

# SOUTH PLAINS EMERGENCY MEDICAL SERVICE

## PROTOCOL SUPPLEMENT 2010

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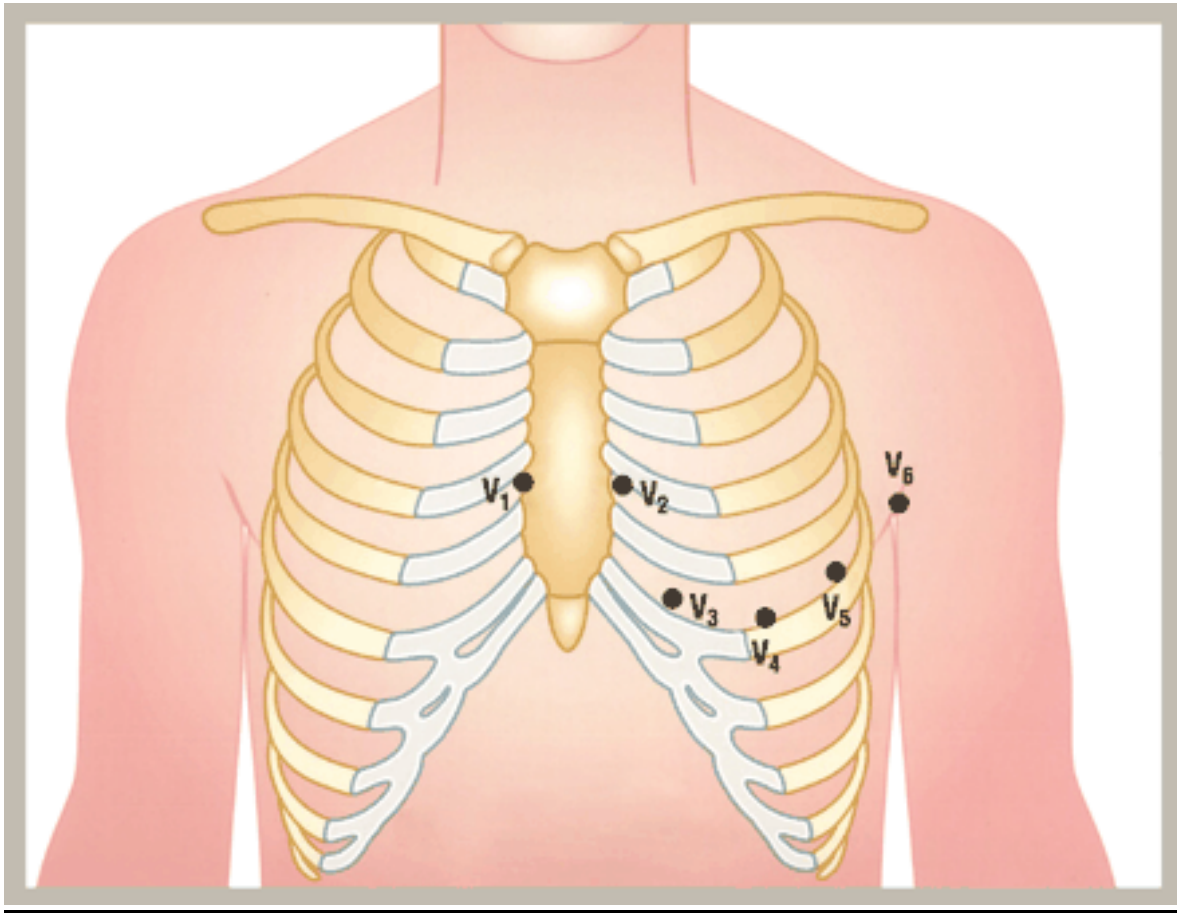
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# **SUPPLEMENT**

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## LEFT SIDED V-LEAD PLACEMENT



**V<sub>1</sub>: Right 4<sup>th</sup> intercostal space**

**V<sub>2</sub>: Left 4<sup>th</sup> intercostal space**

**V<sub>3</sub>: Halfway between V<sub>2</sub> and V<sub>4</sub>**

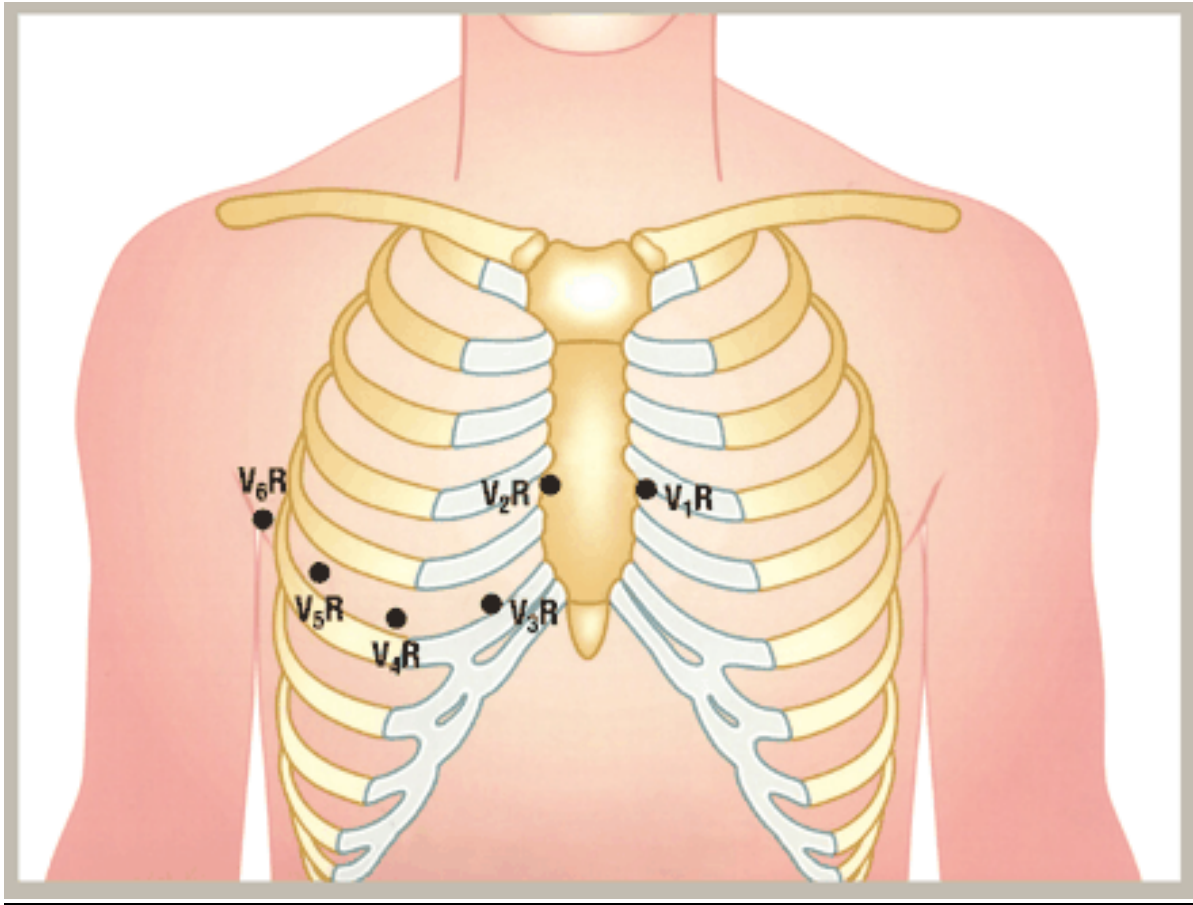
**V<sub>4</sub>: Left 5<sup>th</sup> intercostal space, mid-clavicular line**

**V<sub>5</sub>: Horizontal to V<sub>4</sub>, anterior axillary line**

**V<sub>6</sub>: Horizontal to V<sub>5</sub>, mid-axillary line**

In an emergent situation and time does not permit a complete right sided EKG, move **V<sub>4</sub>** to the **V<sub>4R</sub>** position to confirm a right ventricular infarct.

