MEDICATIONS
(ADULT & PEDS unless indicated)

GENERIC-SORTED	Preg	TRADE	Pg
Acetaminophen	A	Tylenol	2
Adenosine	C	Adenocard	3
Albuterol	C	Proventil, Ventolin	4
Amiodarone	D	Cordarone	5
Aspirin	D	Aspirin	6
Atropine	C	Atropine	7
Calcium	C	Calcium	8
Dextrose	C	D10	9
Diltiazem	C	Cardizem	10
Diphenhydramine	B	Benadryl	11
Epinephrine	C	Epinephrine	12-13
Epinephrine - Racemic	C	MicroNephrin	14
Fentanyl	C	Sublimaze	15
Glucagon	B	GlucaGen	16
Glucose	C	Glutose	17
Ibuprofen	C	Ibuprofen	18
Ipratropium	C	Atrovent	19
Ketamine	B	Ketalar	20
Ketorolac	C	Toradol	21
Lidocaine	B	Lidocaine	22
Magnesium	A	Magnesium	23
MARK 1 Kit	C	MARK 1 Kit	24-25
Midazolam	D	Versed	26
Naloxone	B	Narcan	27
Nitroglycerin	C	Nitroglycerin	28-29
Norepinephrine	C	Levophed	30
Ondansetron	B	Zofran	31
Pralidoxime	C	2-PAM	32
Sodium bicarbonate	C	Bicarbonate	33
Ticagrelor	C	Brilinta	34
Tranexamic Acid	B	Cyklokopron	35

GENERIC	TRADE-SORTED	Pg
Pralidoxime	**2-PAM**	32
Adenosine	**Adenocard**	3
Aspirin	**Aspirin**	6
Atropine	**Atropine**	7
Ipratropium	**Atrovent**	19
Diphenhydramine	**Benadryl**	11
Sodium bicarbonate	**Bicarbonate**	33
Ticagrelor	**Brilinta**	34
Calcium	**Calcium**	8
Diltiazem	**Cardizem**	10
Amiodarone	**Cordarone**	5
Tranexamic Acid	**Cyklokopron**	35
Dextrose	**D10**	9
Epinephrine	**Epinephrine**	12-13
Glucagon	**GlucaGen**	16
Glucose	**Glutose**	17
Ibuprofen	**Ibuprofen**	18
Ketamine	**Ketalar**	20
Norepinephrine	**Levophed**	30
Lidocaine	**Lidocaine**	22
Magnesium	**Magnesium**	23
MARK 1 Kit	**MARK 1 Kit**	24-25
Epinephrine - Racemic	**MicroNephrin**	14
Naloxone	**Narcan**	27
Nitroglycerin	**Nitroglycerin**	28-29
Albuterol	**Proventil, Ventolin**	4
Fentanyl	**Sublimaze**	15
Ketorolac	**Toradol**	21
Acetaminophen	**Tylenol**	2
Midazolam	**Versed**	26
Ondansetron	**Zofran**	31

Preg = Pregnancy Category

A: Safety established in humans
B: Safety based on animal studies
C: Uncertain safety, no adverse effects known (most medications)
D: Unsafe, risk of condition may outweigh risk of medication
For these protocols, emergent medications are indicated
X: Highly unsafe

ACETAMINOPHEN

Pain medication and antipyretic. Its analgesic mechanism of action is not fully understood.

1. INDICATIONS **[EMT through P]**
   - A. Pain Management: mild to moderate pain
   - B. Fever or Suspected Sepsis
   - **C.** Suspected Transfusion reaction

2. CONSIDERATIONS
   - A. Do not administer if patient has received acetaminophen within the past four (4) hours
   - B. Use caution in patients with chronic alcohol abuse
   - C. Ask about other over the counter medications including cold/flu medicines, headache medicines, sleep aids and prescription pain medications as these often come in combination with acetaminophen

3. CONTRAINDICATIONS
   - A. Known liver disease
   - B. Medication allergy/sensitivity

4. DOSAGE
   - A. Adult: 15 mg/kg PO, Max 1,000mg
   - B. Peds: 15mg/kg PO (may round to nearest tablet size)
   - **C.** 15 mg/kg IV/IO, infuse over 15 minutes, Max 1,000mg **(adult only) [Paramedic only]**

ADENOSINE

Slows AV nodal conduction. Very brief plasma half-life of approximately 10 seconds.

