

ADENOSINE / ADENOCARD®**09/10/2013****[PARAMEDIC]**

ACTIONS	Naturally occurring nucleoside slows electrical conduction through the AV node.
INDICATIONS	To convert PSVT to normal sinus rhythm, including PSVT that is associated with accessory bypass tracts (e.g., WPW).
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Second or third degree heart block (except in patients with a functioning artificial pacemaker) 2. Sick sinus syndrome (except in patients with a functioning artificial pacemaker) 3. Pregnancy (relative contraindication since no studies have been performed)
ADULT	PSVT: 6 mg rapid IVP, use IV port as close to patient as possible and follow with rapid NS flush. 2 nd dose of 12 mg may be repeated in 1-2 min. if no change is observed.
PEDIATRIC 	PSVT: MD order 0.1 mg/kg IVP, increase to 0.2 mg/kg if necessary.
KEY POINTS	May be used in pregnancy if benefit outweighs risk.

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ALBUTEROL 0.083 % (2.5 mg Albuterol diluted to 3 ml) 09/10/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Sympathomimetic drug, Beta 2-selective. Dilates bronchioles, increases heart rate.
INDICATIONS	<ol style="list-style-type: none"> 1. Respiratory distress with bronchospasms / wheezes. 2. Treatment of suspected hyperkalemia.
CONTRA-INDICATIONS	Known hypersensitivity
PRECAUTIONS 	<ol style="list-style-type: none"> 1. HR over 160 or suspected myocardial ischemia (i.e. chest pain) consult MD prior to use. 2. Use cautiously in pt. with cardiovascular disease, dysrhythmias, CHF, convulsive disorders, diabetes, hyperthyroidism and patients who are unusually sensitive to drugs that stimulate the sympathetic nervous system.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Tachycardia, nervousness, tremors, dizziness, palpitations, nausea, vomiting, headache, nasal congestion, hypertension, bad taste and increased bronchial secretions. 2. Paroxysmal bronchoconstriction can occur in patients with repeated excessive administration.
ADULT	Bronchospasms and Hyperkalemia: Nebulized premeasured 2.5mg vial, may repeat as needed.
PEDIATRIC 	Bronchospasms and Hyperkalemia: Nebulized premeasured 2.5mg vial, may repeat as needed.
KEY POINTS	<ol style="list-style-type: none"> 1. Administer simultaneously with atrovent. 2. Should be kept out of direct sun light. 3. Albuterol by nebulizer is an adjunct drug in allergic reaction; it is not a substitute for epinephrine in severe anaphylaxis.

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AMIODARONE / CORDARONE	
09/09/2014	
[EMT-I, PARAMEDIC]	
ACTIONS	Antiarrhythmic
INDICATIONS	<ol style="list-style-type: none"> 1. For treatment of shock-refractory VF and pulseless VT. 2. For treatment of wide complex tachycardia with a pulse; including ventricular tachycardia, pre-excited atrial fibrillation (AF + WPW).
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Cardiogenic shock 2. Marked sinus bradycardia 3. Second or third degree AV block in the absence of a functioning pacemaker.
PRECAUTIONS	May cause vasodilatation, hypotension and/or prolonged QT interval. Use with caution if renal failure is present.
ADULT	<p>Pulseless arrest; VF or VT: 300 mg IVP/IO, may repeat 150mg in 3-5min.</p> <p>Post conversion if arrhythmia returns with a pulse or if increasing ectopy: 150 mg over 10 minutes, mix in 100 cc NS, run at 15mg/min If hypotension or bradycardia develops, stop the infusion.</p> <p>Wide complex tachycardia with a pulse; including VT: 150 mg IV/IO over 10 minutes, mix in 100cc NS, run at 15 mg/min. Repeat once as needed if VT recurs.</p>
PEDIATRIC	<p>Pulseless arrest; VF or VT: 5mg/kg IV/IO (max of 300mg per dose) total of 3 dose</p> <p>Wide complex tachycardia: 5mg/kg IV/IO (max of 150 mg per dose) mix in 100cc NS, run at 50gtts/min over 20 min, may repeat once with MD order.</p>
KEY POINTS	Incompatible with sodium bicarbonate and heparin. Do not administer in the same IV tubing without flushing between meds.

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ASPIRIN (ACETYLSALICYLIC ACID) 01/06/2014 [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Anti-platelet agent.
INDICATIONS	Suspected MI or cardiac chest pain
CONTRA-INDICATIONS	1. Known allergy 2. Active or recent GI bleed within the last 7 days
ADULT	Cardiac chest pain: 324 mg (4x81 mg chewable “baby aspirin”)* *If patient has taken 324 mg of ASA in the last 2 hours, Aspirin therapy may be waived.

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ATROPINE SULFATE	
09/10/2013	
[EMT-I, PARAMEDIC]	
ACTIONS	Anticholinergic agent (Parasympatholytic)
INDICATIONS	<ol style="list-style-type: none"> 1. Symptomatic bradycardia 2. Organophosphate O.D. 3. Pre-treatment for RSI (< 10 y.o.)
PRECAUTIONS	<ol style="list-style-type: none"> 1. Used cautiously in atrial fibrillation and flutter because increased conduction may speed ventricular rate excessively. 2. Initiate pacing if any delay in administering atropine. 3. Bradycardia in the setting of an acute MI is common and probably beneficial. Do not treat unless there are signs of poor perfusion (low blood pressure, mental confusion). Chest pain could be due to an MI or to poor perfusion caused by the bradycardia itself.
SIDE EFFECTS	Dilates pupils
ADULT 	<p>Symptomatic bradycardia: 0.5 mg IVP every 3-5 min to 3.0 mg (ET use 2x dose)</p> <p>Organophosphate poisoning: 1.0 mg IVP Q 2-3 min until drying of secretions. If HR > 120, consult with MD prior to use.</p>
PEDIATRIC 	<p>Symptomatic bradycardia: 0.02 mg/kg IVP, not to exceed 0.5 mg per dose (ET use 2x dose); PRN 3-5 minutes to max of 1 mg child and 2 mg adolescent</p> <p>Organophosphate poisoning: 0.02 mg/kg IVP, not to exceed 0.5 mg per dose, PRN 2-3 min. until drying of secretions.</p> <p>RSI pretreatment (Children < 10 y.o.): 0.02 mg/kg (minimum 0.1 mg) IV/IO given 3 minutes before RSI.</p>

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ATROVENT / IPRATROPIUM**09/10/2013****[A-EMT, EMT-I, PARAMEDIC]**

ACTIONS	Anticholinergic and bronchodilator.
INDICATIONS	Maintenance treatment of bronchospasm associated with asthma and chronic obstructive pulmonary diseases (COPD).
CONTRA-INDICATIONS	Known allergy to atrovent or atropine.
PRECAUTIONS 	<ol style="list-style-type: none"> 1. In patients with heart rate >160 MD Order 2. Use with caution in patients with suspected MI.
SIDE EFFECTS	May cause palpitations, dry mouth, blurred vision, anxiety, dizziness, and/or headache in some patients
ADULT	Bronchospasm: 0.5 mg nebulized, combined with albuterol
PEDIATRIC 	Bronchospasm: Child (>5y/o): 0.5 mg combined with albuterol Child (<5y/o): 0.25 mg combined with albuterol
KEY POINTS	<ol style="list-style-type: none"> 1. Administer simultaneously with albuterol. 2. Protect from light

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CALCIUM CHLORIDE 10% 09/10/2013 [PARAMEDIC]	
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	<ol style="list-style-type: none"> 1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	<ol style="list-style-type: none"> 1. Do not give simultaneously with sodium bicarbonate. Flush tubing well between medications. 2. Use with caution in patients on digoxin. May precipitate digoxin toxicity. May cause arrhythmias. 3. Necrosis can occur if the medication infiltrates.
ADULT  	<p>Cardiac Arrest In Dialysis patient or suspected renal failure patient: 1.0 Gram IVP, give after initial shock and first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest)</p> <p>Dysrhythmias In Dialysis Patient: 1.0 Gram slow IVP, Consult MD first if possible. <u>Bradycardia:</u> (follow Cardiac Algorithm Bradycardia) <u>Wide complex tachycardia:</u> (follow Cardiac Algorithm Tachycardia)</p> <p>Symptomatic Overdose On Calcium Channel Blocker: 1.0 Gram slow IVP over 2 min. <u>Hypotension:</u> < 80 systolic (follow Shock Protocol) <u>Bradycardia:</u> < 50/min (follow Cardiac Algorithm Bradycardia)</p> <p>Reverse Magnesium Sulfate Toxicity: 1.0 Gram slow IVP over 2 min. MD order <u>Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes.</u></p> <p>Suspected Hyperkalemia: 1.0 Gram slow IVP over 5 min.</p>
PEDIATRIC 	<p>Suspected Hyperkalemia: 20 mg/kg (0.2 ml/kg) slow IVP over 5 min. MD order</p>

CALCIUM CHLORIDE 10%
09/10/2013

[PARAMEDIC]

KEY POINTS

1. Rapid administration can cause bradycardia or arrest, give slowly.
2. Some calcium channel blockers which may be taken in overdose include: diltiazem (Cardizem), felodipine (Plendil), nicardipine (Cardene), nifedipine (Adalat, Procardia), verapamil (Calan, Isoptin).
3. Calcium should not be used during resuscitation except for uses listed under indications.