## RIGHT SIDED V-LEAD PLACEMENT



**V<sub>1</sub>R:** Left 4<sup>th</sup> intercostal space

**V<sub>2</sub>R:** Right 4<sup>th</sup> intercostal space

**V<sub>3</sub>R:** Halfway between V<sub>2</sub> and V<sub>4</sub>

**V<sub>4</sub>R:** Right 5<sup>th</sup> intercostal space, mid-clavicular line

**V<sub>5</sub>R:** Horizontal to V<sub>4</sub>, anterior axillary line

**V<sub>6</sub>R:** Horizontal to V<sub>5</sub>, mid-axillary line

In an emergent situation and time does not permit a complete right sided EKG, move V<sub>4</sub> to the V<sub>4</sub>R position to confirm a right ventricular infarct.

## ACTIVATED CHARCOAL

<b>INDICATIONS</b>	Used to treat certain types of poisonings and overdoses
<b>ADMINISTRATION</b>	PO
<b>DOSAGE</b>	
<b>ADULT</b>	1g/kg up to a max of 50g
<b>PEDIATRIC</b>	1g/kg up to a max of 50g
<b>THERAPEUTIC EFFECTS</b>	Binds and absorbs various chemicals and poisonous compounds, thereby reducing their absorption into the body
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Caustic/Corrosive substances</li> <li>• Cyanide poisonings</li> <li>• Semi-conscious or unconscious patients</li> </ul>
<b>SIDE EFFECTS</b>	Abdominal cramping, constipation, dark stools, and nausea and vomiting
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Online medical control orders required</li> <li>• Does not absorb all drugs or toxic substances (i.e. Cyanide, Lithium, Iron, Lead, Arsenic, etc)</li> <li>• Has no effect in methanol or organophosphate poisonings</li> <li>• Has little therapeutic value in caustic alkalis and acid poisonings</li> <li>• Should not be given with ice cream, milk, sherbet or syrup of Ipecac</li> </ul>

# ADENOSINE

(Adenocard)

<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Paroxysmal Supraventricular Tachycardia</li><li>• Supraventricular Tachycardia</li><li>• Wolfe-Parkinson-White Syndrome</li></ul>
<b>ADMINISTRATION</b>	Rapid IV or IO push with immediate 10cc NS flush
<b>DOSAGE</b>	
<b>ADULT</b>	Initial dose is 12mg rapid IV or IO push, may repeat once at 12mg rapid IV or IO push
<b>PEDIATRIC</b>	0.1mg/kg rapid IV or IO push to a max of 12mg
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Slows conduction time through AV node</li><li>• Interrupts reentry pathways through AV node</li><li>• Restores Sinus Rhythm in patients with SVT</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Hypersensitivity</li><li>• 2<sup>nd</sup> or 3<sup>rd</sup> degree AV blocks</li><li>• Sinus node dysfunction, such as sick sinus syndrome or symptomatic bradycardia</li><li>• Atrial Flutter/Atrial Fibrillation</li><li>• Ventricular Tachycardia</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Transient AV block, Asystole and other Dysrhythmias</li><li>• Chest pressure</li><li>• Dizziness</li><li>• Flushing</li><li>• Nausea/Vomiting</li><li>• Shortness of Breath</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Onset is generally within less than one minute</li><li>• Adverse effects are usually short lived and easily tolerated</li><li>• Effects may be more pronounced in patients on Dipyridamole</li><li>• Effects may be attenuated in patients on Theophylline preparations</li></ul>

# ALBUTEROL

(Ventolin)

<b>INDICATIONS</b>	Acute Bronchospasm, Respiratory distress, Allergic reaction, CHF
<b>ADMINISTRATION</b>	Hand held Nebulizer, Nebulizer Mask, Inline ETT Nebulizer
<b>DOSAGE</b>	
<b>ADULT</b>	2.5mg/3cc
<b>PEDIATRIC</b>	2.5mg/3cc
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Decreased bronchospasm via beta receptors</li><li>• Improves pulmonary function</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Hypersensitivity to any of the contents of the solution</li><li>• Tachydyrhythmias</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Cough</li><li>• Dizziness or Nervousness</li><li>• Nausea</li><li>• Tachycardia</li><li>• Tremor</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	May be nebulized via ETT in intubated asthmatics or COPD patients

## AMIODARONE (Cordarone)

<b>INDICATIONS</b>	Ventricular Fibrillation, Ventricular Tachycardia, SVT
<b>ADMINISTRATION</b>	IVP, IO or IV infusion
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• Pulseless VF/VT-Initial 300mg IVP or IO</li> <li>• Pulseless VF/VT- Repeat 150mg IVP or IO</li> <li>• Stable V-Tach-150mg over 10 minutes, may repeat every 10 minutes to a max of 450mg</li> <li>• SVT-150mg IV or IO over 10 minutes. May be repeated once if needed.</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• Pulseless VF/VT Initial-5mg/kg to a max of 300mg IV or IO May repeat once in 3-5 minutes at 2.5mg/kg to a max of 150mg</li> <li>• V-Tach with a pulse-5mg/kg, IVP or IO over 20 minutes to a max of 150mg</li> <li>• SVT-5mg/kg, IV or IO over 20 minutes, to a max of 150mg</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Prolongs action potential and refractory period</li> <li>• Reduces ventricular dysrhythmias and raises fibrillatory threshold</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Cardiogenic shock</li> <li>• Hypersensitivity to drug</li> <li>• 2<sup>nd</sup> or 3<sup>rd</sup> degree AV block</li> <li>• Severe Sinus Bradycardia</li> <li>• Severe sinus node dysfunction</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Hypotension</li> <li>• Bradycardia</li> <li>• Asystole</li> <li>• PEA</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Serial use of calcium channel blockers, Beta blockers and other antiarrhythmics may cause additive hypotensive bradycardia and proarrhythmogenic effects</li> <li>• Draw up slowly to prevent bubbling</li> </ul>

# ASPIRIN

<b>INDICATIONS</b>	Myocardial Infarction, Chest Pain
<b>ADMINISTRATION</b>	Chewed PO
<b>DOSAGE</b>	
<b>ADULT</b>	1 Adult ASA 325mg
<b>PEDIATRIC</b>	Not Indicated
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Inhibits platelet aggregation by blocking formation of Thromboxane A<sub>2</sub></li> <li>• Reduces overall mortality of Acute MI</li> <li>• Reduces non-fatal re-infarction</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity to Aspirin</li> <li>• Active bleeding condition or ulcer</li> <li>• Pregnancy</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Heartburn</li> <li>• Indigestion</li> <li>• Nausea</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	Patients on Coumadin (Warfarin) <b>MAY</b> take Aspirin in the acute setting

# ATROPINE

## (ATROPINE, COMPONENT OF MARK-I AUTO INJECTOR)

<b>INDICATIONS</b>	Symptomatic Bradycardia, Asystole, Pulseless Electrical Activity, Organophosphate Poisoning and prior to RSI in patients < 16 y/o
<b>ADMINISTRATION</b>	IV, IO, ETT
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• Symptomatic Bradycardia: 0.5mg IVP every 3-5minutes to a max of 3mg.</li> <li>• Asystole: 1mg IV/IO or 2mg ETT every 3-5 minutes to a max of 3mg. Max ETT dose 6mg.</li> <li>• PEA: If rate of monitored activity is &lt; 60 give 1mg IV/IO or 2mg ETT every 3-5 minutes to a max of 3mg. Max ETT dose 6mg</li> <li>• Organophosphate Poisoning: 2mg IVP every 5 minutes until lungs clear or BP &gt;90 systolic and pulse &gt; 60.</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• Symptomatic Bradycardia: 0.02mg/kg IV, minimum does 0.1mg, maximum single does 0.5mg may repeat in 3-5 minutes. Max dose for children 0-8 years old is 1mg, max dose for children 9-15 years old is 2mg.</li> <li>• Organophosphate Poisoning: 0.05mg/kg to a max of 2mg per dose every 10-15 minutes, or until lungs clear or BP &gt;90 systolic and pulse &gt;60. (Minimum does if 0.1mg)</li> <li>• PAI: 0.02mg/kg to a max of 1.0mg to all patients &lt;16 years old</li> </ul>
<b>THERAPRUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Blocks acetylcholine receptor sites</li> <li>• Decreases vagal tone</li> <li>• Increases SA and Av nodal conduction</li> <li>• Dries Secretions</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Allergy</li> <li>• Tachycardia</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Blurred Vision</li> <li>• Dry Mouth</li> <li>• Headache</li> <li>• Pupillary dilation</li> <li>• Tachycardia</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	Organophosphate may require larger doses