5. INDICATIONS
   A. SVT **[EMT-P]**

6. CONSIDERATIONS
   A. Requires free flowing IV. Very short half-life, given rapid IV push with flush; however, has been proven effective via IO route.
   B. Requires cardiac monitoring
   C. May be diagnostic for underlying rhythm during pause. Be observant.
   D. Warn patient of side-effects: feelings of lightheadedness, chest pressure, flushing
   E. Expect to require higher dose if taking Theophylline (asthma)
   F. Use with caution, may have a prolonged pause, if taking Dipyridamole/Persantine (cardiac) or Tegretol/Carbamazepine (seizure)

7. CONTRAINDICATIONS
   A. Ineffective for A-fib/flutter or ventricular dysrhythmias
   B. Drug-induced tachycardias
   C. Medication allergy/sensitivity

8. ADULT DOSAGE
   A. 12 mg rapid IV push with 10-20 ml flush and raise arm. For small adults less than 100 lbs, consider pediatric dosing.
   B. Adenosine should not be used in the post-cardiac transplant patient without Contact of Medical Control.
   C. Second dose, 12 mg rapid IV push with flush and raise arm.

9. PEDIATRIC OR SMALL ADULT DOSAGE
   1) 0.1 mg/kg rapid IV push with 5-10ml flush. Max 6 mg.
   2) If refractory, 0.2 mg/kg rapid IV push with 5-10 ml flush. Max 12 mg.

ALBUTEROL

Sympathomimetic bronchodilator commonly used in asthma and emphysema/COPD

1. INDICATIONS **[EMR through P]**
   - A. Respiratory distress with wheezing
   - B. Respiratory distress with history of asthma/COPD and decreased breath sounds
   - C. Crush Syndrome Trauma

2. There are no true contraindications

3. Administer Albuterol via nebulizer
   - A. Place ampule of pre-mixed solution (2.5 mg) into the nebulizer chamber
   - B. This standard dose is used for patients of all age groups.
   - C. Supply with 6 LPM oxygen
     - 1) If hypoxic, may use additional oxygen per cannula or CPAP
   - D. Encourage patient to breath slowly and deeply
   - E. Nebulized Albuterol may be repeated

4. Observe for side effects
   - A. Tachycardia
   - B. Hypertension
   - C. Tremors
   - D. Nausea

AMIODARONE

1. INDICATIONS
   - A. Shock-refractory VF/pulseless VT **[EMT P]**
   - B. Stable VT **[EMT P]**
   - C. Wide-complex tachycardia, unknown origin **[EMT P]**
   - D. Adjunct for rate control/conversion of A-fib/flutter, SVT, junctional or atrial tachycardias **[EMT P]**

2. CONSIDERATIONS
   - A. Requires cardiac and BP monitoring
   - B. Causes vasodilation and hypotension
   - C. Prolongs QT interval
   - D. Glass ampules, if used, should be aspirated via a filter needle when time allows

3. CONTRAINDICATIONS
   - A. Known medication allergy

4. ADULT DOSAGE
   - A. Cardiac arrest
     - 1) 300 mg IV push. Administer with IV fluids running wide-open.
     - 2) Repeat 150 mg IV push in 3-5 min
   - B. Stable wide-complex tachycardia and atrial tachycardias
     - 1) 150 mg diluted in 100ml D5W infused IV/IO over 10 min.
     - 2) May repeat in 10 min

5. PEDIATRIC DOSAGE
   - A. Cardiac arrest
     - 1) 5 mg/kg IV, max 300 mg
   - B. Stable wide-complex tachycardia
     - 1) 5 mg/kg IV over 20-60 mins, max 150 mg

ASPIRIN (ADULT ONLY)

Aspirin is essential to treating cardiac ischemia. True allergies should be considered. Patients who avoid aspirin due to stomach upset do not have true allergies. Consult medical control as needed.

