

Prehospital  
Patient Care Protocols

# Section X

## Medication Reference



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# Prehospital Patient Care Protocol

## Medications Reference

### ODEMSA Cardiac Drug Box Medications:

	ALS Drug Box Contents	Page 3
	ALS Drug Box Diagram	Page 4
1.	Adenosine (Adenocard)	Page 5
2.	Albuterol (Proventil, Ventolin)	Page 6
3.	Amiodarone (Cordarone)	Page 7
4.	Aspirin	Page 8
5.	Atropine Sulfate	Page 9
6.	Bumetanide (Bumex)	Page 10
7.	Calcium Chloride	Page 11
8.	Dextrose, 50 percent (D-50W)	Page 12
9.	Dextrose, 25 percent (D-25W)	Page 13
10.	Diazepam (Valium)	Page 14
11.	Diphenhydramine (Benadryl)	Page 15
12.	Diltiazem (Cardizem)	Page 16
13.	Dopamine (Intropin)	Page 17
14.	Epinephrine 1:1000	Page 18
15.	Epinephrine 1:10,000	Page 19
16.	Furosemide (Lasix)	Page 20
17.	Geodon (Ziprasidone)	Page 21
18.	Glucagon	Page 22
19.	Ipratropium (Atrovent)	Page 23
20.	Lorazepam (Ativan)	Page 24
21.	Magnesium Sulfate	Page 25
22.	Metoprolol (Lopressor)	Page 26
23.	Morphine Sulfate	Page 27
24.	Naloxone (Narcan)	Page 28
25.	Nitroglycerin (Nitrostat)	Page 29
26.	Oxygen	Page 30
27.	Sodium Bicarbonate	Page 31

### Regional RSI Medications:

RSI 1.	Lidocaine HCL	Page 32
RSI 2.	Atropine Sulfate (Refer to Medication Reference 5.)	Page 33
RSI 3.	Etomidate	Page 34
RSI 4.	Versed (Midazolam)	Page 35
RSI 5.	Succinylcholine	Page 36
RSI 6.	Vecuronium Bromide (Norcuron)	Page 37

# Prehospital Patient Care Protocols

## ALS Drug Box Contents

Effective Date: 04/01/2006-B

<b>MEDICATIONS (A)</b>	<b>CONCENTRATION</b>	<b>AMOUNT PER CONTAINER</b>	<b>QUANTITY</b>
Adenosine (Adenocard)	3 mg/1 ml	6 mg	5
Albuterol 0.083%	2.5 mg/3ml	2.5 mg	4
Amiodarone	50 mg/ml	150 mg	4
Atropine Sulfate	0.1 mg/ml	1 mg	4
Atrovent	0.5 mg/2.5 ml	0.5 mg	4
Bumetanide (Bumex) (B)	0.25 mg/ml	1.0 mg	1
Calcium Chloride	100 mg/ml	1 gm	1
D25	250mg/ml	2.5 gm	2
D50	500 mg/ml	25 gm	2
Diazepam (Valium)	5 mg/ml	10 mg	1
Diltiazem (Cardizem Lyo-Ject)	5 mg/ml	25 mg	3
Diphenhydramine (Benadryl)	50 mg/ml	50 mg	1
Dopamine (Intropin)	40 mg/ml	200 mg	2
Epinephrine 1:1,000	1 mg/ml	1 mg	2
Epinephrine 1:1,000	1 mg/ml	30 mg	1
Epinephrine 1:10,000	1 mg/10 ml	1mg	10
Furosemide (Lasix)	10 mg/ml	100 mg	2
Glucagon	1 mg/ml	1mg	1
Lorazepam (Ativan) (C)	0.5 mg/ml	1 mg	2
Magnesium Sulfate	500 mg/ml	1 gm	4
Metoprolol (Lopressor)	1 mg/ml	5 mg	2
Morphine Sulfate with Holder	10 mg/ml	10 mg	2
Naloxone (Narcan)	1 mg/ml	2 mg	2
Nitroglycerin Tablets	0.4 mg/tablet	25 tablets	1
Nitropaste (D)	15mg/inch	60 gm	1
Sodium Bicarbonate	1 mEq/ml	50 mEq	1
Ziprasidone (Geodon)	20 mg/ml	20 mg	1

(A) Expiration dates are the final day of the month.  
 (B) Stocked only when Lasix is not available.

(C) Stocked only when Valium is not available.  
 (D) If Nitropaste is in unit dose, quantity will be 2.

<b>I.V. FLUIDS</b>	<b>CONCENTRATION</b>	<b>AMOUNT</b>	<b>QUANTITY</b>
Normal Saline		50 ml	1
D5W		100 ml	1
Sterile H <sub>2</sub> O		10 ml	1
Filtered Needles			5

<b>ACCESSORIES</b>	<b>QUANTITY</b>
Carpject (Winthrop) Tubex Holder	1
Plastic Trash Container (12" X 16")	1

## Upper Tray

Nitro. Tablets 0.4 mg	Epinephrine 1:1000 1mg/ml - 1mg	Epinephrine 1:1000 1mg/ml - 1mg	Naloxone 1mg/ml - 2mg	Naloxone 1mg/ml - 2mg	Dopamine 200 mg per 5 ml 200 mg	Dopamine 200 mg per 5 ml 200 mg	Adenosine 3mg/1ml 6mg	Adenosine 3mg/1ml 6mg	Adenosine 3mg/1ml 6mg	Epinephrine 1:1000 1mg/ml 30ml	Albuterol 0.083% 2.5mg (4 pre-mixed)	
Benadryl 50 mg/ml 50 mg	Epinephrine 1:1000 1mg/ml - 1mg	Epinephrine 1:1000 1mg/ml - 1mg	Naloxone 1mg/ml - 2mg	Naloxone 1mg/ml - 2mg	Magnesium Sulfate 1gm / 2ml 1gm	Magnesium Sulfate 1gm / 2ml 1gm	Magnesium Sulfate 1gm / 2ml 1gm	Magnesium Sulfate 1gm / 2ml 1gm	Adenosine 3mg / 1ml 6mg	Adenosine 3mg / 1ml 6mg	Atrovent 0.5mg/2.5ml 0.5mg (4)	Amiodarone 50mg/ml 150mg
Tubex Holder Morphine 10mg/ml -10mg Morphine 10mg/ml -10mg Valium 10mg/2ml Sterile Water 10ml					Geodon 20mg/ml 20mg	Glucagon 1mg/ml 1mg	Lasix 10mg/ml 100mg	Lasix 10mg/ml 100mg	Amiodarone 50mg/ml 150mg	Amiodarone 50mg/ml 150mg	Amiodarone 50mg/ml 150mg	