CALCIUM GLUCONATE	
09/10/2013 [PARAMEDIC]	
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	<ol style="list-style-type: none"> 1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	<ol style="list-style-type: none"> 1. Do not give simultaneously with sodium bicarbonate. Flush tubing well between medications. 2. Use with caution in patients on digoxin. May precipitate digoxin toxicity. May cause arrhythmias. 3. Necrosis can occur if the medication infiltrates.
ADULT	<p>Cardiac Arrest In Dialysis patient or suspected renal failure patient: 3.0 Gram IVP, give after initial shock and first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest)</p> <p>Dysrhythmias In Dialysis Patient: 3.0 Gram slow IVP, Consult MD first if possible. <u>Bradycardia:</u> (follow Cardiac Algorithm Bradycardia) <u>Wide complex tachycardia:</u> (follow Cardiac Algorithm Tachycardia)</p> <p>Symptomatic Overdose On Calcium Channel Blocker: 3.0 Gram slow IVP over 2 min. <u>Hypotension:</u> < 80 systolic (follow Shock Protocol) <u>Bradycardia:</u> < 50/min (follow Cardiac Algorithm Bradycardia)</p> <p>Reverse Magnesium Sulfate Toxicity: 3.0 Gram slow IVP over 2 min. MD order <u>Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes.</u></p> <p>Suspected Hyperkalemia: 3.0 Gram slow IVP over 5 min.</p>
PEDIATRIC	<p>Suspected Hyperkalemia: 60 mg/kg slow IVP over 5 min. MD order</p>

CALCIUM GLUCONATE

09/10/2013

[PARAMEDIC]

KEY POINTS

1. Rapid administration can cause bradycardia or arrest, give slowly.
2. Some calcium channel blockers which may be taken in overdose include: diltiazem (Cardizem), felodipine (Plendil), nicardipine (Cardene), nifedipine (Adalat, Procardia), verapamil (Calan, Isoptin).
3. Calcium should not be used during resuscitation except for uses listed under indications.

CHARCOAL, ACTIVATED / ACTIDOSE® WITH SORBITOL 09/10/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Absorbs toxic substances ingested and inhibits gastrointestinal absorption by forming an effective barrier between remaining particulate material and the gastrointestinal mucosa.
INDICATIONS	Management of poisoning or overdose of many substances.
CONTRA-INDICATIONS	Patients who are unconscious or with altered mental status.
PRECAUTIONS	<ol style="list-style-type: none"> 1. Administration of activated charcoal can result in aspiration or significant particulate obstruction of the airway. 2. Always have suction on standby; patient should be monitored closely for decreasing level of consciousness and impending vomiting.
ADULT 	Poisoning / Overdose: MD order 1 gm/kg PO. Usual dose is 50 grams but dosage may be higher as directed.
PEDIATRIC 	Poisoning / Overdose: MD order 1 gm/kg PO

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COMPAZINE/PROCHLORPERAZINE	
09/10/2013	
[PARAMEDIC]	
ACTIONS	2 nd line anti-emetic.
INDICATIONS	Nausea and vomiting
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Known adverse reaction/allergy to phenothiazines (ie Compazine, Phenergan) 2. Depressed level of consciousness and/or presence of large amounts of CNS depressants. 3. Hypotension 4. Pregnancy
PRECAUTIONS	Elderly are more susceptible to hypotension and neuromuscular effects, therefore start with smaller dose (ie 5 mg)
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Extrapyrimal reactions-often can be effectively treated with Benadryl. 2. Hypotension 3. Neuroleptic malignant syndrome (rare and serious disorder characterized by muscle rigidity, fever, mental status changes and autonomic instability) 4. Seizure 5. Ventricular dysrhythmias (if present, treat with 50-100 mEq sodium bicarbonate; if ineffective, use lidocaine in ACLS doses) 6. Dry mouth 7. Blurred vision
ADULT	2nd Line Anti-Emetic: 5-10 mg IV over 2 minutes, or IM

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CYANIDE ANTIDOTE: CYANOKIT
09/10/2013

[PARAMEDIC]

ACTIONS	Hydroxocobalamin works by binding directly to the cyanide ions, creating cyanocobalamin, a natural form of vitamin B12, which is excreted in the urine.
INDICATIONS	<ol style="list-style-type: none"> 1. Suspect cyanide poisoning in any person exposed to smoke in a closed space, or any smoke inhalation victim with soot in mouth, altered mental status and low blood pressure. 2. Known chemical exposure to cyanide containing chemicals. 3. Symptoms include; <ul style="list-style-type: none"> • <u>Early symptoms</u> - headache, vertigo, confusion, drunken behavior, shortness of breath. • <u>Advanced symptoms</u> - N&V, chest tightness, generalized seizures, coma, dilation of pupils, cardiac arrhythmias, hypertension (early), hypotension (late), asystole, apnea, non-cardiac pulmonary edema.
PRECAUTIONS	A separate IV should be established for other medications to prevent precipitation.
SIDE EFFECTS	<p>Cyanokit's most common adverse reactions (>5%) are transient and include:</p> <ol style="list-style-type: none"> a. Chromaturia (red-colored urine) b. Erythema (skin redness) c. Rash d. Substantial increase in blood pressure e. Nausea f. Headache g. Injection site reactions

CYANIDE ANTIDOTE: CYANOKIT
09/10/2013

[PARAMEDIC]

PROCEDURE

1. Collect 4 ml of blood in each of two green top vacutainers. (These green top blood tubes are stored with the Cyanokits.) Write the following information on each green top tube: patient name: last, first and middle initial, date of birth, date and time collected, and initials of person collecting the specimen. Deliver the filled tubes with the patient to the receiving hospital.
2. The recommended diluent is 100 mL of 0.9% Sodium Chloride injection, although 100 mL of Lactated Ringers injection or 5% Dextrose injection (D5W) may also be used. Refer to the diagram on page 3 for steps in administering the medication.

2.5 g vials:

- Take two 2.5 g vials and add 100 mL of normal saline to each vial. Administer these two vials by IV infusion over 7.5 minutes per vial for a total infusion time of 15 minutes (approximately 15 mL/min).
- Rock or rotate vial for 30 seconds to mix solution. (Do not shake)

5 g vials:

- Add 200 mL of normal saline to the vial. Administer by IV infusion over 15 minutes.
- Rock or rotate vial for 30 seconds to mix solution. (Do not shake)

ADULT



Cyanide Poisoning: MD

The starting dose is 5 g IV infusion.

- Depending on the severity and the clinical response, a second dose of 5 g may be administered over an infusion rate of 15 minutes to 2 hours, based on patient's condition.
- Monitor B/P carefully, a significant rise may occur.

PEDIATRIC



Cyanide Poisoning: MD

70 mg/kg., up to a maximum of 5 g.
 Prepare dose as noted above.