1. INDICATIONS: Cardiac Chest Pain **[EMR through P]**

2. CONTRAINDICATIONS
    1) Inability to swallow
    2) Allergy to Aspirin or anti-inflammatories
    3) Patient has already taken the maximum recommended dose prior to EMT arrival (usually 2-4 81mg tablets). Repeat dose if enteric coated tablets used.

3. PRECAUTIONS
    A. Ask about actively bleeding stomach ulcers
    B. Patients with asthma may have a severe aspirin or anti-inflammatory allergy

4. ADMINISTRATION: Administer 2-4 81mg by mouth (chewed) Baby Aspirin as indicated

ATROPINE

1. INDICATIONS
   - A. Organophosphate or nerve agent poisoning **[EMT through P]**
     - 1) Self and crew member treatment only
   - B. Symptomatic bradycardia **[EMT P]**

2. CONSIDERATIONS
   - A. Transcutaneous pacing preferred for symptomatic bradycardia if promptly available **[EMT-P]**
   - B. Patients over age 50 or with cardiovascular disease may suffer angina or life-threatening dysrhythmias.
   - C. Not effective in patients with heart transplant

3. CONTRAINDICATIONS
   - A. Hypothermic bradycardia
   - B. 2nd degree type II and 3rd degree heart blocks, may cause further bradycardia

4. ADULT DOSAGE
   - A. Symptomatic bradycardia
     - 1) 1 mg IV, may repeat every 3-5 mins. Max 3mg total.
   - B. Organophosphate or nerve agent poisoning
     - 1) 2-5 mg IV/IM.
       - a. IM preferred route for large dose to avoid dysrhythmias
     - 2) May repeat every 5 min
     - 3) Titrate to respiratory secretions
     - 4) Anticipate tachycardia

5. PEDIATRIC DOSAGE
   - A. 0.02 mg/kg IV/IO/IM
     - 1) Minimal dose 0.1 mg. Max 0.5 mg.
     - 2) Repeat once for ACLS. Repeat as needed for poisoning.

CALCIUM GLUCONATE

Calcium channel blocking cardiac medications: Adalat, Amlodipine, Baypress, Bepridil, Calan, Cardene, Cardizem, Dilacor, Diltiazem, Dynacirc, Felodipine, Isoptin, Isradipine, Nicardipine, Nifedipine, Nimodipine, Nimotop, Nisoldipine, Norvasc, Plendil, Procardia, Sular, Tiazac, Vasocor, Verapamil, Verelan

1. INDICATIONS
   - A. Known or suspected hyperkalemia, especially in dialysis patients **[EMT-P]**
   - B. Antidote for Calcium channel blocker and Beta blocker effects/OD **[EMT-P]**

2. CONSIDERATIONS:
   - A. Requires free flowing IV, infiltration damages tissue

3. CONTRAINDICATIONS
   - A. Flush with saline after administration before giving sodium bicarbonate to prevent precipitation
   - B. Digoxin overdose or over-effect

4. ADULT DOSAGE
   - A. Hyperkalemia and OD antidote
     1) 3g IV push. May repeat.

5. PEDIATRIC DOSAGE: 80 mg/kg IV.

DEXTROSE

1. INDICATIONS:
   A. Determination of hypoglycemia with blood sugar less than 60 **[AEMT, P]**
   B. Known diabetic with symptoms of hypoglycemia and unable to obtain glucose measurement, treat as hypoglycemic.

2. CONTRAINDICATIONS: Lack of IV access
   A. Consider oral glucose, glucagon IM/intranasal
   B. May also give Dextrose orally. Must have intact gag reflex.

3. CONSIDERATIONS
   A. Requires free flowing IV access. Infiltration destructive to tissue.
   B. 1-250mL bag of 10% Dextrose = 25 grams
   C. Use with caution with undetermined glucose and signs of stroke. Hyperglycemia is detrimental to stroke victims.