## Middle Tray

Atropine 1mg/10ml 1 mg	Atropine 1mg/10ml 1 mg	Atropine 1mg/10ml 1 mg	Atropine 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg	Epinephrine 1:10,000 1mg/10ml 1 mg
				Metoprolol 5mg/5ml		Metoprolol 5mg/5ml							

## Bottom Tray

Sodium Chloride 0.9% 50 ml	DSW 100ml	Nitropaste 2% 15mg/inch 60gm	Calcium Chloride 10% 100 mg/ml 1gm	Cardizem 25 mg/5 ml 25mg	Cardizem 25 mg/5 ml 25mg	Cardizem 25 mg/5 ml 25mg	D25 250mg/ml 2.5gm	D25 250mg/ml 2.5gm	D50 500mg/ml 25gm 50ml	D50 500mg/ml 25gm 50ml	Sodium Bicarbonate 8.4% 1mEq/ml 50mEq (4.2gm)
				Filtered Needles (5)			Plastic Trash Bag (1)				

Old Dominion EMS Alliance  
ALS Drug Box April 2006-B

**Indications:**

Adenosine is regarded as the drug of choice for treatment of hemodynamically stable PSVT

**Mechanism of Action:**

The primary effect of adenosine is to slow conduction through the AV node thereby terminating reentry tachydysrhythmias such as PSVT and restoring normal sinus rhythm.

**Contraindications:**

Second or Third degree block  
Adenosine will not affect atrial fibrillation, atrial flutter or ventricular tachycardia

**Precautions:**

Higher doses of adenosine are likely to be needed for patients receiving Theophylline or using large quantities of caffeine.  
Lower than usual doses (3 mg or less) of Adenosine should be used in patients receiving Dipyridamole (Persantin).  
Extra caution (and lower than usual doses) should be used in patients receiving Carbamazepine (Tegretol) which could potentiate AV block of Adenosine.

**Side Effects:**

Transient facial flushing, coughing/ dyspnea  
Chest discomfort (that may simulate angina)  
Marked slowing of the heart rate

**Dosage:**

6 mg RAPID IV push, immediately followed by RAPID FLUSH 10ml of normal saline. after 1 - 2 min, with continued PSVT 12 mg Rapid IV push & rapid flush 10 ml NS. repeat a final time 1 - 2 min later, 12 mg Rapid IV push & rapid flush 10 ml NS.

Pediatric dose: 0.1 mg / kg IVP up to 6 mg immediately followed by rapid flush NS  
double the initial dose for the second dose

0.2 mg / kg IVP up to 12 mg, immediately followed by rapid flush NS

Rapid flush doses: Infant 2.5 ml, 1-3 years 5.0 ml, 4 years and above 10 ml

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Adenosine 0.1 mg / kg	0.15 mg	0.3 mg	0.8 mg	1.0 mg	1.4 mg	2.0 mg	2.5 mg	3.4 mg	4.0 mg	5.0 mg
Adenosine 0.2 mg / kg	0.3 mg	0.6 mg	1.6 mg	2.0 mg	2.8 mg	4.0 mg	5.0 mg	7.0 mg	8.0 mg	10.0 mg

**Supplied in ODEMSA Drug Box:**

5 - 6 mg (6 mg/2 ml) vials

**Indications:**

Bronchial asthma  
 Reversible bronchospasm associated with chronic bronchitis and cases of emphysema

**Mechanism of Action:**

Administration by inhalation allows for preferential affinity for b2 adrenergic receptors, relaxing bronchial smooth muscle and decreasing airway resistance; suppresses release of leukotrienes and histamine from mast cells in lung tissue.

**Contraindications:**

Hypersensitivity to drug or Tachydysrhythmias

**Precautions:**

Patients with underlying coronary artery disease or preexisting arrhythmias are at much greater risk of myocardial ischemia and exaggerated arrhythmias.

Use Albuterol with caution in patients receiving MAO Inhibitors (Deprenyl, Seliginine, Parnate, Iproniazid) or TCAs (Amitriptyline, Desipramine)

**Side effects:**

Palpitations, skeletal muscle tremor, tachycardia, anxiety, nausea, dizziness  
 Hypokalemia in patients using cardiac glycosides (Digoxin) and diuretics

**Dosage:**

Adults: 5.0 mg (1 cc of 5% solution) placed in 2 cc NS

Pediatrics: 0.15 mg / kg of 5% solution up to 5.0 mg (0.03 ml / kg )

Age	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Albuterol 5% (5 mg/ml) 0.15 mg/kg	0.45 mg	1.25 mg	1.5 mg	2.5 mg	3.0 mg	3.75 mg	5.0 mg	5.0 mg	5.0 mg
Albuterol 5% (5 mg/ml) 0.03 ml/kg	0.1 ml	0.25 ml	0.3 ml	0.5 ml	0.6 ml	0.75 ml	1.0 ml	1.0 ml	1.0 ml

Note: Use 30 ml bottle of Albuterol 5% solution from the ODEMSA drug box to mix, not the individual premixed bottles for the above chart.

Note: If using premixed unit doses (2.5 mg/ 3 ml) use 1/2 unit dose mixed with 2 ml of normal saline for children under 2 years old. For children 2 years and older use one unit dose.

**Supplied in ODEMSA Drug box:**

1 – 30 ml bottle (5 mg/ml) or 4 pre-dosed plastic ampules 2.5 mg / 3 ml solution

**Indications:**

Initial treatment and prophylaxis of frequently recurring/refractory VF and hemodynamically unstable V-Tach in patients refractory to other therapy.

**Mechanism of Action:**

Amiodarone works on many levels. The drug prolongs the duration of the action potential and effective refractory period, and when given short term IV, probably includes non-competitive beta-adrenoreceptor and calcium channel blockers.

**Contraindications:**

Amiodarone should not be given in the presence of pulmonary congestion, cardiogenic shock, hypotension, or in patients who are hypersensitive to the drug.

**Precautions:**

Amiodarone may potentiate bradycardia and hypotension when used in conjunction with beta blockers and calcium channel blockers.