Pediatric Cyanide Antidote Dosage Chart

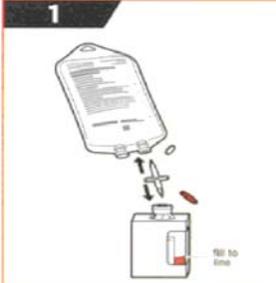
Weight in kg

5kg	8kg	10kg	12kg	15kg	20kg	25kg	30kg	35kg	40kg	45kg	50kg
14ml= 350mg	22ml= 550mg	28ml= 700mg	34ml= 850mg	42ml = 1050mg	56ml = 1400mg	70ml = 1750mg	84ml = 2100mg	98ml = 2450mg	112ml= 2800mg	126ml= 3150mg	140ml= 3500mg

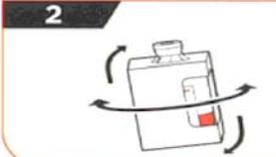
Dosages on chart calculated to provide 70 mg/kg when one or two 2.5 g vial are diluted with 100cc diluent added to each vial. At this concentration the correct dose is 2.8 mL/kg.

2.5 gram vials

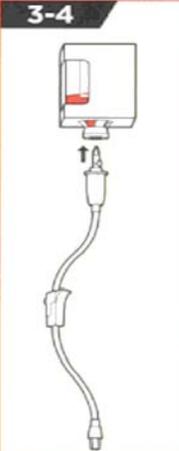
Easy to administer in 4 simple steps¹



1



2



3-4

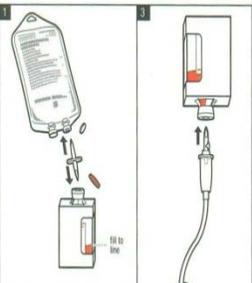
Starting Dose: 5 g (2 vials)

- 1. Reconstitute:** Add 100 mL of 0.9% Sodium Chloride Injection* to vial using transfer spike. **Fill to line. Vial in upright position**
- 2. Mix:** Rock or rotate vial for 30 seconds to mix solution. Do not shake
- 3. Infuse First Vial:** Use vented IV tubing to hang and infuse over 7.5 minutes
- 4. Infuse Second Vial (Repeat Steps 1 and 2 before second infusion):** Use vented IV tubing to hang and infuse over 7.5 minutes

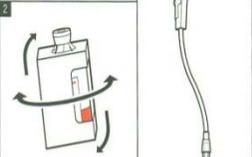
5 gram vials

For Intravenous Use

To be reconstituted with 200 mL of 0.9% Sodium Chloride Injection
Diluent Not Included



1



2

Complete Starting Dose: 5 grams

- 1. Reconstitute**
Place the vial in an upright position.
Add 200 mL of 0.9% Sodium Chloride Injection to the vial using the transfer spike. **Fill to the line.**
- 2. Mix**
The vial should be repeatedly inverted or rocked, not shaken, for at least **60 seconds** prior to infusion.
- 3. Infuse Vial**
Use vented intravenous tubing, hang and infuse over **15 minutes.**

One 5 g vial is a complete starting dose

See Package Insert for alternate diluents, incompatibilities with other drugs and full prescribing information.

For more information visit www.cyanokit.com
or call 1-800-776-3637
See reverse for additional information

Component # 658-2 NDC 11704-370-01

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MEDICAL TECHNOLOGIES[®]

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DEXTROSE 11/05/2013		[A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Carbohydrate which produces most of the body's quick energy and is used to raise blood sugar levels.	
INDICATIONS	<ol style="list-style-type: none"> 1. Unknown, unconscious patient 2. Symptomatic hypoglycemia with CBG<60 	
PRECAUTIONS	<ol style="list-style-type: none"> 1. If feasible, check blood glucose to confirm hypoglycemia prior to administration of dextrose. Certain neurological problems may be worsened with hyperglycemia. 2. Extravasation of dextrose will cause necrosis of tissue. IV should be secure and free return of blood into the syringe or tubing should be checked multiple times during administration. 	
ADULT	<p>Hypoglycemia, unconscious / unknown: 25 Grams IV/IO (50 ml of D-50%)</p> <p>Hypothermia with hypoglycemia: Mix 50 Grams in 1000 cc NS, administer 500 cc then reassess CBG.</p>	
PEDIATRIC 	Hypoglycemia, unconscious / unknown: (See Chart)	
KEY POINTS	<ol style="list-style-type: none"> 1. Effect is delayed in elderly people with poor circulation. 2. Dose may need to be repeated if patient does not improve and hypoglycemia is confirmed by repeat blood glucose. 3. If patient awake and able to protect airway give sugar solution orally (IV dextrose may be used for this purpose). 	

Pediatric Dextrose Mixing Ratio

	D50	D25	NS
D25% (12.5 gm/50 ml)	25 ml		25 ml
D12.5% (6.25 gm/50 ml)	12.5 ml		37.5 ml
		25 ml	25 ml
D10%	50 ml		200 ml
		50 ml	75 ml

Patient Size	Dextrose (Gms)	D10 (0.10 gm/ 1 ml) For any age	D12.5 (.125 gm/1 ml) Infants less than 1 month	D25 (.25 gm/1ml) 1 month to 1 year	D50 (.5 gm/1 ml) Older than 1 year
3 KG	1.5 Gms	15.0 ml	12.0 ml		
4 KG	2.0 Gms	20.0 ml	16.0 ml		
5 KG	2.5 Gms	25.0 ml	20.0 ml		
Pink (6-7 kg)	3.25 Gms	32.5 ml	26.0 ml	13.0 ml	
Red (8-9 kg)	4.25 Gms	42.5 ml		17 ml	
Purple (10-11 kg)	5.25 Gms	52.5 ml		21 ml	10.5 ml
Yellow (12-14 kg)	6.5 Gms	65.0 ml			13.0 ml
White (15-18 kg)	8.25 Gms	82.5 ml			16.5 ml
Blue (19-23 kg)	10.5 Gms	105.0 ml			21.0 ml
Orange (24-29 kg)	13.3 Gms	133.0 ml			26.6 ml
Green (30-36 kg)	16.5 Gms	165.0 ml			33.0 ml

DIAZEPAM / VALIUM®	
09/10/2013	
[PARAMEDIC]	
ACTIONS	Benzodiazepine with anticonvulsant, skeletal muscle relaxant, anxiety reducing, amnesic and sedative effects.
INDICATIONS	Diazepam is used to control seizures
CONTRA-INDICATIONS	Known allergy to diazepam.
PRECAUTIONS	Diazepam can cause respiratory depression, hypotension or sedation particularly in the elderly or in those with chronic disease or in the presence of other sedating agents including: alcohol, barbiturates, benzodiazepines or opiates.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Paradoxical excitement or agitation may occur. 2. Respiratory depression. 3. Hypotension.
ADULT	Seizures: 2-10 mg IVP, IM or IO every 3-5 minutes up to a maximum of 20 mg
PEDIATRIC 	Seizures: 0.1-0.3 mg/kg, IVP, IM or IO (maximum dose 5 mg) May repeat once.

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DILAUDID® / HYDROMORPHONE HYDROCHLORIDE**09/10/2013****[PARAMEDIC]**

ACTIONS	Narcotic analgesic, opiate type.
INDICATIONS	Analgesic for extreme pain
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Pediatric patients, labor, respiratory depression or when ventilatory function is depressed such as status asthmatics, COPD, emphysema. 2. Patients who are hypersensitive to dilaudid or other opiates; those with intracranial lesions associated with ICP. 3. Acute exacerbation of chronic pain is not an indication for dilaudid. 4. Hypotension.
PRECAUTIONS	Use with caution in elderly patients, and patients with chronic liver conditions.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. CNS: pupillary constriction, sedation, somnolence, clouded sensorium, dizziness. 2. CV: hypotension, bradycardia; 3. GI: nausea, vomiting. 4. RESP: respiratory depression, bronchospasm.
ADULT	<p>Pain Management:</p> <p>0.5 -1.0 mg slow (over 1-2 min) IVP. Repeat 0.5 mg dose every 30 min PRN pain relief, to max of 2.0 mg.</p> <p>For IM use: Initial dose 1.0 mg. Repeat 1.0 mg dose every 30 min PRN pain relief, to max of 2.0 mg.</p>
KEY POINTS	<ol style="list-style-type: none"> 1. IV administration should be done over 1-2 minutes. 2. 7-10 times more analgesic than morphine with a long duration of action.