4. DOSAGE
   A. Adult: 250mL bag of D10
   B. Peds: 2-4mL/kg of D10, up to a maximum of 250mL

DILTIAZEM / CARDIZEM

1. INDICATIONS
   A. Rate control in A-fib or flutter **[EMT-P]**
   B. Rate control in refractory SVT, second-line drug **[EMT-P]**

2. CONSIDERATIONS
   A. Requires cardiac and BP monitoring

3. CONTRAINDICATIONS
   A. Wolff-Parkinson-White Syndrome
   B. Wide-complex tachycardia of unknown origin

4. DOSAGE
   A. 0.25 mg/kg IV slow push over 2 min, max 20 mg
      1) 10 mg dose often effective, especially in the elderly
   B. If refractory, 0.35 mg/kg IV slow push, max 25 mg

DIPHENHYDRAMINE / BENADRYL

1. INDICATIONS
   A. Allergic reaction **[EMT-P]**
   B. Dystonic reaction to Reglan **[EMT-P]**

2. CONTRAINDICATIONS
   A. Hypersensitivity/allergy to medication (rare)

3. DOSAGE
   A. Adult: 25-50mg IM/IV
   B. Peds: 1mg/kg IM/IV, max 50mg

EPINEPHRINE – IV/NEB

1. INDICATIONS
   - A. Cardiac arrest **[EMT P]**
   - B. Anaphylaxis-severe **[EMT P]**
   - C. Croup **[EMT B]**
   - D. Hypotension (adult only) **[EMT P]**

2. CONSIDERATIONS:
   - A. Patients over age 50 or with cardiovascular disease may suffer angina or life-threatening dysrhythmias.
   - B. There are no contraindications in true anaphylactic shock.

3. ADULT DOSAGE
   - A. Cardiac arrest
     - 1) IV/IO 1mg of 1:10,000 every 3-5 min
   - B. Anaphylaxis-severe
     - 1) Consult **MEDICAL CONTROL** for IV use.
     - 2) 0.1mg = 1ml of 1:10,000
     - **OR**
     - 3) 0.1mg = 0.1ml of 1:1000
     - 4) SLOW IV over 5 min
     - 5) Dilute in 10 ml NS or infuse with IV running wide-open
     - 6) May repeat
   - C. Hypotension- Only to be used until a vasopressor drip can be started
     - 1) 5-20mcg (0.5-2ml) diluted in 0.9% NS every 1-5 minutes PRN

4. PEDIATRIC DOSAGE
   - A. Neonatal resuscitation
     - 1) 0.03 mg/kg of 1:10,000 IV/IO. Repeat every 3-5 minutes.
   - B. Cardiac arrest
     - 1) 0.01 mg/kg of 1:10,000 IV/IO
   - C. Anaphylaxis-severe
     - 1) Consult **MEDICAL CONTROL** for IV use.
     - 2) 0.01 mg/kg of 1:10,000 IV/IO, max 0.1 mg, every 5 minutes as needed.
     - 3) Infuse with fluid boluses
   - D. Croup
     - 1) 0.25-0.5 mL/kg of 1:1000 (max 5mL) diluted with 3 mL normal saline, administered by nebulizer

EPINEPHRINE - INTRAMUSCULAR INJECTION

1. INDICATIONS
   - A. Allergic Reaction protocol **[EMR through EMT-P]**
     - 1) Signs of severe allergic reaction including angioedema, bronchospasm, or hypotension
     - 2) Signs and symptoms of shock (hypoperfusion).
     - 3) **EMR** may utilize EpiPen unit dose autoinjector or manual draw up. Both require additional training and approval.
   - B. Respiratory Distress refractory to Albuterol **[EMT P]**

2. CONTRAINDICATIONS
   - A. There are no contraindications in anaphylactic shock

3. DOSAGE
   - 1) Order with dosage
     - a. Adults (above 60 pounds or 30 kg or 8 years old)
       - i. One Epi Pen Adult (1:1000 solution)
       - ii. 0.3 mg epinephrine = 0.3 ml of 1:1000 solution
     - b. Children (less than 60 pounds or 30 kg or 8 years old)
       - i. One Epi Pen Junior (1:2000 solution)
       - ii. 0.15 mg epinephrine = 0.15 ml of 1:1000 solution