Amiodarone may increase risk of AV block and hypotension with calcium channel blockers.

Amiodarone may increase anticoagulation effects of Warfarin.

Amiodarone may decrease the metabolism and increase serum levels of phenytoin, procainamide, quinidine, and theophylline.

Amiodarone should not be given concurrently with furosemide, heparin and sodium bicarbonate.

**Side Effects:**

Amiodarone may cause hypotension, headache, dizziness, bradycardia, AV conduction abnormalities, flushing and abnormal salivation.

**Dosage:**

In cases of cardiac arrest (VF or pulseless VT), 300 mg IVP is the first dose, followed by 2 subsequent doses of 150 mg every 3-5 minutes.

**Pediatrics:**

5 mg/kg IV/IO for refractory pulseless ventricular tachycardia or ventricular fibrillation.

Age	Term	3 months	6 months	1 year	3 year	6 year	8 year	10 Year	12 Year	14 Year
Amniodarone 5 mg/kg	15.0 mg	30.0 mg	40.0 mg	50.0 mg	70.0 mg	100.0 mg	125.0 mg	170.0 mg	200.0 mg	250.0 mg

**Supplied in ODEMSA drug box:**

4 vials 50 mg / ml

**Indications:**

Aspirin is to be used for any patient with acute myocardial infarction or suspected AMI.

**Mechanism of Action:**

Aspirin is an anti inflammatory agent and an inhibitor of platelet function. Aspirin works by blocking the formation of the substance Thromboxane A2, which causes platelets to aggregate and arteries to constrict. The use of aspirin has been shown to cause an overall reduction of mortality in patients experiencing AMI.

**Contraindications:**

Aspirin is contraindicated in patients with a known hypersensitivity to the drug. It is also a relative contraindication in patients with any active bleeding disease.

**Precautions:**

Aspirin can cause GI upset and bleeding.

**Side Effects:**

Aspirin can cause heartburn, GI bleeding, nausea, and vomiting.

Aspirin can cause an asthma attack in rare cases with patients who have certain types of metabolic disorders (specifically C1 Esterase deficiency)

Aspirin can cause prolonged bleeding.

**Dosage:**

160 mg by mouth if baby aspirin is used

324 mg orally if baby aspirin and / or low dose adult aspirin  
or 325 mg orally if adult aspirin

Baby aspirin (chewable): 81 mg per tablet

Adult low dose (not chewable/chewable): 81 mg per tablet

Adult aspirin (not chewable): 325 mg tablet

**Indications:**

- Bradycardia
- Asystole
- PEA (with bradycardia)
- Organophosphate poisoning

**Mechanism of Action:**

Atropine produces its antispasmodic, anti-secretory and cardiovascular effects by blockage of acetylcholine at cholinergic receptor sites. Atropine inhibits effects of parasympathetic nervous system  
 Positive Chronotropic with little Inotropic effects

**Contraindications:**

None in the emergency setting

**Precautions:**

American Heart Association guidelines acknowledge that use (and efficacy) of Atropine is controversial for treatment of patients with acute MI and second or third degree AV block with QRS widening.

**Side effects:**

May precipitate tachyarrhythmias, dysphasia, erythema, flushing, headache, hypotension, mydriasis, vertigo and xerostomia

**Dosage:**

Bradycardia 0.5 mg - 1.0 mg IV bolus repeat every 3 - 5 min. as needed  
 Asystole 1 mg repeat every 3 - 5 min as needed  
 Max dose of 2 - 3 mg  
 Organophosphate poisoning 2 mg via IV  
 repeat every 5 min. until signs of atropine intoxication  
 (erythema, flushing, mydriasis and xerostomia)

Pediatric asystole: 0.02 mg/kg (min dose 0.1 mg)

Pediatric organophosphate poisoning 0.05 mg/kg

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Atropine – Pediatric Asystole 0.02 mg/kg	0.03 mg	0.06 mg	0.16 mg	0.20 mg	0.28 mg	0.4 mg	0.5 mg	0.68 mg	0.8 mg	1.0 mg
Atropine – Pediatric Organophosphate poisoning	.075 mg	0.15 mg	0.4 mg	0.5 mg	0.7 mg	1.0 mg	1.25 mg	1.7 mg	2.0 mg	2.5 mg

**Supplied in ODEMSA Drug box:**

4 - 1 mg (1 mg/10 ml) syringe

**6. Bumetanide (Bumex)**

(Used as a substitute for Lasix in the ODEMSA drug box)

**Indications:**

Congestive Heart Failure  
 Pulmonary Edema  
 Hypertensive crisis

**Mechanism of Action:**

Bumex is a loop diuretic with a rapid onset and a short duration of action. It is a potent diuretic , 1.0 mg of Bumex is equivalent to 40 mg of Lasix.

**Contraindications:**

Hypersensitivity to Bumex (Patients with allergic reaction to Sulfonamides may show hypersensitivity to Bumex.), anuria  
 Hepatic coma and severe electrolyte depletion.  
 Any use of erectile dysfunction medication (ie. Viagra)

**Precautions:**

May cause hypokalemia.  
 Should be limited to life-threatening situations in pregnant patients.

**Side effects:**

Muscle cramps	dizziness	nausea
Hypotension	headache	

**Dosage:**

Adult: 1.0 mg IV over a period of 1-2 minutes

**Supplied in ODEMSA Drug Box:**

2 - 1.0 mg/4ml vial

## 7. Calcium Chloride 10%

2008

### **Indications:**

Hyperkalemia  
Hypocalcemia  
Calcium channel blocker toxicity

### **Mechanism of Action:**

Calcium ions increase the force of myocardial contractions.

### **Contraindications:**

May precipitate digitalis toxicity

### **Precautions:**

Flush line between calcium chloride and sodium bicarbonate  
If administered to a patient with a heart beat, may slow the rate.