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DILTIAZEM / CARDIZEM®	
09/10/2013	
[PARAMEDIC]	
ACTIONS	Calcium channel blocker that slows conduction and prolongs refractoriness in the AV node.
INDICATIONS	Control of symptomatic rapid ventricular rate (130 or greater) associated with atrial fibrillation and atrial flutter.
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Systolic blood pressure of less than 90 mmHg. 2. Sick sinus syndrome or AV block in the absence of a functioning pacemaker. 3. Wolff-Parkinson-White Syndrome. 4. Wide QRS tachycardia unless it is known with certainty to be supraventricular in origin. 5. Relative contraindication in patients with severe heart failure.
PRECAUTIONS	Use caution in patients receiving beta blockers due to the potential of synergistic effects.
SIDE EFFECTS	Nausea, vomiting, headache, dizziness, bradycardia, heart block, hypotension and asystole.
ADULT 	<p>Atrial fibrillation and atrial flutter with rapid ventricular rate: MD order 0.25 mg/kg IVP over 2 minutes, second bolus dose of 0.35 mg/kg IVP may be administered after 10-15 minutes, if the initial dose does not convert the rhythm or slow the rhythm to an acceptable rate.</p> <p>*May maintain an established diltiazem drip during inter-hospital transfer with a written MD Order</p>
KEY POINTS	<ol style="list-style-type: none"> 1. If the patient is exhibiting serious signs or symptoms of cardiac compromise, (i.e. SOB, chest pain, hypotension), cardioversion is the preferred method of conversion. 2. Bradycardia can occur if cardioversion is done immediately after administration of diltiazem.

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DIPHENHYDRAMINE HCL / BENADRYL® 09/09/2014 [EMT-I, PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Histamine blocker 2. Anticholinergic 3. Anti-Parkinsonism effect (to treat dystonic reactions)
INDICATIONS	<ol style="list-style-type: none"> 1. Anaphylaxis (after epi) 2. Allergic reactions 3. In conjunction with droperidol or geodon to prevent acute dystonic reactions 4. Acute dystonic reaction
PRECAUTIONS	<p>May cause hypotension when given IV.</p>
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Drowsiness, confusion, dizziness, blurred vision, confusion wheezing and thickening of bronchial secretions as well as tachycardia, palpitations, dry mouth, especially in elderly 2. May have additive effect with alcohol or other depressants.
ADULT	<p>Allergic reaction: 50 mg PO or slow IVP or deep IM.</p> <p>Extrapyramidal / dystonic reaction: 50 mg slow IVP or deep IM.</p> <p>Combative patients: <u>Threat to self or others:</u> 50 mg IV/IO/IM concomitantly with geodon or droperidol</p> <p><u>Agitated with no perceived threat:</u> 50 mg IV/IO/IM concomitantly with first dose of geodon or droperidol</p>
PEDIATRIC   	<p>Allergic reaction: 1 mg/kg slow IVP or IM, max 50 mg</p> <p>Extrapyramidal / dystonic reaction: contact MD if possible 1 mg/kg slow IVP or IM, max 50 mg</p> <p>Combative patients: contact MD if possible 1 mg/kg slow IVP or IM, max 50 mg</p>

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DOPAMINE / INTROPIN®	
09/10/2013	
[PARAMEDIC]	
ACTIONS	Alpha effects cause peripheral vasoconstriction and increased blood pressure. Beta effects cause increased cardiac output.
INDICATIONS	Shock that is not hypovolemic in origin and has not responded to an IV fluid bolus.
CONTRA-INDICATIONS	Hypovolemic Shock.
PRECAUTIONS	<ol style="list-style-type: none"> 1. May induce tachycardia, in this case infusion should be decreased or stopped. 2. High doses may cause extreme peripheral vasoconstriction. 3. Should not be added to sodium bicarbonate or other alkaline solutions since dopamine will be inactivated in alkaline solutions.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Ectopic beats, nausea, and vomiting. 2. Angina has been reported following treatment.
ADULT 	Hypotension: MD order 1600 mcg/ml (400 mg in 250 ml normal saline) IV infusion with <u>microdrip chamber only</u> . Infusion rate should start at 10 mcg/kg/min. Adjust rate to achieve desired effect (usual range 10-20 mcg/kg/min.)
PEDIATRIC 	Hypotension: MD order Infusion at 10-20 mcg/kg/min as described above.
KEY POINTS	<ol style="list-style-type: none"> 1. Can precipitate hypertensive crisis in susceptible individuals. 2. Consider hypovolemia, and treat with appropriate fluids before administration of dopamine.

<p align="center">This chart is for double strength Dopamine (1600/mcg/ml) DOSAGE (mcg/kg/min) For patients over 100 kg, dosage will be based on “lean body weight”. Physicians should make this calculation when the medic calls in for the drug order.</p>																					
Patient's Body Weight (kg)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	35	1	3	4	5	7	8	9	11	12	13	14	16	17	18	20	21	22	24	25	26
	40	2	3	5	6	8	9	11	12	14	15	17	18	20	21	23	24	26	27	29	30
	45	2	3	5	7	8	10	12	14	15	17	19	20	22	24	25	27	29	30	32	34
	50	2	4	6	8	9	11	13	15	17	19	21	23	24	26	28	30	32	34	36	38
	55	2	4	6	8	10	12	14	17	19	21	23	25	27	29	31	33	35	37	39	41
	60	2	5	7	9	11	14	16	18	20	23	25	27	29	32	34	36	38	41	43	45
	65	2	5	7	10	12	15	17	20	22	24	27	29	32	34	37	39	41	44	46	49
	70	3	5	8	11	13	16	18	21	24	26	29	32	34	37	39	42	45	47	50	53
	75	3	6	8	11	14	17	20	23	25	28	31	34	37	39	42	45	48	51	53	56
	80	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
	85	3	6	10	13	16	19	22	26	29	32	35	38	41	45	48	51	54	57	61	64
	90	3	7	10	14	17	20	24	27	30	34	37	41	44	47	51	54	57	61	64	68
95	4	7	11	14	18	21	25	29	32	36	39	43	46	50	53	57	61	64	68	71	
100	4	8	11	15	19	23	26	30	34	38	41	45	49	53	56	60	64	68	71	75	
Drip Rate (gtts/min. for 60 gtt set)																					

DROPERIDOL / INAPSINE®	
05/06/2014	
[PARAMEDIC]	
ACTIONS	Potent neuroleptic (tranquilizer) agent and anti-emetic
INDICATIONS	<ol style="list-style-type: none"> 1. Sedation of combative patient to facilitate restraint. 2. Second line anti-emetic for nausea and vomiting.
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Coronary artery disease 2. Cardiac medications 3. Liver or kidney disease 4. Use of tricyclic antidepressants 5. <2 Years of age.
PRECAUTIONS	<ol style="list-style-type: none"> 1. Hypotension may occur with the use of droperidol. Fluids and other measures should be readily available. 2. Droperidol should be used with caution in those patients with identified risks for baseline prolongation of the QT interval.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Extrapyramidal reaction (similar to phenothiazine reaction) 2. Hypotension, tachycardia.
ADULT <55	<p>Chemical Restraint:</p> <p><u>Threat to self or others:</u> 2.5 – 5mg IV/IO or 5-10mg IM concomitantly with midazolam and diphenhydramine</p> <p><u>Agitated with no perceived threat:</u> 2.5 mg IV/IO or 5 mg IM given concomitantly with diphenhydramine.</p> <p>Acute Nausea: 0.625mg up to 1.25mg IV second line after ondansetron w/o benadryl for refractory nausea/vomiting.</p>
ADULT >55 	Adults over age 55 w/o other contraindications, by MD order
PEDIATRIC  	Chemical Restraint: MD order 0.1 - 0.15mg/kg IM (max dose 5.0 mg)

DROPERIDOL / INAPSINE®

05/06/2014

[PARAMEDIC]

KEY POINTS

1. Droperidol may have additive or potentiating effects with other CNS depressants and the dosage should be reduced.
2. Onset of action of a single IV or IM dose is from 3-10 minutes following administration. Peak effects occur in 30 minutes and effects can last up to 2-4 hours.