4. ADMINISTRATION
   - A. Verify correct dosage
   - B. Clear and not discolored
   - C. Correct route, <u>not</u> for IV administration.
   - D. Preferred injection site is in the lateral thigh.
   - E. Describe procedure to patient and obtain verbal consent if possible
   - F. Administer autoinjector with firm contact and hold for 10 seconds, or per IM injection.
   - G. Massage injection site to increase absorption
   - H. Examine autoinjector, if needle exposed the injection was successful.
   - I. Dispose of injector/syringe properly

5. Reassess patient and VS in 2 minutes
6. Transport immediately; continue to reassess and monitor patient
7. Epinephrine may be repeated in 5-10 minutes

EPINEPHRINE - RACEMIC

1. INDICATIONS
   A. Difficulty Breathing: If stridor is heard or suspicion for croup (barky cough, URI symptoms, stridor) and no improvement with treatment with albuterol **[EMT]**

2. CONSIDERATIONS:
   A. Rebound exacerbation of croup may occur after administration
   B. Caution: hypertension, known cardiovascular disease

3. CONTRAINDICATIONS
   A. Hypersensitivity

4. DOSAGE
   A. 2.25% 3mL Normal Saline Neb (mix 0.5mL of 2.25% racemic epinephrine bullet with 3cc of normal saline bullet)

FENTANYL / SUBLIMAZE

Controlled Substance

1. INDICATIONS
   - A. Pain management **[EMT- P]**
   - B. Cardiac chest pain refractory to NTG **[EMT - P]**
   - C. Post Intubation/BIAD sedation **[EMT-P]**

2. CONSIDERATIONS:
   - A. May cause hypotension if given rapidly, although less than morphine or hydromorphone
   - B. Reverse with Narcan/Naloxone

3. CONTRAINDICATIONS
   - A. Medication allergy/hypersensitivity
   - B. Hypotension

4. DOSAGE (TITRATE TO EFFECT)

   A. Analgesia:
      1) Adult: 25-100 mcg IV/IM/IO/IN, every 3-5 min, Maximum 3mcg/kg
      2) Peds: 1 mcg/kg IV/IM/IO/IN, may repeat 0.5 mcg/kg every 5 minutes; max 2mcg/kg

   B. Post Intubation/BIAD Sedation:
      1) Adult: 50-75 mcg IV/IO, every 5 minutes as needed, Max 300mcg
      2) Pediatric: 1 mcg/kg IV/IO/IN, May repeat 0.5mcg/kg every 4 min as needed, Max 2 mcg/kg

GLUCAGON

This protocol may be used by properly trained and licensed EMTs for the treatment of patients who have been previously diagnosed with diabetes and are currently experiencing an altered mental status.

1. INDICATIONS
   - A. Blood glucose less than 60 **[EMT B through P]**
   - B. Unable to tolerate oral glucose
   - C. Known diabetic with symptoms of hypoglycemia and unable to obtain glucose measurement, treat as hypoglycemic

2. CONTRAINDICATIONS:
   - A. Known hypersensitivity to the drug

3. CONSIDERATIONS
   - A. Preferred for prompt treatment of hypoglycemia in children unable to tolerate oral glucose. Utilize IM or intranasal route rather than attempt IV access.
   - B. May not be effective if malnourished, as no glucose storage
   - C. Administer with caution to patients with a history of cardiovascular disease, renal disease or adrenal gland tumor
   - D. Side effects rare: hypotension, dizziness, headache, nausea, and vomiting

4. DOSAGE
   - A. Adult: 1 mg
   - B. Peds: 0.1 mg/kg, max 1mg

5. ADMINISTRATION
   - A. Must be reconstituted before using
     1) Add the diluent to the powdered medication
     2) Gently shake to mix thoroughly
   - B. Administer intramuscularly or intranasal
   - C. May also be given intranasally with mucosal atomizer. Onset of effects is delayed up to 15 minutes.

6. Record actions, transport and continue to monitor
   - A. Hypoglycemia should resolve within minutes; up to 15 minutes with intranasal administration. If it does not, consider other causes or need for IV therapy.