### **Side effects:**

Bradycardia	Arrhythmias
Nausea	Vomiting
Cardiac arrest	Syncope

### **Dosage:**

2 – 4 mg/kg slow IV (over 5 minutes) repeat as needed every 10 min.

weight	50 kg	75 kg	100 kg	125 kg
2 mg/kg	100 mg	150 mg	200 mg	250 mg
4 mg/kg	200 mg	300 mg	400 mg	500 mg

Pediatric dose: 20 mg/kg IV (maximum 1 g )  
may be repeated once in 10 minutes

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Calcium Chloride 10% 20 mg/kg	30 mg	60 mg	160 mg	200 mg	280 mg	400 mg	500 mg	680 mg	800 mg	1.0 gm

### **Supplied in ODEMSA Drug box:**

1 – 1 gm (100 mg/ml) syringe

## **8. Dextrose, 50% (D50W)**

2008

### **Indications:**

Hypoglycemia  
Used in pediatrics > 8 years old

### **Mechanism of Action:**

Increases circulating blood sugar levels

### **Contraindications:**

May be detrimental to patients with cerebral ischemia causing cerebral edema

### **Precautions:**

Try to obtain base line glucose level  
Flush vein after dose

### **Side effects:**

Tissue necrosis if extravasation occurs.

### **Dosage:**

25 gm IV  
May repeat for continued hypoglycemia

### **Supplied in ODEMSA Drug box:**

2 – 25 gm (500 mg / ml) syringes

## 9. Dextrose, 25% (D25W)

2008

### **Indications:**

Hypoglycemia  
Acute alcoholism with coma  
Pediatric 30 days – 8 years old

### **Mechanism of Action:**

Increases circulating blood sugar levels

### **Contraindications:**

May be detrimental to patients with cerebral ischemia

### **Precautions:**

Try to obtain base line glucose level  
Flush vein after dose

### **Side effects:**

Tissue necrosis if extravasation occurs.

### **Dosage:**

0.5 gm / kg IV  
May repeat for continued hypoglycemia

Age	Pre-term	Term	3 months	6 months	1 year	3 year	6 year	8 year
Weight (kg)	1.5	3.0	6.0	8.0	10.0	14.0	20.0	25.0
Dextrose 25% .5 gm / kg	0.75 gm	1.5 gm	3.0 gm	4.0 gm	5.0 gm	7.0 gm	10.0 gm	12.5 gm
Dextrose 25% 2.0 ml / kg	3.0 ml	6.0 ml	12.0 ml	16.0 ml	20.0 ml	28.0 ml	40.0 ml	50.0 ml
Dextrose 10% 2.0 ml / kg	3.0 ml	6.0 ml						

Use D10 for pediatrics 0 – 30 days  
D10 dose 2 ml/kg (0.2 mg/ml)

Note: to mix D10    Use D50 – draw up 10 ml of D50 in 50 ml syringe  
mix with 40 ml of normal saline  
yields 50 ml of 10% Dextrose and water  
or  
Use D25 – Mix 1:1 with normal saline  
yields 12.5% Dextrose and water

### **Supplied in ODEMSA Drug box:**

2 – 2.5 gm (250 mg / ml) syringes

## 10. Diazepam (Valium)

2008

### **Indications:**

Major motor seizures	Skeletal muscle relaxant
Status Epilepticus	Premedication prior to cardioversion
Acute anxiety stress	Violent and / or agitation

### **Mechanism of Action:**

Diazepam is an anticonvulsant and anti-anxiety agent. Binds to Benzodiazepine receptors to enhance GABA effects.

### **Contraindications:**

Hypersensitivity to drug

### **Precautions:**

Short-acting drug, seizures may recur  
May decrease respirations  
May lower blood pressure  
Possible CNS depression when combined with Geodon.

### **Side effects:**

Respiratory depression	Apnea
Drowsiness	Ataxia
Transient amnesia	Hypotension
Reflex tachycardia	Pain or burning at the IV site

### **Dosage:**

2.5 – 5 mg slow IV push                      Violent and / or agitation: 2.5 mg to 5.0 mg IM,IV  
Repeat in 10 – 15 minutes if needed

### **Pediatrics**

0.3 mg / kg (0.5 mg / kg if PR)

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Diazepam (5 mg/ml) 0.3 mg/kg	0.1 cc	0.2 cc	0.5 cc	0.6 cc	0.84 cc	1.2 cc	1.5 cc	2.0 cc	2.0 cc	2.0 cc
Diazepam (5 mg/ml) 0.5 mg/kg if PR	0.15 cc	0.3 cc	0.8 cc	1.0 cc	1.4 cc	2.0 cc	2.0 cc	2.0 cc	2.0 cc	2.0 cc

Note: Rectal route takes 3 – 4 times longer than IV route

### **Supplied in ODEMSA Drug box:**

1 – 10 mg (10 mg / 2 ml) vial  
or 1– 10mg (10mg /2ml) prefilled tubex

#### Rectal Administration Tip

Draw Diazepam up in 3 cc syringe. Attach an extension tube to the syringe and cut off the catheter adapter at the other end, leaving a 3 – 4 inch flexible tube. Insert the tube into the rectum for administration. Flush with 3 cc s of air.

**Indications:**

- Allergic reactions
- Urticaria (hives)
- Anaphylaxis

**Extrapyramidal (EPS) reaction:**

(e.g., tremors, gait abnormalities, dysphagia caused by phenothiazines like Chlorpromazine, Thioridazine, or Perphenazine. )

**Mechanism of Action:**

Blocks both H<sup>1</sup> and H<sup>2</sup> histamine receptors

**Contraindications:**

Should not be used in the management of asthma

**Precautions:**

- Angle-closure glaucoma
- Concurrent ingestion of alcohol or other CNS depressants producing an additive effect that could impair motor skills

**Side effects:**

- Sedation
- Disturbed coordination
- Diplopia
- Hypertension
- Headache
- Drowsiness
- Dizziness
- Blurred vision
- Tremors
- Palpitations
- Nausea

**Dosage:**

Adult dose: 50 mg IV or IM

Pediatric dose: 1 – 2 mg/kg IV, IO or IM

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Diphenhydramine 1 mg / kg	1.5 mg	3.0 mg	8.0 mg	10.0 mg	14.0 mg	20.0 mg	25.0 mg	34.0 mg	40.0 mg	50.0 mg
Diphenhydramine 2 mg / kg	3.0 mg	6.0 mg	16.0 mg	20.0 mg	28.0 mg	40.0 mg	50.0 mg	50.0 mg	50.0 mg	50.0 mg

**Supplied in ODEMSA Drug box:**

1 – 50 mg (50 mg / ml) vial

**Indications:**

Atrial fibrillation with a ventricular response of 120 beats per minute or greater.  
 Paroxysmal supraventricular tachycardia (PSVT) accompanied by a narrow QRS complex, refractory to vagal maneuvers and adenosine.