# BENADRYL

(Diphenhydramine)

<b>INDICATIONS</b>	Allergic Reaction
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	50mg IV or IO
<b>PEDIATRIC</b>	1.0mg/kg IV or IO to a max of 50mg
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Inhibits histamine release and effects</li><li>• Anticholinergic effects antagonize extra pyramidal symptoms</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Acute asthma exacerbation</li><li>• Acute Glaucoma</li><li>• Pregnancy</li><li>• Sensitivity to drug</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Blurred vision</li><li>• Headache</li><li>• Palpitations</li><li>• Sedation</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<b>Contact Medical Control if patient is suspected to be having a dystonic reaction</b>

**DECADRON**  
**(Dexamethasone)**

<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• Severe respiratory distress with wheezing</li> <li>• Allergic reactions that are accompanied with respiratory distress</li> <li>• Bee Stings</li> </ul>
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	20mg SIVP
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• 0.6mg/kg to a max of 20mg SIVP</li> <li>• Not indicated if &lt; 2YOA</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Anti-inflammatory agent</li> <li>• May prevent the release of histamine</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Psychosis</li> <li>• Hypersensitivity to the drug</li> <li>• Fungal infections</li> <li>• Non-Asthmatic bronchial disease</li> <li>• <b>CHILD &lt; 2 years of age</b></li> <li>• AIDS</li> <li>• TB</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Tachycardia</li> <li>• Bradycardia</li> <li>• Hypertension</li> <li>• Increase sweating</li> <li>• Seizures</li> <li>• Headache</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• To be used in conjunction with Albuterol</li> <li>• Use caution in women who are pregnant</li> </ul>

# DEXTROSE 50%

(D50W)

<b>INDICATIONS</b>	Hypoglycemia
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	25g (50cc <b>D50</b> ) IVP, IO
<b>PEDIATRIC</b>	Dextrose 25% ( <b>D25W</b> ), 2cc/kg, IV, IO to a max of 100cc. ( <b>D50W</b> may be diluted 1 to 1 with <b>NS</b> to achieve <b>D25W</b> )
<b>THERAPEUTIC EFFECTS</b>	Immediate source of glucose
<b>CONTRAINDICATIONS</b>	CVA with normal serum glucose
<b>SIDE EFFECTS</b>	Local irritation
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Dilute dextrose before administration to pediatric patients</li><li>• Can potentially precipitate acute neurological symptoms in alcoholics</li><li>• Causes local tissue necrosis is IV infiltrates</li></ul>

# DOPAMINE

(Intropin)

<b>INDICATIONS</b>	Cardiogenic shock, Bradycardia, Refractory Hypotension
<b>ADMINISTRATION</b>	IV or IO infusion
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"><li>• 5mcg/kg/min, IV or IO, increased by 5mcg/kg/min every 2 minutes until: Max of 20mcg/kg/min given or Systolic BP 90-110mmHg</li></ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"><li>• 5mcg/kg/min, IV or IO</li><li>• If perfusion not adequate after 2 minutes, increase to a max of 10mcg/kg/min</li></ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Stimulates alpha, beta, and dopamine receptors, depending on dose</li><li>• Increases cardiac output and systemic arterial pressure</li><li>• Dilates vessels to the brain, heart and kidneys</li><li>• Increases heart rate</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Uncorrected hypovolemic shock</li><li>• Uncorrected tachydysrhythmias</li><li>• Allergy</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Angina</li><li>• Ectopy</li><li>• Headache</li><li>• Tachydysrhythmias</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Titrate to blood pressure</li><li>• Hypovolemia should be corrected with volume expansion fluids prior to the administration of Dopamine.</li></ul>

# EPINEPHRINE

(Epi 1:10,000 and Epi 1:1,000)

<b>INDICATIONS</b>	Cardiac Arrest, Allergic reaction, and Pediatric Bradycardia
<b>ADMINISTRATION</b>	IV, IO, SC, ETT
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• Cardiac arrest: 1mg IV or IO every 3-5 minutes or 2mg via ETT every 3-5 minutes of 1:10,000</li> <li>• Allergic Reaction Stable: 0.2mg of 1:10,000 IV</li> <li>• Allergic Reaction Unstable: 0.5mg of 1:10,000 IV</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• Cardiac Arrest-: 1:10,000 0.01mg/kg IV, IO or 0.1mg/kg ETT of 1:1,000 solution up to a max on 1 mg per single dose</li> <li>• Bradycardia-: 0.01mg/kg of 1:10,000 solution IV or IO to a max of 5cc per single dose, or 0.1mg/kg ETT 1:1,000 solution to a max of 0.5cc per single dose repeat every 3-5 minutes at same dose</li> <li>• Allergic Reaction: 0.01mg/kg IV or IO of 1:10,000, max dose of 0.5mg <b>(ADMINISTER ONLY IF EVIDENCE OF SHOCK IS PRESENT)</b></li> <li>• Epinephrine 1:1,000: 0.01mg/kg to a max of 0.15mg SC</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Stimulates alpha and beta adrenergic receptors</li> <li>• Increases heart rate, systemic blood pressure and coronary blood flow</li> </ul>
<b>CONTRANDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypertension</li> <li>• Tachycardia</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Hypertension</li> <li>• Palpitations</li> <li>• Tachycardia</li> <li>• Tremors</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Pay special attention to the concentration either 1:1,000 or 1:10,000</li> <li>• Epinephrine 1:1,000 is <b>NEVER GIVEN IV</b></li> </ul>

# ETOMIDATE

(Amidate)

<b>INDICATIONS</b>	Chemical Sedation, RSI
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	0.3mg/kg IV or IO to a max of 40mg
<b>PEDIATRIC</b>	0.3mg/kg IV or IO to a max of 40mg
<b>THERAPEUTIC EFFECTS</b>	
<b>CONTRAINDICATIONS</b>	Hypersensitivity
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Pain at injection site</li><li>• Respiratory depression</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	

# FENTANYL

## (Duragesic)

<b>INDICATIONS</b>	Pain Management
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• 5mcg/kg for single dose max of 100 mcg, <b>(2.5mcg/kg if &gt;60 years of age)</b></li> <li>• May repeat once at same dosage if needed in 3-5 minutes</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• 5 mcg/kg for a single does max of 100 mcg</li> <li>• May repeat once at same dosage if needed in 3-5 minutes</li> <li>• <b>Not indicated for children &lt; 2 years of age</b></li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Inhibits ascending pain pathways in CNS</li> <li>• Increases pain threshold</li> <li>• Alters pain perception by binding to opiate receptors</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity</li> <li>• Asthma</li> <li>• Severe renal disease</li> <li>• Severe hepatic disease</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Bradycardia</li> <li>• Hypotension</li> <li>• Hypertension</li> <li>• Blurred vision</li> <li>• Nausea/Vomiting</li> <li>• Urinary Retention</li> <li>• Diaphoresis</li> <li>• Respiratory depression</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Light Sensitive</li> <li>• <b>DO NOT use in children &lt; 2 years of age</b></li> </ul>

# GLUCAGON

<b>INDICATIONS</b>	Hypoglycemia
<b>ADMINISTRATION</b>	IM
<b>DOSAGE</b>	
<b>ADULT</b>	1mg IM
<b>PEDIATRIC</b>	0.5mg IM
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Increases blood sugar</li><li>• Improves mental status</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Hypersensitivity</li><li>• Hyperglycemia</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Hypotension</li><li>• Nausea and Vomiting</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Peak effect occurs within 30 minutes</li><li>• Pts can be hyperglycemic for one to two hours after</li></ul>

# LABETOLOL

(Normodyne)