EPINEPHRINE 09/10/2013 [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Increased heart rate, myocardial contractile force, systemic vascular resistance, arterial blood pressure. 2. Potent bronchodilator.
INDICATIONS	<ol style="list-style-type: none"> 1. Cardiac arrest. 2. Systemic allergic reactions/anaphylaxis. 3. Asthma and other forms of reactive airway disease. 4. Treatment of bradycardia with pulse in pediatric resuscitation. 5. Croup
PRECAUTIONS	<ol style="list-style-type: none"> 1. Must be used very cautiously in patients with hypertension, hyperthyroid-ism, ischemic heart disease, or cerebrovascular insufficiency. 2. Should not be added directly to bicarbonate infusion
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Anxiety, tremor, palpitations, tachycardia, headache, and hypertension. 2. At IM injection site, a temporary area of blanching may occur. 3. With nebulized administration, perioral pallor or blanching may be noted and requires no treatment.
ADULT	<p>Cardiac Arrest: 1.0 mg (10 ml of 1:10,000 solution) IVP every 3-5 min during arrest (ET 2.0 mg per dose). <i>EMT-I, P Only</i></p> <p>Allergic Reaction/Anaphylaxis: 0.3 mg (0.3 ml of 1:1,000) IM <i>EMT, AEMT, EMT-I, Paramedic</i></p> <p>For cardiovascular collapse: 0.3mg of 1:10,000 (3ml of 1:10,000) slow IVP, Paramedic Only Epi Auto Injection Device 0.3mg <i>EMR, EMT, AEMT, EMT-I, Paramedic</i></p> <p>Asthma/Reactive Airway Disease: 0.3 mg (0.3 ml of 1:1,000 solution) IM. Paramedic Only Standing order if < age 40 and no cardiac disease, otherwise MD order</p>



ETOMIDATE / AMIDATE®	
09/10/2013	
[PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Sedative hypnotic 2. Onset 20-30 seconds, duration 7-10 minutes
INDICATIONS	For induction of unconsciousness in rapid sequence intubations.
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	Has no analgesic property.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Can cause myoclonus (muscle jerking/twitching). 2. Can cause pain at injection site. 3. Can cause nausea/vomiting/hiccups.
ADULT	RSI induction: 0.3 mg/kg IV/IO (usual dose 20 mg).
PEDIATRIC 	RSI induction: 0.3 mg/kg IV/IO.
KEY POINTS	Administer immediately before succinylcholine.

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FENTANYL / SUBLIMAZE**04/01/2014****[EMT-I, PARAMEDIC]**

ACTIONS	Narcotic analgesic
INDICATIONS	<ol style="list-style-type: none"> 1. Pain Management 2. RSI pretreatment for head injury/increased ICP 3. Post RSI sedation 4. Treatment of shivering –See Induced Hypothermia protocol.
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	<ol style="list-style-type: none"> 1. Respiratory depression, peak depression occurs 5-15 min. after IV dose, continuous pulse oximetry required. 2. Respiratory depressive effects enhanced by simultaneous benzodiazepine administration (e.g., Versed). 3. In large doses and with rapid administration, may cause muscle rigidity, particularly respiratory muscles (rare); in emergency, can be overcome by neuromuscular blockade (e.g., Succinylcholine) not by Narcan.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. May cause nausea/vomiting. 2. Will cause pupillary constriction.

FENTANYL / SUBLIMAZE

04/01/2014

[EMT-I, PARAMEDIC]

ADULT



Pain management: *(EMT-I, Paramedic)*

50-100 mcg slow IV/IO/IM initial dose. May repeat 50 mcg every 5 minutes up to the maximum dose of 300 mcg.

- Start with 25-50 mcg in elderly /debilitated.

Intra-nasal:

Age ≥ 8 y.o 2mcg/kg. Max of 100mcg. Repeat only by **MD Order**.

Pretreatment for RSI if suspected head injury/suspected increased ICP: *(Paramedic Only)*

3 mcg/kg IV/IO.

- Administer over 30-60 seconds immediately before RSI

Sedation post RSI: *(Paramedic Only)*

3 mcg/kg IV/IO

Induced Hypothermia Post Resuscitation: *(Paramedic Only)*

3 mcg/kg IV/IO

- May repeat in 20 minutes if needed to treat shivering.
- If unsuccessful consider rocuronium 1 mg/kg **MD order**



PEDIATRIC



Pain management:

1 mcg/kg, slow IV/IO/IM initial dose. May repeat every 5 minutes up to the maximum of 3 doses then **contact MD**. *(EMT-I, Paramedic)*

Intra-nasal:

Age ≤8 yrs: 2 mcg/kg. Max of 100mcg. Repeat only by **MD Order**.



Sedation / pretreatment for RSI in suspected head injury or suspected increased ICP: *(Paramedic Only)*

3 mcg/kg IV/IO

GEODON/ZIPRASIDONE 09/09/2014 [PARAMEDIC]	
ACTIONS	Antipsychotic 1. The mechanism of action of geodon is unknown. However, it is thought to be through blocking of dopamine and serotonin receptors producing sedation and tranquilization. 2. Onset of action of a single IM dose is from 15 to 30 minutes and duration of action is 2-4 hours. The peak effect may not be apparent for up to 2 hours.
INDICATIONS	Sedation of combative patient to facilitate restraint.
CONTRA-INDICATIONS	Known Allergy
PRECAUTIONS	1. May cause hypotension. Treat shock per protocol when feasible. 2. Use caution when administering geodon to patients who have taken other CNS depressant drugs (e.g. sedative-hypnotics, alcohol). In these cases consider reducing the dose to 10 mg IM and repeat if necessary. 3. May induce Torsades de Pointes. Monitor ECG and Q-T interval following use, if feasible. 4. Use with caution in patients with a seizure disorder or condition that causes seizures.
SIDE EFFECTS	1. Somnolence, dizziness, headache, nausea have occurred following administration. <ul style="list-style-type: none"> • These are not life threatening and generally do not require treatment.
ADULT	Chemical Restraint: <u>Threat to self or others:</u> 10-20 mg geodon (IM Only) concomitantly with diphenhydramine and midazolam <u>Agitated with no perceived threat:</u> 10-20 mg IM concomitantly with diphenhydramine after midazolam administration
PEDIATRIC	MD Contact Required 

GEODON/ZIPRASIDONE

09/09/2014

[PARAMEDIC]

KEY POINTS

Reconstitution: Add Sterile Water for Injection 1.2 mL and shake vigorously until completely dissolved.

1 mL = 20mg of ziprasidone

GLUCAGON 09/10/2013		[A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Hormone which causes glucose mobilization in the body 2. Positive inotropic and chronotropic effect on heart (sometimes used in treatment of beta blocker and calcium channel blocker overdose).	
INDICATIONS	1. Symptomatic hypoglycemia when dextrose solution can not be immediately administered. 2. Symptomatic beta blocker overdose 3. Symptomatic calcium channel blocker overdose unresponsive to IV calcium.	
SIDE EFFECTS	Nausea and vomiting may occur.	
ADULT 	Hypoglycemic Emergency: 1 mg IM Beta blocker or calcium channel blocker OD: by MD order <i>(Paramedic only)</i> 2-10 mg IV	
PEDIATRIC  	Hypoglycemic Emergency: 0.1 mg/kg to a maximum of 1 mg IM or SQ MD order to repeat. <ul style="list-style-type: none"> Maximum 1.0 mg every 30 minutes. Beta Blocker or calcium channel blocker OD: by MD order <i>(Paramedic only)</i> 0.1mg/kg to a maximum of 1 mg IM or SQ. MD order to repeat.	
KEY POINTS	1. Neonates/pediatric patients/alcoholics or malnourished patients may not be able to mobilize any glucose in response to Glucagon. 2. Return to consciousness should be within 20 minutes of IM dose if patient is hypoglycemic.	

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GLUCOSE, ORAL 12/12/2013 [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Restores blood sugar level to normal in some states of hypoglycemia.
INDICATIONS	Suspected hypoglycemia patient who can swallow.
CONTRA-INDICATIONS	Diminished level of consciousness resulting in the patient's inability to protect their airway.
ADULT	Hypoglycemia: Squeeze entire contents of tube (15GM glucose) into mouth and have the patient swallow. May repeat dose if no effect within 15 minutes.

