV Infusion				Restricted to Torsades refractory to magnesium treatment/infusion only.
					See policy ICU.23 Intravenous Medication Titration in Critical Care Areas
Ketamine (Ketalar)	IM* IV Infusion**				*See CPG.68 Initial Management of Acute Agitation in the Emergency Department Setting

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 Do not administer					<ul style="list-style-type: none"> - Information here is limited. User should utilize appropriate drug reference for complete drug information. - Emergency/reversal medications may be given on all acuity levels during a rapid response.

Boxed Warning					**See policy ICU.23 Intravenous Medication Titration in Critical Care Areas
Labetalol (Trandate, Normodyne)	IV Push* IV Infusion	IV Push*	IV Push*		See policy ICU.23 Intravenous Medication Titration in Critical Care Areas See policy 100.226 Acute Stroke Management/ Code Stroke, Attachment 7 Blood Pressure Management Reference
Levothyroxine (Synthroid) Boxed Warning	IV Push IV Infusion*	IV Push	IV Push	IV Push	*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 hours	IV Push Max dose: 16 mg/24 hours	IV Push Max dose: 16 mg/24 hours	*See ICU.23 Intravenous Medication Titration in Critical Care Areas Reversal Agent: Flumazenil
Magnesium Sulfate High Alert Medication IDC required for Magnesium 20 gm/ 500 mL	IVPB IV Infusion	IVPB IV Infusion	IVPB IV Infusion	IVPB	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 Shivering Protocol

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 Do not administer					<ul style="list-style-type: none"> - Information here is limited. User should utilize appropriate drug reference for complete drug information. - Emergency/reversal medications may be given on all acuity levels during a rapid response.

Mannitol Extravasation Risk	IV Push* IV Infusion	IV Push* IV Infusion	IV Push*	IV Push* <small>Dialysis Nurse must administer</small>	<p>*See CPG.72 Management of Neurological Emergency and Hyponatremia and 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. If running as a bolus on the IV pump, use administration sets with a final in-line filter.¹ If drawing up mannitol from a vial, use a filter needle.</p>
Methylene Blue Reversal Agent	IV Push IVPB				Reversal agent for drug induced encephalopathy and methemoglobinemia.
Methylergonovine (Methergine)	IV Push	IV Push	IV Push		
Metoprolol (Lopressor) Boxed Warning	IV Push	IV Push	IV Push		
Midazolam (Versed) High Alert Medication Boxed Warning	IV Push IV Infusion	IV Push	IV Push	IV Push	See policy ICU.23 Intravenous Medication Titration in Critical Care Areas Reversal Agent: Flumazenil
Milrinone	IV Infusion				See policy ICU.23 Intravenous Medication

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High Alert Medication					Titration in Critical Care Areas
Naloxone (Narcan) Reversal Agent	IV Push IV Infusion	IV Push IV Infusion	IV Push	IV Push	Reversal agent for opiate overdose. See policy 100.253 Naloxone for Opioid Toxicity and CPG.75 Opioid Toxicity and Naloxone Treatment.
Neostigmine (Bloxiverz) Reversal Agent	IV Push				Reversal agent for neuromuscular blockade.
NiCARDipine High Alert Medication Infiltration Risk	IV Infusion				See policy ICU.23 Intravenous Medication Titration in Critical Care Areas See policy 100.226 Acute Stroke Management/ Code Stroke, Attachment 7 Blood Pressure Management. Irritant. ³
Nitroglycerin High Alert Medication	IV Infusion				See policy ICU.23 Intravenous Medication Titration in Critical Care Areas
NitroPRUSSide (Nipride) High Alert Medication Boxed Warning	IV Infusion				See policy ICU.23 Intravenous Medication Titration in Critical Care Areas

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NOR epinephrine (Levophed) High Alert Medication Boxed Warning Look-Alike/Sound-Alike Extravasation Risk	IV Infusion				See policy ICU.23 Intravenous Medication Titration in Critical Care Areas Vesicant. ¹⁻² See policy ICU.22 Vasopressor IV Administration Through a Peripheral Line
Phenobarbital Extravasation Risk	IVPB* IV Push	IVPB* IV Push	IVPB* IV Push		Inject at a rate not to exceed 60 mg/min. ¹ *Threshold for IVPB are doses >130 mg Caution in patients at risk for torsade de pointes and respiratory depression. Vesicant. ²⁻³
PHENYL ephrine (Neo-Synephrine) High Alert Medication Boxed Warning Extravasation Risk	IV Push* IV Infusion**				*See CPG.70 Intravenous Administration of Push Dose Vasopressors. ** See policy ICU.23 Intravenous Medication Titration in Critical Care Areas See policy ICU.22 Vasopressor IV Administration Through Peripheral Line.
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 0.22-0.5 in-line filter with IV administration. ¹

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					Boxed Warning for cardiovascular risk with rapid infusion
Propofol (Diprivan) High Alert Medication	Slow IV Push IV Infusion				See policy ICU.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.
Propranolol (Inderal)	IV Push	IV Push	IV Push		
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
Rocuronium High Alert Medication Paralyzing agent	IV Push				Provider must be present for intubation or proning. Reversal agent: Neostigmine, Sugammadex
Sodium Bicarbonate Extravasation Risk	IV Push 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

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					Vesicant at hypertonic concentrations. ²⁻³
Sodium Chloride 2%	IVPB	IVPB			For moderate hyponatremia
High Alert Medication IDC required					See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.
Sodium Chloride 3%	IV Push* IVPB	IVPB			*For acute, symptomatic hyponatremia or neurological emergencies: 100 mL over 10 minutes. See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.
High Alert Medication IDC required Extravasation Risk					
Sodium Chloride 23.4%	IV Push*				*For neurological emergencies only: 30 mL over 10-20 minutes (central line only)
High Alert Medication IDC required Extravasation Risk					See CPG.72 Management of Neurological Emergency and Hyponatremia with Hypertonic Saline.
					Vesicant. ²⁻³
Sodium Thiosulfate	IVPB	IVPB	IVPB		Reversal agent for cyanide poisoning.
Reversal Agent					Dose and rate dependent on indication.
Succinylcholine (Anectine)	IV Push				Provider must be present.

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High Alert Medication Paralyzing Agent Boxed Warning					
Vasopressin High Alert Medication Extravasation Risk	IV Infusion				See ICU.23 Intravenous Medication Titration in Critical Care Units. Vesicant. ²⁻³
Vecuronium High Alert Medication Paralyzing Agent Boxed Warning	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		

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Abbreviations:

< Less than or equal to

ACLS Advanced Cardiac Life Support

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

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

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References:

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