<b>INDICATIONS</b>	Hypertensive Crisis
<b>ADMINISTRATION</b>	IV, IO
<b>DOSEAGE</b>	
<b>ADULT</b>	10-20mg IV or IO per online medical control
<b>PEDIATRIC</b>	Not indicated
<b>THERAPEUTIC EFFECTS</b>	Decreases blood pressure without reflex tachycardia or significant reduction in heart rate.
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Hypersensitivity to Beta blockers, Cardiogenic shock</li><li>• 2<sup>nd</sup> or 3<sup>rd</sup> degree AV blocks, Sinus Bradycardia, CHF, or Bronchial Asthma</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Orthostatic hypotension</li><li>• CHF</li><li>• Chest Pain</li><li>• Ventricular dysrhythmias</li><li>• AV Block</li></ul>
<b>SPECIALNOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Use caution in patients who are pregnant, or have diabetes, or well compensated heart failure, and in the elderly</li><li>• Must have online medical direction to give in EMS setting</li></ul>

# LASIX

(Furosemide)

<b>INDICATIONS</b>	Pulmonary Edema, CHF
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	40mg IVP or IO
<b>PEDIATRIC</b>	1mg/kg IVP or IO to a max of 40mg
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Loop diuretic which inhibits resorption of sodium and chloride</li><li>• Mild vasodilator</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Hypokalemia</li><li>• Hypovolemia</li><li>• Pregnancy</li><li>• Allergy</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Dehydration</li><li>• Dysrhythmias</li></ul>
<b>SPECIAL NOTES/RESTRICTION</b>	<ul style="list-style-type: none"><li>• May cause transient deafness with too fast of IV push</li><li>• May cause hyperglycemia and impairment of glucose tolerance</li></ul>

# LIDOCAINE

(Xylocaine)

<b>INDICATIONS</b>	Ventricular arrhythmias, Pre IO fluid Infusion. PAI for patients w/head injuries
<b>ADMINISTRATION</b>	IV, IO, ETT, IV infusion, IO infusion
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• PVCs: 1mg/kg, if not suppressed give 0.5mg/kg every five minutes until PVCs suppressed or 3mg/kg has been given</li> <li>• Lidocaine Drip must be started at 2mg/minute after using Lidocaine to treat Ventricular arrhythmias</li> <li>• PAI: 1mg/kg for patients with a head injury</li> <li>• Adult IO: Prior to infusion of fluids or flushes in the conscious adult patient you may administer 1mg/kg to a max of 50 mg, if no contraindications</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• 2mg/kg ETT to a max of 6mg/kg for patients with V-Tach with a pulse, and V-Fib and V-Tach without a pulse</li> <li>• Lidocaine Drip for post resuscitation at 30mcg/kg/min</li> <li>• Head Injury 0.5mg/kg</li> <li>• Pedi IO: Prior to infusion of fluids or flushes in the conscious pedi patient you may administer 0.5mg/kg to a max of 50mg, if no contraindications</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Suppresses Ventricular ectopy</li> <li>• Elevates threshold for ventricular fibrillation</li> <li>• Suppresses re-entry arrhythmias</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Idioventricular rhythms</li> <li>• 2<sup>nd</sup> and 3<sup>rd</sup> degree AV blocks</li> <li>• Allergy to local anesthetics</li> <li>• Sinus bradycardia</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Arrhythmias</li> <li>• Hypotension</li> <li>• Irritability</li> <li>• Muscle twitching</li> <li>• Seizures</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Successful use of Lidocaine IVP or IO should be followed by additional boluses</li> <li>• Boluses should be reduced in cases of shock, CHF, or elderly patients</li> </ul>

## MORPHINE

<b>INDICATIONS</b>	Pain management, Pulmonary Edema, CHF, and Cardiac Chest pain or AMI
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• Pain: 2-6mg may repeat if needed every 10 minutes or until systolic BP is &lt;90mmHg</li> <li>• Pulmonary Edema/CHF: 2-6mg may repeat once in 10 minutes if systolic BP &gt;90mmHg</li> <li>• Chest Pain: 2-6mg may repeat as need every 10 minutes until pain is relieved or systolic BP &lt;90mmHg</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• Pain: 0.1mg/kg up to a max single does of 3mg</li> <li>• Pulmonary Edema: 0.1mg/kg to a max single does of 3mg</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Binds with opiate receptors to reduce pain</li> <li>• Peripheral vasodilation</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• <b>Use of Monoamine Oxidase Inhibitors (MAOI's) within the past 14 days</b></li> <li>• Asthma</li> <li>• COPD</li> <li>• Head Injury</li> <li>• Hypotension</li> <li>• Hypovolemia</li> <li>• Respiratory depression</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Bradycardia</li> <li>• Hypotension</li> <li>• Nausea and vomiting</li> <li>• Respiratory depression</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	Naloxone (Narcan) and respiratory equipment should be immediately accessible.

# NARCAN

(Naloxone)

<b>INDICATIONS</b>	Opiate Overdose, Decreased LOC
<b>ADMINISTRATION</b>	IV, IO, ETT
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"><li>• 2mg may be repeated if no changes in patients mental status</li><li>• Patients on chronic high dosages of Narcotics give 0.1mg every 2-3 minutes for clinical effect.</li></ul>
<b>PEDIATRIC</b>	0.05mg/kg to a max of 2mg
<b>THERAPEUTIC EFFECTS</b>	Reverses effects of most narcotic agents
<b>CONTRAINDICATIONS</b>	Hypersensitivity to Naloxone
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Acute Narcotic withdrawal</li><li>• Hypertension</li><li>• Irritability</li><li>• Nausea and vomiting</li><li>• Tachycardia</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• Does not reverse benzodiazepine overdoses</li><li>• May precipitate acute withdrawal symptoms</li><li>• Caution should be exercised when administering Naloxone to patients addicted to narcotics</li></ul>

# NITROGLYCERIN

(Nitro-Bid, Nitrostat)

<b>INDICATIONS</b>	Chest Pain, Pulmonary Edema, CHF
<b>ADMINISTRATION</b>	SL
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"><li>• Chest Pain: If systolic BP is &gt;90mmHg give 0.4mg SL or 1 metered spray of Nitro spray, every 5 minutes until pain is relieved, total of 3 doses given or Systolic blood pressure &lt; 90mmHg</li><li>• Pulmonary Edema/CHF: If systolic BP &gt; 90mmHg give one Nitro 0.4mg SL or one metered Nitro Spray</li></ul>
<b>PEDIATRIC</b>	NOT INDICATED
<b>THERAPEUTIC EFFECTS</b>	Dilates coronary and systemic arteries
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Head trauma</li><li>• Hypertrophic Cardiomyopathy</li><li>• Glaucoma</li><li>• Hypotension</li><li>• Use of Viagra, Cialis or Levitra within past 48 hours</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Dizziness</li><li>• Headache</li><li>• Hypotension</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<b>Contact Medical Control prior to administration if taking Viagra, Cialis or Levitra</b>

# NORCURON

(Vecuronium)

<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• To facilitate emergent endotracheal intubation</li><li>• Provide skeletal muscle relaxation during artificial ventilations</li></ul>
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	0.15mg/kg to a max of 20mg and may repeat dosage at 0.01mg/kg if needed
<b>PEDIATRIC</b>	0.15mg/kg to a max of 20mg and may repeat dosage at 0.01mg/kg if needed
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• The agent is a non-depolarizing skeletal muscle relaxant</li><li>• This agent acts by competing for cholinergic receptors, which prevents acetylcholine from binding to the receptors on the muscle end plate, thus blocking depolarization</li></ul>
<b>CONTRAINICATIONS</b>	Hypersensitivity to the drug
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Serious histamine mediated flushing</li><li>• Hypotension</li><li>• Bronchoconstriction</li><li>• Transient increase in heart rate</li><li>• Respiratory depression and Apnea</li><li>• Redness and itching at IV site</li></ul>
<b>SPECIAL NOTES/ RESTRICTIONS</b>	<ul style="list-style-type: none"><li>• The patient will be completely paralyzed and in respiratory arrest for 20-30 minutes following the administration of norcuron-Complete airway control management will be necessary</li><li>• The agent has no effect on consciousness, cerebation or pain threshold</li><li>• Use with Anectine may enhance the neuromuscular blocking effect of Norcuron</li></ul>