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KETAMINE 10/8/2015 [PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Dissociative anesthetic with minimal depression on respiration or blood pressure.
INDICATIONS	<ol style="list-style-type: none"> 1. First line RSI induction agent for: hypotension, severe respiratory disease process, and pediatrics. 2. Chemical Restraint.
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Hypersensitivity to Ketamine. 2. Suspected elevated ICP (Cushing's triad, focal findings such as blown pupil, etc.) 3. Acute globe injury 4. Known pregnancy
SIDE EFFECTS & PRECAUTIONS	<ol style="list-style-type: none"> 1. May cause laryngospasm, which may often be controlled with BVM ventilation and time. May require advanced airway management. 2. Increased blood pressure due to catecholamine release. 3. May cause hyper-salivation, which can usually be controlled with suction. 4. Emergence reaction, nightmares and frightening dreams, can occur in 5-30% of patients as the medication wears off. 5. Duration of action is 10-20 minutes. Continued sedation with midazolam must be provided before the induction agent has worn off.
ADULT and PEDIATRIC 	RSI induction and Chemical Restraint: <ul style="list-style-type: none"> • 2 mg/kg IV or IO, slow IV push. Max 300mg. Onset 30 sec, duration 5-10 minutes. • 4 mg/kg IM. Max 500mg. Onset 3-4 min, duration 12-25 minutes.
KEY POINTS	<ol style="list-style-type: none"> 1. Administer immediately before paralytic for RSI. 2. Must receive midazolam post intubation if Ketamine administered.

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LIDOCAINE / XYLOCAINE®	
09/10/2013 [EMT-I, PARAMEDIC]	
INDICATIONS	<ol style="list-style-type: none"> 1. Premedication during RSI for patients at risk of increased intracranial pressure. 2. Anesthetic for EZ IO infusion.
SIDE EFFECTS	Lidocaine toxicity symptoms include: drowsiness, disorientation, decreased hearing, paresthesia, muscle twitching, and agitation.
ADULT	<p>RSI, Suspected Increased Intracranial Pressure: 1.5 mg/kg IVP</p> <p>EZ IO Infusion 20-40 mg slowly prior to saline flush.</p>
PEDIATRIC 	<p>RSI, Suspected Increased Intracranial Pressure: 1.5 mg/kg IVP</p> <p>EZ IO Infusion 0.5 mg/kg slowly prior to saline flush.</p>
KEY POINTS	<ol style="list-style-type: none"> 1. For RSI lidocaine should be given approx 3 minutes before induction. 2. Can cause focal or grand mal seizures, increased heart block, decreased myocardial contractility, and rarely cardiovascular collapse.

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MAGNESIUM SULFATE 10% 09/10/2013 [PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Affects impulse formation and conduction time in myocardium and thereby reduces incidence of dysrhythmias associated with hypomagnesemia or prolonged QT interval. 2. Decreases acetylcholine in motor end terminals which produces anticonvulsant properties.
INDICATIONS	<ol style="list-style-type: none"> 1. First line antiarrhythmic for torsades de pointes pattern in V-fib/pulseless VT. 2. Treatment and prevention of seizures due to pregnancy (Eclampsia).
PRECAUTIONS	<ol style="list-style-type: none"> 1. Since magnesium sulfate affects neuromuscular transmission in body it must be given carefully and monitored closely in the patient with a pulse. 2. Early warning that magnesium toxicity is developing is decrease in reflexes measured at patella, antecubital area or heel.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. In non-arrest patient, magnesium toxicity may cause hypotension, bradycardia and/or respiratory arrest. 2. Increased sweating, flushing and sensation of body warmth.
ADULT  	<p>Pulseless Arrest V-fib / V-Tach: 1 – 2 Grams IVP over 1 minute.</p> <p>Preeclampsia or Eclampsia: MD order 2 – 4 Grams Slow IVP over 1 minute per gram.</p> <p>Maintenance Drip: MD order 0.5 - 4.0 Grams per hour.</p>
PEDIATRIC 	<p>Pulseless Arrest V-fib/V-Tach: 25mg/kg IV/IO rapid infusion, max dose 2 grams.</p>

MAGNESIUM SULFATE 10%
09/10/2013

[PARAMEDIC]

KEY POINTS

1. Pre-hospital use for preeclampsia or eclampsia is usually on interhospital transfers.
2. Patient status must be monitored closely. Decreased reflexes, hypotension or respiratory rate <12/minute are reasons to stop drug.
3. Antidote for Magnesium toxicity is Calcium Gluconate or Calcium Chloride.
4. Patients who are at risk to develop torsades include:
 - a. Toxic level of certain antidysrhythmics including procainamide (Pronestyl) and quinidine.
 - b. Electrolyte disorders including hypokalemia, hypomagnesemia, hypocalcemia.
 - c. Hypothyroidism.
 - d. Coronary artery disease including AMI, left ventricular failure.
 - e. Pacemaker malfunction, tricyclic antidepressants, and some phenothiazines.

MIDAZOLAM /VERSED®
12/01/2015

[PARAMEDIC]

ACTIONS	CNS depressant with amnesic effect.
INDICATIONS	<ol style="list-style-type: none"> 1. Active seizure activity, status epilepticus. 2. For amnesic effect during uncomfortable external pacing. 3. Sedation of an awake patient prior to cardioversion. 4. Sedation after Rapid Sequence Intubation (RSI). 5. Chemical restraint of combative patient. 6. Acute alcohol withdrawal
PRECAUTIONS	<ol style="list-style-type: none"> 1. Can cause marked respiratory depression. 2. Use with caution in patients who have ingested alcohol or other depressant medications. 3. Use with caution in patients that are hypotensive.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Respiratory depression. 2. Fluctuations in vital signs, nausea, vomiting, ventricular ectopy, arrhythmias, and bronchospasm. 3. Excitement or stimulation may occur and may be manifested as agitation, involuntary movements, hyperactivity or combativeness.
ADULT	<p>Generalized Seizures/Status Seizures: 2-4 mg IVP/IO/IM/IN</p> <ul style="list-style-type: none"> • Repeat 2 mg. IV in 1-2 min as needed x 1 • Additional doses if seizure activity continues. MD order <p>Sedation for Cardioversion or Pacing: 2-4 mg IVP over 1-2 minutes.</p> <ul style="list-style-type: none"> • Repeat 2 mg. IV in 1-2 min as needed x 1 • Additional doses by MD order <p>Post RSI Sedation: 0.1mg/kg IV/IO to a Max dose of 6 mg.</p> <p>Chemical Restraint: <u>Threat to self or others (after ketamine):</u> 2.5 - 5 mg IV/IO or 5mg IM Repeat after 5 minutes as needed x 1</p> <p><u>Agitated with no perceived threat:</u> 2.5 mg IV/IO or 5 mg IM Repeat after 10 minutes as needed x 1.</p>

MIDAZOLAM /VERSED® 12/01/2015 [PARAMEDIC]	
	<p>Acute Alcohol Withdrawal: 1-2mg IVP/IM depending on severity if symptoms</p> <ul style="list-style-type: none"> • Additional doses by MD order
<p>PEDIATRIC</p>  	<p>Generalized Seizures/Status Seizures: 0.1 mg/kg up to 2 mg IV / IM / IN / IO</p> <ul style="list-style-type: none"> • Repeat in 1 min for continued seizure activity. • Additional doses if seizure activity continues. MD order <p>Post RSI Sedation: 0.1 mg/kg up to 2 mg IV/IO</p>
<p>KEY POINTS</p>	<ol style="list-style-type: none"> 1. Dosage should be reduced in elderly or debilitated patients. 2. Most likely to produce respiratory depression in elderly or young patients and in patients who have taken other depressant drugs, especially alcohol and barbiturates.

MORPHINE 12/03/2013		[EMT-I, PARAMEDIC]
ACTIONS	Narcotic analgesic	
INDICATIONS	Management of acute pain	
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Known allergy 2. Hypotension 	
SIDE EFFECTS	<ol style="list-style-type: none"> 1. May cause vomiting; administer slowly 2. Respiratory depression 3. Vasodilation/hypotension 4. Pupil constriction 	
SIDE EFFECTS	<ol style="list-style-type: none"> 1. May cause nausea/vomiting. 2. Will cause pupillary constriction. 	
ADULT	<p>Acute Pain management: (<i>EMT-I, Paramedic</i>) 0.1 mg/kg IV/IM/IO starting dose typically 5 mg May repeat every 5-10 minutes up to 20 mg IV or IM without MD consultation</p>	
PEDIATRIC 	<p>Acute Pain management: 0.1-0.2 mg/kg IV/IM/IO</p>	
KEY POINTS	<ol style="list-style-type: none"> 1. Side effects are more pronounced in elderly patients. 2. Give slowly and have BVM and naloxone available. 3. Preferentially, use fentanyl for patients with abdominal pain. 	