**Mechanism of Action:**

Class IV antiarrhythmic agent

Decreases automaticity in the sinoatrial (SA) node

Prolongs refractoriness in the atrioventricular (AV) node

It inhibits the influx of extracellular calcium ions to myocardial and vascular smooth muscle cells; decreases cardiac contractility and inhibits constriction of vascular smooth muscle.

In patients with PSVT, Diltiazem interrupts the reentry pathway in the AV node and restores normal sinus rhythm.

It decreases ventricular response rate in atrial fibrillation and flutter

**Contraindications:**

Bradycardia

Hypotension

Patients who present in CHF

**Precautions:**

Calcium channel blockers such as Diltiazem should be used with caution in patients who receive long-term beta blocker therapy.

**Side effects:**

Severe bradycardia

Hypotension

may be reversed with 0.5 – 1.0 gm calcium chloride IV

for profound hypotension an alpha-adrenergic agonist may be beneficial

Congestive heart failure

Facilitated accessory conduction in patients with Wolf-Parkinson-White syndrome.

**Dosage:**

0.25 mg / kg bolus over 2 minutes.

If response is inadequate, 0.35 mg / kg over 2 minutes 15 minutes after initial dose

	50 kg	75 kg	100 kg	125 kg
0.25 mg/kg	12.5 mg	18.75 mg	25 mg	31.25 mg
0.35 mg/kg	17.5 mg	26.25 mg	35 mg	43.75 mg

**Supplied in ODEMSA Drug box:**

3 – 25 mg (25 mg/ 5 ml) ready to use syringe (Lyo-Jet)

### 13. Dopamine (Intropin)

2008

#### **Indications:**

Cardiogenic shock  
Hypovolemic shock - after fluid resuscitation  
Neurogenic shock  
Hemodynamically significant bradyarrhythmias that have not responded to Atropine (when cardiac pacing is unavailable)

#### **Mechanism of Action:**

Produces endogenous norepinephrine release leading to increased cardiac contractility and increased systemic vascular resistance.

#### **Contraindications:**

Not used as the sole treatment of hypovolemic shock  
Uncorrected tachyarrhythmias  
Ventricular fibrillation

#### **Precautions:**

Should not be administered in the presence of ventricular fibrillation  
If the patient is taking monoamine oxidase inhibitors (Seliginine, Iproniazid, Tranyl-  
cypromine), the dose should be reduced to prevent possible hypertensive crisis.

#### **Side effects:**

Tachycardia	Ectopic beats	Palpitations	Angina
Headache	Tremor	Dyspnea	Nausea
Vomiting			

#### **Dosage:**

Mix 400 mg in 250 ml of D5W to yield a concentration of 1600 µg/ml  
Start infusion at 2 – 5 µg/kg min  
Titrate the infusion to maintain blood pressure above 90 mm Hg systolic

		Weight in kg											
		2.5	5	10	20	30	40	50	60	70	80	90	100
µg/kg/minute	2 µg	-	-	-	1.5	2	3	4	5	5	6	7	8
	5 µg	-	1	2	4	6	8	9	11	13	15	17	19
	10 µg	1	2	4	8	11	15	19	23	26	30	34	38
	15 µg	1.4	3	6	11	17	23	28	34	39	45	51	56
	20 µg	2	4	8	15	23	30	38	45	53	60	68	75

#### **Supplied in ODEMSA Drug box:**

2 – 200 mg (200 mg / 5 ml) vial

#### **Microdrops per minute**

**Indications:**

Severe, systemic allergic reaction  
 Asthma in patients under 50 years of age  
 Exacerbation of COPD

**Mechanism of Action:**

Potent catecholamine with both alpha and beta properties, effects are more profound on beta.  
 Epinephrine bronchodilates and antagonizes the effects of histamine.

**Contraindications:**

Patient with coronary artery disease  
 Patient is over 50 years of age

**Precautions:**

May precipitate angina or myocardial infarction in cardiac patients  
 Wheezing in elderly patients may be pulmonary edema or pulmonary embolism

**Side effects:**

Anxiety  
 Tremors  
 Palpitations  
 Tachycardia  
 Headache

**Dosage:**

0.3 mg IM (preferred method) or SQ

Pediatric dose: 0.01 mg/kg

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Epinephrine 1:1000 (1 mg / ml ) 0.01 mg / kg	0.02 mg	0.03 mg	0.08 mg	0.1 mg	0.14 mg	0.2 mg	0.25 mg	0.3 mg	0.3 mg	0.3 mg
Epinephrine 1:1000 (1 mg / ml ) 0.01 ml / kg	0.02 ml	0.03 ml	0.08 ml	0.1 ml	0.14 ml	0.2 ml	0.25 ml	0.3 ml	0.3 ml	0.3 ml

**Supplied in ODEMSA Drug box:**

2 – 1 mg (1 mg / ml) ampules  
 1— 30 ml (1 mg / ml) vial

## 15. Epinephrine 1:10,000

2008

### **Indications:**

Ventricular fibrillation  
Asystole  
PEA

### **Mechanism of Action:**

Alpha and Beta stimulant  
Increase myocardial and cerebral blood flow during CPR  
Beta effects - contractile force, heart rate, automaticity

### **Contraindications:**

Contraindicated in patients that do not require extensive resuscitation

### **Precautions:**

Protect from light  
Flush between sodium bicarb and epinephrine

### **Dosage:**

1 mg every 3 - 5 min via IV or ET

Pediatric dose: 0.01 mg/kg

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Epinephrine 1:10,000 (10 mg / ml ) 0.01 mg / kg	0.02 mg	0.03 mg	0.08 mg	0.1 mg	0.14 mg	0.2 mg	0.25 mg	0.34 mg	0.4 mg	0.5 mg
Epinephrine 1:1000 (10 mg / ml ) 0.1 ml / kg	0.2 ml	0.3 ml	0.8 ml	1.0 ml	1.4 ml	2.0 ml	2.5 ml	3.0 ml	4.0 ml	5.0 ml

### **Supplied in ODEMSA Drug box:**

10 – 1 mg (1 mg / 10 ml) syringes

## 16. Furosemide (Lasix)

2008

### **Indications:**

Congestive Heart Failure  
Pulmonary Edema  
Hypertensive crisis

### **Mechanism of Action:**

Potent diuretic that inhibits sodium and chloride re-absorption in the kidneys  
Causes venous dilation