**NORMAL SALINE**  
**(0.9% Sodium Chloride)**

<b>INDICATION</b>	Trauma, Hypovolemic status, Burns, as a flushing agent, D.K.A. and as an irrigation solution for eyes. First line IV fluid of choice
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	T.K.O. to W/O IV or IO
<b>PEDIATRIC</b>	T.K.O. to W/O (20mg/kg) IV or IO
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Expands circulation volume</li> <li>• Isotonic solution</li> </ul>
<b>CONTRAINDICATIONS</b>	High doses in Congestive Heart Failure
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Edema</li> <li>• Fluid Overload</li> <li>• Electrolyte imbalance</li> <li>• Hypertension</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Monitor vital signs and ECG continuously</li> <li>• Listen to breath sounds for signs of pulmonary edema</li> <li>• Can cause hypertension</li> </ul>

## ORAL GLUCOSE

<b>INDICATIONS</b>	Low blood sugar
<b>ADMINISTRATION</b>	PO (by mouth)
<b>DOSAGE</b>	
<b>ADULT</b>	15g between cheek and gum, may repeat to desired effect
<b>PEDIATRIC</b>	15g between cheek and gum, may repeat to desired effect
<b>THERAPEUTIC EFFECTS</b>	Increases blood sugar in patients that are alert and able to swallow
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Unconscious patients</li><li>• Hyperglycemia</li></ul>
<b>SIDE EFFECTS</b>	None
<b>SPECIAL NOTES/RESTRICTIONS</b>	Only administer to patients that are alert and able to swallow

## OXYGEN

<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• Treat Hypoxemia</li> <li>• Help decrease work of breathing</li> <li>• Decreases myocardial work</li> </ul>
<b>ADMINISTRATION</b>	Inhalation
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• 1-6lpm via Nasal cannula</li> <li>• 8-15lpm via Non-Rebreather Mask</li> <li>• 3-6lpm via Hand Held Nebulizer</li> <li>• 6-10lpm via Venturi</li> <li>• 15lpm via ETT</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• 1-6lpm via Nasal cannula</li> <li>• 8-15lpm via Non-Rebreather Mask</li> <li>• 3-6lpm via Hand Held Nebulizer</li> <li>• 6-10lpm via Venturi</li> <li>• 15lpm via ETT</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Supplemental Oxygen increases alveolar oxygen tension</li> <li>• Reduces both the magnitude and extent of ST changes during an AMI</li> </ul>
<b>CONTRAINDICATIONS</b>	<b>DO NOT GIVE SUPPLEMENTAL OXYGEN IN A PARAQUAT POISONING</b>
<b>SIDE EFFECTS</b>	None for short term emergency use
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Do NOT withhold Oxygen from a COPD patient if he/she needs it</li> <li>• Monitor SPO2 continuously</li> </ul>

# RACEMIC EPINEPHRINE

(Micronefrin, Vapo Nefrin)

<b>INDICATIONS</b>	Croup
<b>ADMINISTRATION</b>	Inhalation
<b>DOSAGE</b>	
<b>ADULT</b>	<b>DO NOT GIVE TO ADULT PATIENTS</b>
<b>PEDIATRIC</b>	<40KG: 11.25mg Racemic Epinephrine in 2mL 2.25% saline solution via nebulizer
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Bronchodilator</li> <li>• Vasoconstrictor</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity</li> <li>• Epiglottitis</li> <li>• Significant underlying cardiovascular disease</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Palpitations</li> <li>• Headache</li> <li>• Tremors</li> <li>• Tachycardia</li> <li>• Nausea/Vomiting</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Monitor vital signs closely</li> <li>• Should be used only once prehospital (contact medical control if another is needed)</li> <li>• Excessive use may cause bronchospasms</li> <li>• May develop “rebound worsening” within 30-60 minutes</li> <li>• Effects last from 90-120 minutes</li> <li>• <b>PATIENT MUST BE TRANSPORTED AFTER RECEIVING RACEMIC EPINEPHRINE</b></li> <li>• Heat and Light sensitive should be stored in a dark cool place</li> </ul>

# ROCURONIUM

(Zemuron)

<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• To facilitate emergent endotracheal intubation</li> <li>• Provide skeletal muscle relaxation during artificial ventilations</li> </ul>
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	1mg/kg. May repeat dosage at 0.1mg/kg if needed after 12 minutes
<b>PEDIATRIC</b>	<b>Not Indicated for Pediatrics</b>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• The agent is a non-depolarizing skeletal muscle relaxant</li> <li>• This agent acts by competing for cholinergic receptors, which prevents acetylcholine from binding to the receptors on the muscle end plate, thus blocking depolarization</li> </ul>
<b>CONTRAINICATIONS</b>	Hypersensitivity to the drug
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Serious histamine mediated flushing</li> <li>• Hypotension</li> <li>• Bronchoconstriction</li> <li>• Transient increase in heart rate</li> <li>• Myopathy</li> <li>• Respiratory depression and Apnea</li> <li>• Redness and itching at IV site</li> </ul>
<b>SPECIAL NOTES/ RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• The patient will be completely paralyzed and in respiratory arrest for 20-60 minutes following the administration of Rocuronium- Complete airway control management will be necessary</li> <li>• The agent has no effect on consciousness, cerebation or pain threshold</li> <li>• Use with Succinylcholine may enhance the neuromuscular blocking effect of Rocuronium</li> </ul>

## SODIUM BICARBONATE

<b>INDICATIONS</b>	Cardiac Arrest, May also be given for <b>KNOWN</b> Tricyclic Antidepressant O.D., Hyperkalemia or Acidosis
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	1mEq/kg up to 100mEq. May be repeated at 0.5mEq/kg every 10 minutes to a max of 50 mEq.
<b>PEDIATRIC</b>	NOT INDICATED
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Buffers strong acids in the blood</li> <li>• Antagonizes sodium channel blockade in TCA overdose</li> <li>• Prevents resorption of salicylates in renal tubes</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypokalemia</li> <li>• Pulmonary Edema</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Dysrhythmias secondary to potassium effects</li> <li>• Metabolic alkalosis</li> <li>• Pulmonary edema</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• <b>MUST CONTACT ON-LINE MEDICAL CONTROL</b></li> <li>• Not to be used in place of proper ventilation to prevent acidosis</li> <li>• In patients less than 2 year of age you must dilute 1:1 with NS</li> </ul>

# SUCCINYLCHOLINE

(Anectine)

<b>INDICATIONS</b>	Chemical Sedation
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	2mg/kg rapid IV or IO push, to a max of 200mg. Do not repeat without medical control authorization.
<b>PEDIATRIC</b>	2mg/kg rapid IV or IO push, to a max of 200mg. Do not repeat without medical control authorization
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Inhibits transmission of nerve impulses by binding with cholinergic receptors sites, antagonizing action of acetylcholine causes release of histamine</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Burns greater than 48 hours old</li><li>• Kidney Dialysis</li><li>• Chronic neuromuscular disease or any chronic paralysis</li><li>• Hypersensitivity</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Bradycardia</li><li>• Tachycardia</li><li>• Hypertension</li><li>• Dysrhythmias</li><li>• Apnea</li><li>• Respiratory depression</li></ul>
<b>SPECIAL NOTES/ RESTRICTIONS</b>	Monitor vital signs closely

# VALIUM

## (Diazepam)

<b>INDICATIONS</b>	Major motor seizures, Status Epilepticus
<b>ADMINISTRATION</b>	IV,IO, and Rectal
<b>DOSAGE</b>	
<b>ADULT</b>	Seizures: 5mg IV, if no changes repeat 5 mg every 5 minutes until seizures controlled. Rectally one dose 10mg
<b>PEDIATRIC</b>	<ul style="list-style-type: none"><li>• Seizures: 0.1mg/kg, IV to a max of 5mg per dose, may repeat dose every 5 minutes until seizures controlled.</li><li>• Rectal: 0.5mg/kg, rectal to a max of 10 mg per dose</li></ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"><li>• Suppresses spread of seizure activity through the motor cortex</li><li>• Skeletal muscle relaxant</li><li>• Reduces anxiety and causes sedation</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Respiratory depression</li><li>• Hypotension</li><li>• Allergy</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Hypotension</li><li>• Respiratory depression</li><li>• Use caution in the elderly patients</li></ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	Intramuscularly administration leads to widely variable absorption and should be avoided if possible.