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NALOXONE HCL / NARCAN®**06/09/2016****[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]**

ACTIONS	Opiate antagonist
INDICATIONS	<ol style="list-style-type: none"> 1. Reversal of opiate effect, particularly respiratory depression. 2. Used diagnostically in Unconscious/Unknown Protocol
PRECAUTIONS	<ol style="list-style-type: none"> 1. In patients physically dependent on opiates, frank and occasionally violent withdrawal symptoms may be precipitated, titrate to reversal of respiratory depression. 2. Be prepared to restrain the patient.
SIDE EFFECTS	May result in nausea, vomiting, sweating, tachycardia, increased BP, tremulousness or dysrhythmias and rarely flash pulmonary edema.
ADULT	<p>Unconscious/ Unknown: 0.5 mg IV, IM, IN, SQ, IO</p> <ul style="list-style-type: none"> • If no response is observed, may give an additional 1.5 mg in 1- 2 min up to 2mg max. <p>Call for repeat dose. 1.0 mg IV, IM, IN, SQ</p> <ul style="list-style-type: none"> • If no response is observed, may be repeated in 5 minute intervals up to 2mg max. <p>Altered LOC - with suspected opiate OD: 0.5 mg IV, IM, IN, SQ, IO</p> <ul style="list-style-type: none"> • If no response is observed, may give an additional 1.5 mg in 1- 2 min. • May repeat in 2mg increments as necessary.
PEDIATRIC 	<p>Opiate OD, Unconscious/Unknown: 0.1 mg/kg IV, IM, IN, SQ, IO bolus every 1-2 minutes PRN (max 2.0 mg)</p>

NALOXONE HCL / NARCAN®

06/09/2016

[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]

KEY POINTS

1. Overall time difference between IV and other routes is negligible.
2. The duration of some opiates (methadone, MS Contin®, Oxycontin®, and fentanyl patches) is longer than naloxone's half-life. Repeated doses of naloxone may be required.
3. With an advanced airway in place and assisted ventilation, opiate overdose patients may be safely managed without naloxone.

NITROGLYCERIN 02/03/2015 [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Dilation of coronary arteries. 2. Reduced venous tone and decreased peripheral resistance. 3. Generalized smooth muscle relaxation.
INDICATIONS	<ol style="list-style-type: none"> 1. Angina. 2. Chest, arm, or neck pain thought possibly to be related to coronary ischemia 3. Pulmonary edema. 4. Food impaction located in the esophagus.
CONTRA-INDICATIONS	Systolic BP < 90 mmHg.
PRECAUTIONS	<ol style="list-style-type: none"> 1. Generalized vasodilatation may cause reflex tachycardia. 2. Erectile dysfunction drugs within 24 hours. MD order 3. Use with caution with inferior MI, may cause severe hypotension.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Headache, flushing, dizziness, and burning under the tongue. 2. Hypotension, particularly orthostatic.
ADULT	<p>Angina Pectoris, MI, Pulmonary Edema: Tablet or Spray 0.4 mg SL spray or tablet; may repeat after 5 min x 2 (total of 3) AEMT, EMT-I, Paramedic</p> <ul style="list-style-type: none"> • >3 doses: MD order • Nitro drip start at 20mcg/min and titrate to effect or dose per transfer orders. Decrease rate if hypotension develops. <p>EMT Assist the patient to self-administer their own nitroglycerin up to 3 doses</p> <p>Esophageal Food Impaction: 0.4 mg SL spray or tablet, may repeat by MD order</p>

NITROGLYCERIN

02/03/2015

[EMT, A-EMT, EMT-I, PARAMEDIC]

Nitroglycerin drip chart 25 mg/ 250 ml

Mcg / min	ML / hr
5	3
10	6
15	9
20	12
25	15
30	18
35	21
40	24
45	27
50	30
55	33
60	36
65	39
70	42
75	45
80	48
85	51
90	54

ONDANSETRON / ZOFTRAN®**09/09/2014****[EMT-I, PARAMEDIC]**

ACTIONS	Antiemetic
INDICATIONS	Prevention and control of nausea and vomiting.
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Known allergy 2. Patient is <one month of age
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Possible QT prolongation. 2. Headache, localized redness at injection site, dizziness/lightheadedness, drowsiness, and hypoxia can occur rarely.
ADULT	<p>Acute Nausea: 4 mg PO/IM or slow IVP (over 1-2 min.) May repeat once in 5 min prn. Max total dose 8mg.</p>
PEDIATRIC 	<p>Acute Nausea: For children age 4-11, 4 mg tab may be given PO.</p> <p>For IM, administer 0.1 mg/kg up to 4 mg.</p> <p>For IV, administer 0.1 mg/kg up to 4mg slow IVP (over 1-2 min.)</p>

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OXYTOCIN / PITOCIN®**09/10/2013****[PARAMEDIC]**

ACTIONS	Increases electrical and contractile activity in uterine smooth muscle.
INDICATIONS	Control of postpartum hemorrhage.
PRECAUTIONS	<ol style="list-style-type: none"> 1. Prior to its administration, the presence of a second fetus must be considered. Administration with fetus in uterus can cause rupture of uterus and/or death of fetus. 2. Administration should follow delivery of placenta whenever possible.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. May cause transient but marked vasodilation and reflex tachycardia. 2. Cardiac arrhythmias, hypertension, and uterine tetany may be precipitated or aggravated by oxytocin.
ADULT 	Postpartum Hemorrhage: MD order 10-20 units added to 1000 ml NS, IV Infusion <ul style="list-style-type: none"> • Use standard tubing and titrate to severity of hemorrhage and uterine response. • Rarely 10 units (1 ml) IM only if unable to start IV.

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PRALIDOXIME CHLORIDE / PROTOPAM, (2-PAM IN MARK 1 KIT) 09/10/2013 [PARAMEDIC]	
ACTIONS	<ol style="list-style-type: none"> 1. Reactivate cholinesterase which has been inactivated by an organophosphate pesticide or related compound. 2. The drug's most critical effect is in relieving paralysis of respiratory muscles. (<u>Atropine must always be administered concurrently to block the effect of acetylcholine</u>)
INDICATIONS	<p>Antidote for poisoning due to organophosphates or nerve gas.</p> <ol style="list-style-type: none"> a. <u>Mild symptoms</u> - headache, nausea/vomiting, abdominal cramps, diarrhea. b. <u>Moderate symptoms</u> - generalized muscle weakness and twitching, slurred speech, pinpoint pupils, excessive secretions and shortness of breath. c. <u>Severe symptoms</u> - seizures, skeletal-muscle paralysis, respiratory failure and coma.
PRECAUTIONS	Pralidoxime is a relatively short acting drug, repeat dosing may be necessary.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Dizziness, blurred vision, diplopia, headache, drowsiness, nausea, tachycardia and muscle weakness. 2. Rapid IV injection may cause tachycardia, laryngospasm, muscle rigidity and transient neuromuscular blockade. 3. Administration should be done slowly and preferably by infusion.
ADULT	<p>Organophosphate / Nerve Gas exposure: <u>Moderate symptoms</u> - 2 Autoinjectors or (1200 mg) <u>Severe Symptoms</u> - 3 Autoinjectors or (1800 mg)</p>
PEDIATRIC 	<p>Organophosphate / Nerve Gas exposure: MD order 25 to 50 mg/kg given slowly IVP (no more than 0.1 cc/min)</p>
KEY POINTS	<ol style="list-style-type: none"> 1. IM injection: Use Mark 1 Autoinjectors. Hold in place for 10 seconds when injecting. Lateral thigh or upper outer buttock. 2. IV infusion: Reconstitute 1 g powder vial with 20 ml of sterile water for injection. When administering 2-PAM IV, administer for adults at a rate < 200 mg/min (< 4 cc/min.) For children < 4 mg/min (<0.1 cc/min) SLOW IV ADMINISTRATION.

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PROMETHAZINE THEOCLATE/ PHENERGAN® 09/10/2013 [PARAMEDIC]	
ACTIONS	Antiemetic
INDICATIONS	Nausea/Vomiting
SIDE EFFECTS	Sedation, confusion, sleepiness, dizziness, disorientation, drowsiness, blurred vision, N&V, dry mouth
ADULT 	2nd Line Antiemetic: <ul style="list-style-type: none"> • 25 mg IM • IV, Mix 12.5 mg into 100 ml NS and run wide open. • Repeat dose by MD order
PEDIATRIC 	Absolutely contraindicated in children < 2 y.o Children older than 2 y.o by MD order
KEY POINTS	When given IV, may cause severe irritation to the vein.