### **Contraindications:**

Patients who are allergic to sulfonamides or thiazides  
Hypokalemia

### **Precautions:**

Should be limited to life-threatening situations in pregnant patients

### **Side effects:**

Potassium depletion with attendant dysrhythmias  
Vertigo  
Visual / auditory disturbances  
Nausea and vomiting  
Dehydration and electrolyte depletion can result

### **Dosage:**

0.5 - 1 mg/kg IV slowly

Pediatric dose: 0.01 mg/kg

	50 kg	75 kg	100 kg	125 kg
Furosemide 0.5 mg/kg	25 mg	37.5 mg	50 mg	62.5 mg
Furosemide 1.0 mg/kg	50 mg	75 mg	100 mg	125 mg

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Furosemide 0.5 mg/kg	0.75 mg	1.5 mg	4.0 mg	5.0 mg	7.0 mg	10.0 mg	12.5 mg	17.0 mg	20.0 mg	25.0 mg
Furosemide 1.0 mg/kg	1.5 mg	3.0 mg	8.0 mg	10.0 mg	14.0 mg	20.0 mg	25.0 mg	34.0 mg	40.0 mg	50.0 mg

### **Supplied in ODEMSA Drug box:**

2 – 100 mg (10 mg / ml) vial

## **17. Geodon (Ziprasidone)**

2008

### **Indications:**

Schizophrenic, bipolar manic or mixed episodes associated with bipolar disorders exhibiting acute agitation, anxiety, tension, and hostility.

### **Mechanism of Action:**

Dopamine and serotonin antagonism.

### **Contraindications:**

Patient with history of cardiac arrhythmias, recent MI, severe heart failure dysrhythmias. Elderly patients with dementia-related psychosis.

### **Precautions:**

Cardiovascular disease	Cerebrovascular disease
Hypotension	Hypovolemia
Acute renal disease	
Patient taking antihypertensive medications	

### **Side Effects:**

Orthostatic hypotension, dizziness, syncope, Cardiac dysrhythmias  
Such as Torsades de Pointes and QT prolongation

### **Dosage:**

Adult: 10 mg IM  
Maximum doses 40 mg per day

### **Supplied in ODEMSA Drug box:**

1 vial: 20mg/ml

(Add 1.2 ml of sterile water to vial and shake vigorously until all the drug is dissolved.  
20 mg single dose vial in 1.0 ml of reconstituted solution.)

## 18. Glucagon

2008

### **Indications:**

Hypoglycemia

### **Mechanism of Action:**

Releases stored glycogen from the liver converting it to glucose

### **Contraindications:**

Known Hypersensitivity

### **Precautions:**

Follow with carbohydrates such as a prompt meal, orange juice, or D50 as soon as the patient is alert or an IV is established.

### **Dosage:**

1 mg IM, SQ, IV

Draw up diluting solution from vial 1 and inject in vial 2

Shake gently until Glucagon dissolves and the solution becomes clear

Draw back into syringe and administer

8 - 10 min before reaction can be seen

Lasts 10 - 30 min

Pediatric dose: 0.1 mg/kg IV, IM, IO, or SQ up to a maximum of 1 mg

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Glucagon 0.1 mg / kg	0.15 mg	0.3 mg	0.8 mg	1.0 mg	1.0 mg	1.0 mg	1.0 mg	1.0 mg	1.0 mg	1.0 mg

### **Supplied in ODEMSA Drug box:**

1 – 1 mg (1 mg / ml) vial

**Indications:**

Bronchial Asthma.

Reversible bronchospasm associated with chronic bronchitis and cases of emphysema.

**Mechanism of Action:**

Parasympatholytic. Causes bronchodilation and dries respiratory secretions. Blocks acetylcholine receptors.

**Contraindications:**

Known Hypersensitivity

Should not be used for the acute treatment of bronchospasm, for which rapid response is required.

**Precautions:**

Monitor patients during treatment.

Auscultate lung sounds before and after treatments.

Use caution when administering to elderly patients and those with cardiovascular disease.

**Dosage:**

500 µg mixed with 5 mg of 5% Albuterol solution

or

Mix one prefilled ampule Ipratropium 0.5 mg / 2.5 ml with two prefilled ampules of Albuterol solution 5.0 mg / 3.0 ml

**Supplied in ODEMSA Drug box:**

2 – 500 µg unit dose vials

or

4 prefilled ampules 0.5mg / 2.5 ml

## **20. Lorazepam (Ativan)**

2008

### **Indications:**

Major motor seizures	Skeletal muscle relaxant
Status Epilepticus	Premedication prior to cardioversion
Acute anxiety stress	Violent and/or agitation

### **Mechanism of Action:**

Ativan is a anticonvulsant, anti-anxiety agent and induces amnesia.

### **Contraindications:**

Any hypersensitivity to the drug.

### **Precautions:**

Should be diluted with normal saline prior to IV administration.  
Due to Ativan being a short-acting drug, seizure activity may recur thus requiring an additional dose.

### **Side effects:**

Hypotension	Drowsiness
Amnesia	Respiratory depression
Blurred vision	Nausea
Vomiting	

**Dosage:** 1.0 mg to 2.0 mg IV, maybe repeated once without medical control.

**Supplied in ODEMSA Drug Box:**

**2 - 1mg/2ml vial**

**Indications:**

Magnesium is to be used for seizures due to eclampsia.

Magnesium can be used in the treatment of asthma.

Magnesium can also be used as an anti-arrhythmic in the treatment of Torsades de Pointes.

Magnesium can be used in patients who have suspected hypomagnesemia.

**Mechanism of Action:**

Magnesium sulfate reduces striated muscle contractions and blocks peripheral neuromuscular transmission by reducing acetylcholine release at the myoneural junction. It is used in management of seizures associated with toxemia of pregnancy. Magnesium Sulfate is a class IIa recommendation in patients who have known low or suspected low magnesium states such as alcoholism or other conditions associated with malnutrition. It is a class IIb recommendation in patients who are in Torsades de Pointes.

**Contraindications:**

Magnesium should not be given in the presence of heart block or myocardial damage.

**Precautions:**

Magnesium may enhance CNS depressant effects if the patient is taking other CNS depressants.

Magnesium can cause serious changes in cardiac function if given in large doses.

**Side Effects:**

Magnesium may cause diaphoresis, facial flushing, and diarrhea.

Magnesium can cause hypotension, reduced heart rate, circulatory collapse, and respiratory depression.