## VERSED (Midazolam)

<b>INDICATIONS</b>	Premedication for cardioversion, Seizures and Chemical Sedation and Restraint
<b>ADMINISTRATION</b>	IV, IO, IM
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• Cardioversion: 5mg IV or IO if BP&gt;90mmHg (2.5mg if patient is &gt;60 years of age)</li> <li>• Chemical Sedation: 1-5mg IV, IO or IM 0.5mg/kg to a max of 5mg per dose</li> <li>• Seizure: 5mg IM, may be repeated at 2.5mg every 10 minutes as needed to control seizure activity.</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• Cardioversion: 0.1mg/kg IV or IO to a max of 2.5mg</li> <li>• Chemical Sedation: 0.1mg/kg IV or IO to a max of 10mg</li> <li>• Seizures: 0.2mg/kg IM to a max of 5mg, may repeat 0.1mg/kg every 10 minutes as needed.</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• C.N.S. depressant</li> <li>• The agent causes amnesia by unknown mechanism</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity</li> <li>• Pre-existing respiratory depression due to drugs or C.N.S. dysfunction</li> <li>• Use with caution, if at all, for shock states, head injury patients and comatose patients</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Amnesia, Tonic-clonic activity, drowsiness, and lethargy</li> <li>• Tachycardia and Hypotension</li> <li>• Photophobia, blurred vision and nystagmus</li> <li>• Nausea, vomiting, depressed gag reflex</li> <li>• Pain and phlebitis at injection site</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• This agent is 3-4 times as potent as diazepam on a milligram to milligram basis. Its has a more rapid onset and shorter half-life than Valium</li> <li>• Monitor ECG, V/S, and SPO2 continuously</li> </ul>

**XOPENEX**  
**(Levalbuterol)**

<b>INDICATIONS</b>	Respiratory distress with patients that have Asthma or COPD
<b>ADMINISTRATION</b>	Nebulized via supplemental oxygen
<b>DOSAGE</b>	
<b>ADULT</b>	1.25mg/3ml nebulized, may repeat once if no relief
<b>PEDIATRIC</b>	1.25mg/3ml nebulized, may repeat once if no relief
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Relaxes soft muscles</li> <li>• Causes bronchodilation</li> <li>• Causes cardiac stimulation</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity to drug</li> <li>• Tachydysrhythmias</li> <li>• Severe cardiac disease</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Migraine</li> <li>• Nervousness</li> <li>• Anxiety</li> <li>• Tachycardia</li> <li>• Increased cough</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	<ul style="list-style-type: none"> <li>• Use with caution in patients with Cardio Vascular disorders</li> <li>• Use caution in patients with Diabetes and seizure disorders</li> </ul>

**ZOFRAN  
(Ondansetron)**

<b>INDICATIONS</b>	Nausea and Vomiting
<b>ADMINISTRATION</b>	IV, IO
<b>DOSAGE</b>	
<b>ADULT</b>	<ul style="list-style-type: none"> <li>• 4mg IVP</li> </ul>
<b>PEDIATRIC</b>	<ul style="list-style-type: none"> <li>• <b><i>NOT INDICATED FOR CHILDREN &lt; 2 YEARS OF AGE</i></b></li> <li>• Over 2 years of age: 0.1mg/kg to a max of 4mg</li> </ul>
<b>THERAPEUTIC EFFECTS</b>	<ul style="list-style-type: none"> <li>• Helps reverse the effects of nausea</li> <li>• May potentate the effects of CNS depressants</li> </ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity to drug</li> <li>• Intestinal obstruction</li> <li>• Seizure disorder</li> </ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Drowsiness</li> <li>• Blurred Vision</li> <li>• Hypotension</li> <li>• Constipation</li> <li>• Diarrhea</li> <li>• Fatigue</li> </ul>
<b>SPECIAL NOTES/RESTRICTIONS</b>	Do NOT administer to children < 2 YOA

## ADULT MEDICATIONS

Weight (lbs)	110lbs	143lbs	165lbs	187lbs	209lbs	220lbs
Weight (kg)	50kg	60kg	70kg	80kg	90kg	100kg
Activated Charcoal 1g/kg up to 50g	50g PO	50g PO	50g PO	50g PO	50g PO	50g PO
Adenosine 12mg Rapid IV push, may be repeated once at 12mg rapid IV push	12mg	12mg	12mg	12mg	12mg	12mg
Albuterol 2.5mg nebulized	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg
Amiodarone 150mg IV over 10 minutes for VT with a pulse	150mg	150mg	150mg	150mg	150mg	150mg
Amiodarone 300mg rapid IV for VF/VT without a pulse may repeat once at 150mg	300mg	300mg	300mg	300mg	300mg	300mg
ASA 325mg PO	325mg	325mg	325mg	325mg	325mg	325mg
Atropine for Asystole and PEA 1mg every 3-5 minutes to a max of 3mg	1mg	1mg	1mg	1mg	1mg	1mg
Atropine for Bradycardia 0.5mg may be repeated to a max of 3mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg
Benadryl 50mg IVP	50mg	50mg	50mg	50mg	50mg	50mg
Decadron 20mg SIVP	20mg	20mg	20mg	20mg	20mg	20mg
Dextrose 50% (D50W) 25g/50cc may repeat once if blood glucose < 70.	25grams	25grams	25grams	25grams	25grams	25grams
Dopamine 5mcg/kg/min 200mg/250mL	18gtts/min	23gtts/min	26gtts/min	30gtts/min	34gtts/min	38gtts/min
Dopamine 10mcg/kg/min 200mg/250mL	38gtts/min	45gtts/min	53gtts/min	60gtts/min	68gtts/min	75gtts/min
Dopamine 15mcg/kg/min 200mg/250mL	56gtts/min	68gtts/min	79gtts/min	90gtts/min	101gtts/min	113gtts/min
Dopamine 20mcg/kg/min 200mg/250mL	75gtts/min	90gtts/min	105gtts/min	120gtts/min	135gtts/min	150gtts/min
Epi 1:1,100 0.3mg SQ	0.3mg	0.3mg	0.3mg	0.3mg	0.3mg	0.3mg
Epi 1:10,000 1mg IVP or 2mg ETT	1mg/2mg	1mg/2mg	1mg/2mg	1mg/2mg	1mg/2mg	1mg/2mg
Etomidate 0.3mg/kg IV to a max of 40mg	15mg	18mg	21mg	24mg	27mg	30mg
Fentanyl 5mcg/kg to a max of 100mcg single does. May repeat once	100mcg	100mcg	100mcg	100mcg	100mcg	100mcg
Glucagon 1mg IM	1mg	1mg	1mg	1mg	1mg	1mg
Labetalol 10-20mg IVP (MUST CONTACT MEDICAL CONTROL BEFORE ADMINISTERING)	10-20mg	10-20mg	10-20mg	10-20mg	10-20mg	10-20mg
Lasix 40mg SIVP	40mg	40mg	40mg	40mg	40mg	40mg
Lidocaine for PVCs 1mg/kg IV may be repeated at 0.5mg/kg to a max of 3mg/kg	50mg/25mg	60mg/30mg	70mg/35mg	80mg/40mg	90mg/45mg	100mg/50mg
Lidocaine for VF/VT given via ETT 2mg/kg may repeat at 2mg/kg to a max of 6mg/kg	100mg	120mg	140mg	160mg	180mg	200mg
Lidocaine Drip 2-4mg/minute	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr
Morphine 2-6mg every 10 minutes (half dosage in pts >60y/o)	2-6mg	2-6mg	2-6mg	2-6mg	2-6mg	2-6mg
Narcan 2mg may repeat once if no change in mental status	2mg	2mg	2mg	2mg	2mg	2mg
Nitro Spray 0.4mg SL max of 3 if BP>90 systolic	0.4mg	0.4mg	0.4mg	0.4mg	0.4mg	0.4mg
Norcuron 0.15mg/kg to a max of 20mg may repeat at 0.01mg/kg if needed	7.5mg	9mg	10.5mg	12mg	13.5mg	15mg
Oral Glucose 15g between check and gum may repeat to desired effect	15g	15g	15g	15g	15g	15g
Racemic Epi	Not indicated	Not indicated	Not indicated	Not indicated	Not indicated	Not indicated
Rocuronium (INITIAL DOSE) 1mg/kg	50mg	60mg	70mg	80mg	90mg	100mg
Rocuronium (REPEAT DOSE) repeated X1 in 12 minutes if needed 0.1mg/kg	5mg	6mg	7mg	8mg	9mg	10mg
Sodium Bicarb 1meq/kg to a max of 100meq, may repeat at 0.5meq every 10 minutes up to 50meq	50meq	60meq	70meq	80meq	90meq	100meq
Succinylcholine 2mg/kg rapid IVP	100mg	120mg	140mg	160mg	180mg	200mg
Valium 5mg IV for active seizures may repeat as needed at 5mg every 5 minutes	5mg	5mg	5mg	5mg	5mg	5mg
Versed 5mg IVP if BP>90 systolic (2.5mg if pt >60)	5mg	5mg	5mg	5mg	5mg	5mg
Xopenex 1.25mg/3cc NS Nebulized may be repeated once at same dose if needed	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg
Zofran 4mg IVP	4mg	4mg	4mg	4mg	4mg	4mg