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PROPARACAINE HCL / ALCAINE® 09/10/2013 [PARAMEDIC]	
ACTIONS	Topical ophthalmic anesthetic
INDICATIONS	<ol style="list-style-type: none"> 1. To provide anesthesia prior to placement of the Morgan Therapeutic Lens®. 2. Acute eye pain due to burn, abrasion or foreign body.
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Ruptured globe. 2. Allergy to proparacaine.
PRECAUTIONS	Warn patient not to rub or touch the eye while it is anesthetized, since this may cause corneal abrasion and greater discomfort when the anesthesia wears off.
SIDE EFFECTS	Transient stinging, burning, and conjunctive redness may occur.
ADULT	Anesthesia: 1 – 2 drops in the effected eye(s). May repeat if needed.
PEDIATRIC 	Anesthesia: 1 – 2 drops in the effected eye(s). May repeat if needed.
KEY POINTS	Bottle should be considered for single patient use only.

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ROCURONIUM / ZEMURON®	
12/12/2013	
[PARAMEDIC]	
ACTIONS	Non-depolarizing paralytic
INDICATIONS	<ol style="list-style-type: none"> 1. Maintenance of paralysis of an intubated patient. 2. First line paralytic drug to be administered in dialysis patients, patient with a wide QRS (> 0.12 seconds), or any other time succinylcholine is contraindicated. 3. Shivering associated with induced hypothermia.
CONTRA-INDICATIONS	<p>Known allergy to rocuronium.</p> <p>Children < 1 year.</p>
ADULT	<p>Paralytic for dialysis pt. and/or pt. w/ wide QRS:</p> <p>1 mg/kg IV or IO</p> <ul style="list-style-type: none"> • <u>Maintenance dose:</u> 0.1-0.2 mg/kg IV/IO bolus as paralysis wears off, if sedation with midazolam and fentanyl is not adequate. <p>Maintain Paralysis / Induced Hypothermia: MD order see dosing as above</p>
PEDIATRIC	<p>Paralytic: MD order</p> <p>1 mg/kg IV or IO for paralysis.</p> <ul style="list-style-type: none"> • <u>Maintenance dose:</u> 0.1-0.2 mg/kg IV or IO bolus every 30 minutes if sedation with midazolam and fentanyl is not adequate.
KEY POINTS	<ol style="list-style-type: none"> 1. Has no effect on consciousness or pain threshold. 2. Administration of succinylcholine may prolong effect. 3. Pediatric patients may require larger doses of rocuronium, when calculated on a weight basis.

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SODIUM BICARBONATE

12/11/2013

[PARAMEDIC]

ACTIONS	<ol style="list-style-type: none"> 1. Acid buffer 2. Decreases circulating potassium level in the blood
INDICATIONS	<ol style="list-style-type: none"> 1. Cardiac arrest or dysrhythmias due to hyperkalemia. <ol style="list-style-type: none"> a) Dialysis patient b) Suspected metabolic acidosis (i.e. DKA, sepsis) c) Suspected acute renal failure d) Prolonged cardio-respiratory arrest 2. Tricyclic antidepressant overdose (e.g. tachycardia/QRS widening). 3. Suspected acidosis associated with crush injury - prolonged entrapment of torso, pelvis, or lower extremities >1 hour.
PRECAUTIONS	Should not be given in mixture with epinephrine, norepinephrine, dopamine, or calcium.
ADULT	<p>Cardiac arrest: 1 mEq/kg or 50 mEq (50 ml) IVP</p> <ul style="list-style-type: none"> • VF/Pulseless VT give after 1 shock & first vasopressor • Asystole/PEA give after first dose of vasopressor <p>Dysrhythmias due to hyperkalemia or ECG changes in tricyclic antidepressant OD (including sinus tachycardia with widening QRS): 1 mEq/kg or 50 mEq (50 ml) IVP</p> <p>Crush Injury: 50 mEq IVP</p> <ul style="list-style-type: none"> • Administer immediately prior to release of entrapped body part. • Give additional 50 mEq for each hour of entrapment to a maximum of 150 mEq (adult)

SODIUM BICARBONATE

12/11/2013

[PARAMEDIC]

PEDIATRIC



When administered to pediatric patients <1 year of age, should be diluted 1:1 with NS.

Cardiac arrest:

1 mEq/kg IVP

- VF/Pulseless VT give after 1 shock & first vasopressor
- Asystole/PEA give after first dose of vasopressor

Dysrhythmias due to hyperkalemia or ECG changes in tricyclic antidepressant OD (including sinus tachycardia with widening QRS): MD order

1 mEq/kg IVP

Crush Injury: MD order

1 mEq/kg IVP

- Administer immediately prior to release of entrapped body part. Give additional 1mEq/kg max of 50 mEq for each hour of entrapment to a maximum of 150 mEq (adult)

SOLU-MEDROL /METHYLPREDNISOLONE**02/03/2015****[PARAMEDIC]**

ACTIONS	Steroid used as an anti-inflammatory drug.
INDICATIONS	<ol style="list-style-type: none"> 1. Severe respiratory distress due to suspected asthma/COPD 2. Allergic reaction/anaphylaxis 3. Acute Adrenal Insufficiency
CONTRA-INDICATIONS	Allergy to steroids
PRECAUTIONS	<ol style="list-style-type: none"> 1. Do not delay other interventions that will have more immediate effects. 2. Do not use in mild cases that respond to nebulizer treatments.
ADULT 	<p>Allergic Reaction / Respiratory Distress: 125 mg IVP administer over at least 1 minute or IM.</p> <p>Adrenal Insufficiency: MD Order 125 mg IVP administer over at least 1 minute or IM.</p>
PEDIATRIC   	<p>Allergic Reaction / Respiratory Distress: MD order 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125mg.</p> <p>Adrenal Insufficiency: MD Order 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125mg.</p>

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SUCCINYLCHOLINE / ANECTINE®, QUELICIN®	
12/13/2013	
[PARAMEDIC]	
ACTIONS	Short acting depolarizing paralytic
INDICATIONS	Temporary paralysis for endotracheal intubation
CONTRA-INDICATIONS	<ol style="list-style-type: none"> 1. Known allergy to succinylcholine. 2. Documented hyperkalemia from physician's office and EKG changes (peaked T-waves and QRS widening.) 3. Suspected hyperkalemia: <ul style="list-style-type: none"> • Signs of hyperkalemia: Peaked T waves, lowered P wave amplitude, prolonged P-R interval, second degree AV blocks, and widened QRS complexes. • Causes of hyperkalemia: <ul style="list-style-type: none"> • Renal failure/insufficiency (acute or chronic) • Addison's Disease (Adrenal Insufficiency) • Sepsis/DKA (acidosis) • Severe Dehydration • Transplant rejection • Rhabdomyolysis • Muscular dystrophy patients • Paraplegia/quadriplegia patients • Crush injuries • Serious burns (onset after several hours) • Angiotensin-converting enzyme (ACE) inhibitors • Excessive use of potassium supplements 4. Known personal or family history of malignant hyperthermia or pseudocholinesterase deficiency.
PRECAUTIONS	<ol style="list-style-type: none"> 1. May cause bradycardia especially with repeat doses and in patients < 5 years. This will usually respond to oxygenation and atropine. 2. Burn > 72 hours.
SIDE EFFECTS	<ol style="list-style-type: none"> 1. Tachycardia, hypotension, hypertension and cardiac arrest. 2. Transient hyperkalemia 3. Increases intracranial pressure, pre-medication with lidocaine or fentanyl will blunt this effect.
ADULT	<p>RSI: 2 mg/kg IVP/IO, Max Dose 200mg.</p> <p>Post Intubation Paralysis:</p> <ul style="list-style-type: none"> • Initial dose may be repeated once

SUCCINYLCHOLINE / ANECTINE®, QUELICIN®

12/13/2013

[PARAMEDIC]

PEDIATRIC



RSI:

2 mg/kg IVP/IO

- Consult **MD** prior to use on pediatric patient if possible.

Post Intubation Paralysis:

- Initial dose may be repeated once.

KEY POINTS

1. Pre-oxygenation prior to use is essential.
2. Perform cricoid pressure once paralytic is administered and until patient is intubated and cuff inflated.
3. Has no effect on consciousness, pain threshold or cerebation.