**Dosage:**

4 grams mixed in 250 cc of normal saline infused over 5-10 minutes for eclampsia.

1-2 grams IVP for the treatment of Torsades de Pointes.

1 gram IM per injection site. Max dose 4 grams.

**Supplied in ODEMSA Drug box:**

4 – 1 gm (500 mg / ml)

**Indications:**

Patients with chest pain of presumed cardiac in origin.

**Mechanism of Action:**

To reduce myocardial ischemia and damage associated with acute myocardial infarction, to decrease myocardial oxygen demand, Beta blocker.

**Contraindications:**

Heart rate is less than 70 or systolic blood pressure less than 120. Patients in severe bradycardia, 2<sup>nd</sup> or 3<sup>rd</sup> degree heart block, cardiogenic shock, decompensated cardiac failure, sick sinus syndrome (unless a permanent pacemaker is in place), severe asthma patients, and in patients with a known hypersensitivity to the drug. Any patient on any erectile dysfunction medication.

**Precautions:**

Patients with liver or renal dysfunction and administration concurrent with diltiazem which may cause severe hypotension.

**Side Effects:**

Bradycardia and hypotension

**Dosage:**

Adult: 5 mg via IV over 5 minutes. Repeat after 5 minutes.  
(Maximum dosage: 15 mg)

Pediatric: None

**Supplied in ODEMSA Drug Box:**

2 – 5mg (5mg/5ml) ampules

**Indications:**

Cardiac chest pain refractory to nitroglycerin  
 Severe pain associated with kidney stones, etc.  
 Pulmonary edema, with or without associated pain

**Mechanism of Action:**

Potent CNS depressant  
 Increases peripheral venous capacitance  
 Decreases myocardial oxygen demand

**Contraindications:**

Hypotensive patients  
 Respiratory depression  
 Asthma  
 Head injury or abdominal pain  
 Hypersensitivity to narcotics  
 Patient who has taken another depressant drug

**Precautions:**

Respiratory depression  
 Hypotension  
 Bradycardia  
 Nausea and vomiting

**Side effects:**

Respiratory depression

**Dosage:**

2 mg via slow IV push every 5 – 30 minutes until desired therapeutic effect is achieved, up to 10 mg.

Pediatric dose: 0.1 – 0.2 mg/kg IV, IO, IM, or SQ

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Morphine Sulfate 0.1 mg / kg	0.15 mg	0.3 mg	0.8 mg	1.0 mg	1.4 mg	2.0 mg	2.5 mg	3.4 mg	4.0 mg	5.0 mg
Morphine Sulfate 0.2 mg / kg	0.3 mg	0.6 mg	1.6 mg	2.0 mg	2.8 mg	4.0 mg	5.0 mg	6.0 mg	6.0 mg	6.0 mg

**Supplied in ODEMSA Drug box:**

2 – 10 mg (10 mg / ml) syringe

**Indications:**

Chest pain associated with angina or myocardial infarction  
Pulmonary edema

**Mechanism of Action:**

Vascular smooth muscle relaxation leading to venous, coronary, and arterial vasodilation.  
These effects lead to a decrease in the work load on the heart.

**Contraindications:**

Hypotension  
Hypersensitivity to nitrates  
Patients with increased intracranial pressure  
Use of any erectile dysfunction medications (ie: Viagra)

**Precautions:**

Hypotension may develop

**Side effects:**

Headaches due to cerebral vasodilation  
Hypotension

**Dosage:**

0.4 mg SL repeated every 5 min. up to 3 doses  
1 inch ( 15 mg ) nitropaste

**Supplied in ODEMSA Drug box:**

1 – 25 tablet (0.4 mg / tab.) bottle  
1 – 60 gm (15 mg / inch) tube

## 24. Naloxone (Narcan)

2008

### **Indications:**

Reversal of Narcotic-induced altered mental status and respiratory depression.  
Diagnosis of suspected acute opioid intoxication

### **Mechanism of Action:**

Competitive narcotic antagonist; as such, it is a specific narcotic antidote.

### **Contraindications:**

Hypersensitivity to drug

### **Precautions:**

Abrupt withdrawal effects

### **Side effects:**

Nausea and vomiting  
Excitation for abrupt reversal of narcotic depression

### **Dosage:**

1-2 mg IV repeated in 5 min (2-3 times) max 10 mg  
Reversal of Sedation may require only small dose

Pediatric dose: 0.1 mg/kg IV, IM, or ET

Age	Pre-term	Term	6 months	1 year	3 year	6 year	8 year	10 year	12 year	14 year
Weight (kg)	1.5	3.0	8.0	10.0	14.0	20.0	25.0	34.0	40.0	50.0
Naloxone (Narcan) 0.1 mg / kg	0.15 mg	0.3 mg	0.8 mg	1.0 mg	1.4 mg	2.0 mg	2.5 mg	3.4 mg	4.0 mg	5.0 mg

### **Supplied in ODEMSA Drug box:**

2 – 2 mg (1 mg / ml)

**Indications:**

Suspected or possible hypoxia due to trauma or medical emergencies.

**Mechanism of action:**

Oxygen is transported to the cells via the hemoglobin found in red blood cells. It breaks down glucose into a usable energy form.

**Contraindications:**

There are no contraindications in the field. Never deprive a patient oxygen.

**Precautions:**

Monitor patients that have history of COPD, high concentrations over long periods of time may cause respiratory depression. Administration of high flow for prolonged time (not in prehospital but rather in prolonged transports) may cause damage to neonate eyes (retrolental fibroplasia).

**Side effects:**

Drying of mucous membranes  
Epistaxis  
Nasal irritation

**Dosage:**

Is based on the patient's underlying problem(s).

**Supplied:**

Oxygen is supplied in various tank sizes.

**Indications:**

Cardiac arrest  
Tricyclic overdose

**Mechanism of Action:**

Increases plasma bicarbonate which buffers plasma H<sup>+</sup> ions and raises blood pH

**Contraindications:**

Respiratory or metabolic alkalosis

**Precautions:**

Can cause alkalosis  
Most vasopressors, such as Dopamine, can be deactivated by the alkaline environment provided by the Sodium Bicarbonate.