## ADULT MEDICATIONS

Weight (lbs)	242lbs	264lbs	286lbs	308lbs	330lbs
Weight (kg)	110kg	120kg	130kg	140kg	150kg
Activated Charcoal 1g/kg up to 50g	50g PO	50g PO	50g PO	50g PO	50g PO
Adenosine 12mg Rapid IV push, may be repeated once at 12mg rapid IV push	12mg	12mg	12mg	12mg	12mg
Albuterol 2.5mg nebulized	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg
Amiodarone 150mg IV over 10 minutes for VT with a pulse	150mg	150mg	150mg	150mg	150mg
Amiodarone 300mg rapid IV for VF/VT without a pulse may repeat once at 150mg	300mg	300mg	300mg	300mg	300mg
ASA 325mg PO	325mg	325mg	325mg	325mg	325mg
Atropine for Asystole and PEA 1mg every 3-5 minutes to a max of 3mg	1mg	1mg	1mg	1mg	1mg
Atropine for Bradycardia 0.5mg may be repeated to a max of 3mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg
Benadryl 50mg IVP	50mg	50mg	50mg	50mg	50mg
Decadron 20mg SIVP	20mg	20mg	20mg	20mg	20mg
Dextrose 50% (D50W) 25g/50cc may repeat once if blood glucose < 70.	25g	25g	25g	25g	25g
Dopamine 5mcg/kg/min 200mg/250mL	40gtts/min	45gtts/min	49gtts/min	53gtts/min	56gtts/min
Dopamine 10mcg/kg/min 200mg/250mL	84gtts/min	90gtts/min	98gtts/min	105gtts/min	113gtts/min
Dopamine 15mcg/kg/min 200mg/250mL	124gtts/min	135gtts/min	146gtts/min	158gtts/min	169gtts/min
Dopamine 20mcg/kg/min 200mg/250mL	165gtts/min	180gtts/min	195gtts/min	210gtts/min	225gtts/min
Epi 1:1,100 0.3mg SQ	0.3mg	0.3mg	0.3mg	0.3mg	0.3mg
Epi 1:10,000 1mg IVP or 2mg ETT	1mg/2mg	1mg/2mg	1mg/2mg	1mg/2mg	1mg/2mg
Etomidate 0.3mg/ kg IV to a max of 40mg	33mg	36mg	39mg	40mg	40mg
Fentanyl 5mcg/kg to a max of 100mcg single does. May repeat once	100mcg	100mcg	100mcg	100mcg	100mcg
Glucagon 1mg IM	1mg	1mg	1mg	1mg	1mg
Labetalol 10-20mg IVP (MUST CONTACT MEDICAL CONTROL BEFORE ADMINISTERING)	10-20mg	10-20mg	10-20mg	10-20mg	10-20mg
Lasix 40mg SIVP	40mg	40mg	40mg	40mg	40mg
Lidocaine for PVCs 1mg/kg IV may be repeated at 0.5mg/kg to a max of 3mg/kg	110mg/55mg	120mg/60mg	130mg/65mg	140mg/70mg	150mg/75mg
Lidocaine for VF/VT given via ETT 2mg/kg may repeat at 2mg/kg to a max of 6mg/kg	220mg	240mg	260mg	280mg	300mg
Lidocaine Drip 2-4mg/minute	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr	30-60gtt/hr
Morphine 2-6mg every 10 minutes (half dosage in pts >60y/o)	2-6mg	2-6mg	2-6mg	2-6mg	2-6mg
Narcan 2mg may repeat once if no change in mental status	2mg	2mg	2mg	2mg	2mg
Nitro Spray 0.4mg SL max of 3 if BP>90 systolic	0.4mg	0.4mg	0.4mg	0.4mg	0.4mg
Norcuron 0.15mg/kg to a max of 20mg may repeat at 0.01mg/kg if needed	16.5mg	18mg	19.5mg	20mg	20mg
Oral Glucose 15g between check and gum may repeat to desired effect	15g	15g	15g	15g	15g
Racemic Epi	Not Indicated	Not indicated	Not indicated	Not indicated	Not indicated
Rocuronium (INITIAL DOSE) 1mg/kg	110mg	120mg	130mg	140mg	150mg
Rocuronium (REPEAT DOSE) repeated X1 in 12 minutes if needed 0.1mg/kg	11mg	12mg	13mg	14mg	15mg
Sodium Bicarb 1meq/kg to a max of 100meq, may repeat at 0.5meq every 10 minutes up to 50meq	100meq	100meq	100meq	100meq	100meq
Succinylcholine 2mg/kg rapid IVP	200mg	200mg	200mg	200mg	200mg
Valium 5mg IV for active seizures may repeat as needed at 5mg every 5 minutes	5mg	5mg	5mg	5mg	5mg
Versed 5mg IVP if BP >90 systolic (give half dosage if pt >60y/o)	5mg	5mg	5mg	5mg	5mg
Xopenex 1.25mg/3cc NS Nebulized may be repeated once at same dose if needed	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg
Zofran 4mg IVP	4mg	4mg	4mg	4mg	4mg