**Side effects:**

Volume overload  
Alkalosis

**Dosage:**

1 mEq / kg IV  
Followed by 0.5 mEq / kg every 10 minutes

**Supplied in ODEMSA Drug box:**

1 – 50 mEq ( 1 mEq / ml ) syringe

**RSI 1. Lidocaine HCL**  
(Used as a premedication in the RSI box)

**Indications:**

RSI patients with suspected head injury

**Mechanism of Action:**

Lidocaine is indicated for patients with suspected head injury to manage increased intracranial pressure. Lidocaine has been shown to blunt the cardiovascular response to the stimulation of the airway. Lidocaine decreases the likelihood of tachycardia and hypertension. Lidocaine decreases intracranial and intraocular pressure that can be associated with RSI.

**Contraindications:**

Heart block, severe hypovolemia, bradycardia, CHF

**Precautions:**

**Side effects:**

Drowsiness	Seizures	Confusion
Hypotension	Bradycardia	Heart Blocks
Nausea	Vomiting	Cardio/Respiratory Arrest

**Dosage:**

1.0 - 2.0 mg/kg IV (max. dose 150 mg), 2 - 5 minutes prior to laryngoscopy. Maximum efficiency is 3-5 minutes after dosing.

**Supplied in ODEMSA Drug Box:**

Lidocaine is used as a premedication in the RSI box, and is not available in the ODEMSA drug box.

**RSI 2. Atropine Sulfate**  
(NOT carried in the RSI box.)

2008

**Indications:**

Consider Atropine for any patient with bradycardia prior to intubation.

Bradycardia  
Asystole  
PEA (with bradycardia)  
Organophosphate poisoning

**Mechanism of Action:**

Atropine produces its antispasmodic, anti-secretory and cardiovascular effects by blockage of acetylcholine at cholinergic receptor sites. Atropine inhibits effects of parasympathetic nervous system  
Positive Chronotropic with little Inotropic effects

**Contraindications:**

None in the emergency setting.

**Precautions:**

American Heart Association guidelines acknowledge that use (and efficacy) of Atropine is controversial for treatment of patients with acute MI and second or third degree AV block with QRS widening.

**Side effects:**

May precipitate tachyarrhythmias, dysphasia, erythema, flushing, headache, hypotension, mydriasis, vertigo and xerostomia

**Dosage:**

**REFER TO MEDICATION REFERENCE 5, ATROPINE SULFATE FOR DOSING INFORMATION.**

**Supplied in ODEMSA Drug box:**

4 - 1 mg (1 mg/10 ml) syringe

**Indications:**

Sedatives must be administered prior to administration of a neuromuscular blocking agent to eliminate the sensation of paralysis.

**Mechanism of Action:**

An anxiolytic sedative and hypnotic agent with an onset of action of 30 seconds and a duration of action from five (5) to (10) minutes. It is well suited as an induction agent for RSI because its pharmacokinetic profile closely matches that of succinicholine and it has minimal cardiovascular side effects. The transient suppression of cortisol synthesis is of no clinical significance with a single dose.

**Contraindications:**

Adrenal insufficiency, hypersensitivity to etomidate

**Precautions:**

**Side effects:**

Clinically significant adrenal dysfunction has been seen with long term use of etomidate.

**Dosage:**

0.3 mg/kg.

Consider dose reduction in the elderly because of age related differences in kinetic parameters and increased risk for cardiac depression in older hypertensive patients.

**Supplied in ODEMSA Drug box:**

Etomidate is used as a sedative in the RSI box, and is not available in the ODEMSA drug box.

**Indications:**

Sedatives must be administered prior to administration of a neuromuscular blocking agent to eliminate the sensation of paralysis.

**Mechanism of Action:**

A safe, short acting benzodiazepine with a slightly longer duration (30-60 minutes). Re-dosing is therefore less likely. There is also a remarkable amnesic quality to Versed that is of great importance with the successful completion of this skill and patient satisfaction.

**Contraindications:**

**Precautions:**

**Side effects:**

Hypotension related to versed administration (may be reversed with IV fluid bolus)

**Dosage:**

0.05 mg/kg IV push (2 - 5 mg). Versed should be administered two (2) full minutes before intubation is attempted.

2 - 5 mg IV push may be repeated in 6 - 10 minutes after initial dose. Additional sedation may be needed to control tube placement, intracranial pressure, and vital signs.

Re-dosing may be administered to patients who are agitated, arousable, and aware of their surroundings to reduce the fear and stress related to the intubation.

**Supplied in ODEMSA Drug box:**

Versed is used as a sedative in the RSI box, and is not available in the ODEMSA drug box.

**Indications:**

Succinylcholine is a neuromuscular paralytic agent used to facilitate Rapid Sequence Intubation in patients meeting RSI criteria.

**Mechanism of Action:**

An ultra-short acting depolarizing-type skeletal muscle relaxant. It is well suited for RSI but does have some potentially life-threatening side effects in certain patient populations. Succinylcholine has an onset of action of 45 seconds with an initial dose. It has a duration of action from five (5) to ten (10) minutes.

**Contraindications:**

Muscular dystrophy, myopathies, denervation syndromes, stroke, spinal cord injury, prolonged immobilization, known hyperkalemia.

**Precautions:**

**Side effects:**

Fasciculations, hyperkalemia, bradycardia, increased ICP, increased IOP and MH. Succinylcholine should not be given to patients for a period from 24 hours to 21 days after significant burns or crush injury because of elevated potassium levels and the Potential for cardiac dysrhythmias.

**Dosage:**

1.5 mg/kg, may repeat in two (2) to three (3) minutes to achieve paralysis (2 mg/kg in children, 3 mg/kg in infants).

**Supplied in ODEMSA Drug box:**

Succinylcholine is a neuromuscular paralytic in the RSI box, and is not available in the ODEMSA drug box.

**Indications:**

Vecuronium is a neuromuscular blocker used to facilitate Rapid Sequence Intubation in patients meeting RSI criteria.

**Mechanism of Action:**

A non-depolarizing neuromuscular blocker. It has an intermediate duration of action of 30-60 minutes with an initial dose. It produces clinical effects in approximately 30 seconds, and intubation paralysis in one to four (1 - 4) minutes.

**Contraindications:**

**Precautions:**

**Side effects:**

**Dosage:**

0.1 mg/kg IV Push (up to a maximum initial dose of 10mg). 1/2 initial dose IV Push may be repeated 20 minutes after initial dose as indicated.

**Supplied in ODEMSA Drug box:**

Vecuronium is a neuromuscular blocker in the RSI box, and is not available in the ODEMSA drug box.