## PEDIATRIC MEDICATIONS

Weight (lbs)	7.5lbs	15lbs	22lbs	33lbs	44lbs	55lbs	66lbs	77lbs	88lbs	99lbs
Weight (kg)	3.5kg	7kg	10kg	15kg	20kg	25kg	30kg	35kg	40kg	45kg
Activated Charcoal 1g/kg up to 50g	3.5g	7g	10g	15g	20g	25g	30g	35g	40g	45g
Adenosine 0.1mg/kg to a max of 12mg	0.4mg	0.7mg	1mg	1.5mg	2mg	2.5mg	3mg	3.5mg	4mg	4.5mg
Albuterol 2.5mg nebulized	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg
Amiodarone 5mg/kg rapid IV for VF/VT without a pulse may repeat once in 3-5 minutes at 2.5mg/kg to a max of 150mg	17.5mg	35mg	50mg	75mg	100mg	125mg	150mg	150mg	150mg	150mg
Amiodarone 5mg/kg IV or IO over 20 minutes for SVT and VT with a pulse to a max single dose of 150mg May repeat X 2 PRN	17.5mg	35mg	50mg	75mg	100mg	125mg	150mg	150mg	150mg	150mg
ASA	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Atropine for Bradycardia 0.02mg/kg, minimum dose 0.1mg, max single dose 0.5mg may repeat in 3-5 minutes	0.1mg	0.14mg	0.2mg	0.3mg	0.4mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg
Atropine for PAI (using Succinylcholine) 0.02mg/kg to a max of 1mg to all pts less than 16 years old	0.1mg	0.14mg	0.2mg	0.3mg	0.4mg	0.5mg	0.6mg	0.7mg	0.8mg	0.9mg
Atropine for Organophosphate Poisoning 0.05mg/kg to a max of 2mg single dose may repeat in 10-15 minutes (minimum dose 0.1mg)	0.2mg	0.4mg	0.5mg	0.8mg	1mg	1.3mg	15.mg	1.8mg	2mg	2mg
Benadryl 1mg/kg to a max of 50mg	3.5mg	7mg	10mg	15mg	20mg	25mg	30mg	35mg	40mg	45mg
Decadron 0.6mg/kg to a max of 20mg NOT INDICATED for children <2 years of age	2mg	4mg	6mg	9mg	12mg	15mg	18mg	20mg	20mg	20mg
Dextrose 50% (D50W) 25g/50cc must dilute 1 to 1 with NS to make D25W	7cc	14cc	20cc	30cc	40cc	50cc	60cc	70cc	80cc	90cc
Dopamine 5mcg/kg/min 200mg/250mL	1gtt/min	3gtts/min	4gtts/min	6gtts/min	8gtts/min	9gtts/min	11gtts/min	13gtts/min	15gtts/min	17gtts/min
Dopamine 10mcg/kg/min 200mg/250mL	3gtts/min	5gtts/min	8gtts/min	11gtts/min	15gtts/min	19gtts/min	23gtts/min	26gtts/min	30gtts/min	34gtts/min
Epi 1:1,000 for cardiac arrest ETT 0.1mg/kg to a max of 1mf per single dose	0.35mg	0.7mg	1mg	1mg	1mg	1mg	1mg	1mg	1mg	1mg
Epi 1:10,000 for cardiac arrest 0.01mg/kg IV or IO to a max of 1mg per single dose	0.03mg	0.07mg	0.1mg	0.15mg	0.2mg	0.25mg	0.3mg	0.35mg	0.4mg	0.45mg
Epi for Bradycardia 0.01mg/kg of 1:10,000 solution to a max of 5cc per single dose	0.03mg	0.07mg	0.1mg	0.15mg	0.2mg	0.25mg	0.3mg	0.35mg	0.4mg	0.45mg
Epi for Bradycardia via ETT 0.1mg/kg of 1:1,000 solution to a max of 0.5cc per single dose may repeat at same dose every 3-5minutes	0.35mg	0.7mg	1mg	1mg	1mg	1mg	1mg	1mg	1mg	1mg
Epi for Allergic Reactions 0.01mg/kg IV or IO of 1:10,000 solution to a max of 0.5mg	0.03mg	0.07mg	0.1mg	0.15mg	0.2mg	0.25mg	0.3mg	0.35mg	0.4mg	0.45mg
Epi SC for Allergic Reactions 1:1,000 solution 0.01mg/kg to a max of 0.15mg SC	0.03mg	0.7mg	0.1mg	0.15mg	0.15mg	0.15mg	0.15mg	0.15mg	0.15mg	0.15mg
Etomidate 0.3mg/ kg IV to a max of 40mg	1mg	2.1mg	3mg	4.5mg	6mg	7.5mg	9mg	10.5mg	12mg	13.5mg
Fentanyl 5mcg/kg to a max of 100mcg single dose. May repeat once (NOT indicated for children < 2 years of age)	Not Indicated	Not Indicated	Not Indicated	75mcg	100mcg	100mcg	100mcg	100mcg	100mcg	100mcg
Glucagon 0.5mg IM NOT INDICATED for children <2 years of age	Not Indicated	Not Indicated	Not Indicated	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg	0.5mg
Labetalol	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Lasix 1mg/kg to a max of 40mg	3.5mg	7mg	10mg	15mg	20mg	25mg	30mg	35mg	40mg	45mg
Lidocaine for Head Injury 0.5mg/kg	2mg	4mg	5mg	8mg	10mg	13mg	15mg	18mg	20mg	23mg

## PEDIATRIC MEDICATIONS

Weight (lbs)	7.5lbs	15lbs	22lbs	33lbs	44lbs	55lbs	66lbs	77lbs	88lbs	99lbs
Weight (kg)	3.5kg	7kg	10kg	15kg	20kg	25kg	30kg	35kg	40kg	45kg
Lidocaine for VT and VF with or without a pulse 2mg/kg ETT to a max of 6mg/kg	7mg	14mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg	90mg
Lidocaine Drip 30mcg/kg/min for Post Resuscitation	2gtt/min	3gtt/min	5gtt/min	7gtt/min	9gtt/min	11gtt/min	14gtt/min	16gtt/min	18gtt/min	20gtt/min
Morphine 0.1mg/kg to a max of 3mg single dose	0.4mg	0.7mg	1mg	1.5mg	2mg	2.5mg	3mg	3mg	3mg	3mg
Narcan 0.05mg/kg to a max of 2mg single dose	0.2mg	0.4mg	0.5mg	0.8mg	1mg	1.3mg	1.5mg	1.8mg	2mg	2mg
Nitro Spray	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Norcuron 0.15mg/kg to a max of 20mg may repeat at 0.01mg/kg if needed	0.5mg	1mg	1.5mg	2.5mg	3mg	4mg	4.5mg	5.5mg	6mg	7mg
Oral Glucose 15g between check and gum may repeat to desired effect	15g	15g	15g	15g	15g	15g	15g	15g	15g	15g
Racemic Epi 11.25mg in 2 cc saline solution nebulized. DO NOT give to pts >40kg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg	11.25mg
Rocuronium	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Sodium Bicarb	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated
Succinylcholine 2mg/kg rapid IVP	7mg	14mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg	90mg
Valium 0.1mg/kg IV to a max of 5mg per dose may repeat every 5 minutes	0.4mg	0.7mg	1mg	1.5mg	2mg	2.5mg	3mg	3.5mg	4mg	4.5mg
Valium 0.5mg/kg Rectal to a max of 10mg per dose	1.8mg	3.5mg	5mg	7.5mg	10mg	10mg	10mg	10mg	10mg	10mg
Versed for Cardioversion 0.1mg/kg to a max of 2.5mg	0.4mg	0.7mg	1mg	1.5mg	2mg	2.5mg	2.5mg	2.5mg	2.5mg	2.5mg
Versed for Chemical Sedation 0.1mg/kg to a max of 10mg	0.4mg	0.7mg	1mg	1.5mg	2mg	2.5mg	3mg	3.5mg	4mg	4.5mg
Versed for Seizures 0.2mg/kg to a max of 5mg single dose, may repeat at 0.1mg/kg every 10 minutes as needed.	0.7mg	1.4mg	2mg	3mg	4mg	5mg	5mg	5mg	5mg	5mg
Xopenex 1.25mg/3cc NS Nebulized may be repeated once at same dose if needed	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg	1.25mg
Zofran 0.1mg/kg to a max of 4mg NOT INDICATED for children <2 years of age`	Not Indicated	Not Indicated	Not Indicated	1.5mg	2mg	2.5mg	3mg	3.5mg	4mg	4mg

## IV DRIP RATE FORMULAS and EXAMPLES

- **Adult Lidocaine** (mg/min)

**Formula:**

$$\frac{\text{Required dose} * \text{Volume in bag} * \text{Drip set}}{\text{Amount of drug in bag}} = \text{Flow rate in gtts/min}$$

**Example:**

$$\frac{2 \text{ mg/min} * 250 \text{ mL} * 60 \text{ gtts/min}}{1000 \text{ mg}} = 30 \text{ gtts/min}$$

- **Pediatric Lidocaine** (mcg/kg/min)

**Formula:**

$$\frac{\text{Required dose} * \text{Volume in bag} * \text{Drip set} * \text{Patient weight in kg}}{\text{Amount of drug in bag in mcg (mg} * 1000 = \text{mcg)}} = \text{Flow rate in gtts/min}$$

**Pediatric Lidocaine example:** (using a 10kg patient)

$$\frac{30 \text{ mcg/min} * 250 \text{ mL} * 60 \text{ gtts/min} * 10 \text{ kg}}{1,000,000 \text{ mcg}} = 5 \text{ gtts/min}$$

- **Dopamine** (mcg/kg/min)

**Formula:**

$$\frac{\text{Required dose} * \text{Volume in bag} * \text{Drip set} * \text{Patient weight in kg}}{\text{Amount of drug in bag in mcg (mg} * 1000 = \text{mcg)}} = \text{Flow rate in gtts/min}$$

**Example:** (using a 100kg patient)

$$\frac{5 \text{ mcg/min} * 250 \text{ mL} * 60 \text{ gtts/min} * 100 \text{ kg}}{200,000 \text{ mcg}} = 38 \text{ gtts/min}$$

- **Adult Amiodarone** (volume/time)  
(Mix 150mg of Amiodarone into 100mL of D5W)

**Formula:**

$$\frac{\text{Volume to be infused} * \text{Drip set}}{\text{Time in Minutes}} = \text{Flow rate in gtts/min}$$

**Example:**

$$\frac{100 \text{ mL} * 10 \text{ gtts/min}}{10 \text{ min}} = 100 \text{ gtts/min}$$