GLUCOSE

1. INDICATIONS
   A. Hypoglycemia with blood sugar less than 60 **[EMR through EMT-P]**
   B. Known diabetic with symptoms of hypoglycemia and unable to obtain glucose measurement, treat as hypoglycemic.

2. CONTRAINDICATIONS
   A. Unprotected airway, no gag reflex
   B. NEVER PUT ANYTHING IN THE MOUTH OF A PATIENT WHO HAS A SIGNIFICANT DECREASE IN LEVEL OF CONSCIOUSNESS.
   C. Use with caution with undetermined glucose and signs of stroke. Hyperglycemia is detrimental to stroke victims.

3. Dose: 1-2 tubes of glucose

4. ADMINISTRATION
   A. Apply to tongue depressor
   B. Place between cheek and gum
   C. Repeat after glucose has dissolved

5. Record actions, transport and continue to monitor
   A. Hypoglycemia should resolve within minutes. If it does not, consider other causes or need for IV therapy.

IBUPROFEN

Ibuprofen is a nonsteroidal anti-inflammatory (NSAID).

1. INDICATIONS **[EMT through EMT-P]**
   - A. Pain Management: mild to moderate pain
   - B. Fever or Suspected Sepsis

2. CONTRAINDICATIONS
   - A. Hypersensitivity
   - B. Active GI bleeding or peptic ulceration
   - C. Pregnancy
   - D. Pediatrics < 6 months of age

3. CONSIDERATIONS
   - A. Do not use if another NSAID has been administered in prior 4 hours
   - B. Alcohol consumption may increase the risk of GI bleeding
   - C. Use with caution in elderly patients, those with advanced renal disease, DM, or evidence of dehydration
   - D. Increase antiplatelet properties of anticoagulants
   - E. Increase risk of bleeding when combined with other NSAIDs

4. DOSAGE
   - A. Adult: 10mg/kg PO; max 800mg; typical dose 400mg-600mg
   - B. Peds: 10mg/kg PO (may round to nearest tablet size)

IPRATROPIUM / ATROVENT

Ipratropium bromide is an anticholinergic bronchodilator. It improves the action of Albuterol in treating bronchospasm and is especially useful in patients with COPD and Emphysema. Common side effects include dry mouth, cough, or unpleasant taste.

1. INDICATIONS **[EMT-B through P]**
   - A. Per Asthma/COPD/Respiratory Distress protocol

2. CONTRAINDICATIONS:
   - A. Allergy or sensitivity to Atrovent/Ipratropium
   - B. Allergy or sensitivity to Atropine (chemically related)
   - C. Allergy to peanuts if assisting with inhaler only

3. Add Atrovent to Albuterol via nebulizer
   - A. Place Atrovent 0.5mg ampule of pre-mixed solution into the nebulizer chamber
   - B. This standard dose is used for patients of all age groups
   - C. Administer as per Albuterol protocol

4. Observe for side effects (similar to Albuterol):
   - A. Tachycardia
   - B. Hypertension
   - C. Tremors
   - D. Nausea
   - E. Worsening of glaucoma. Observe for eye pain in patients with underlying glaucoma. Have patients close their eyes to avoid contact with nebulized medications.

KETAMINE / KETALAR

Controlled Substance

1. INDICATIONS
   - A. Analgesia/Pain management **[EMT-P]**
     - 1) Primary for major trauma or burns
     - 2) Secondary for narcotic-refractory pain
       - a. Pain rating greater than 4 after therapeutic narcotic dosing (i.e., Fentanyl 100-200mcg), especially in a chronic pain patient (using OxyContin, MS Contin, Methadone)
   - B. Post intubation/BIAD Sedation **[EMT-P]**
   - C. Sedation Behavioral Hyperactive Delirium with Severe Agitation **[EMT-P]**

2. CONSIDERATIONS:
   - A. Unique analgesic and anesthetic properties
     - 1) Analgesia titratable
     - 2) Dissociative sedation anesthesia not dose-related once achieved
   - B. Maintains airway reflexes, paralytic required for intubation
   - C. Maintains cardiovascular status
   - D. Maintains skeletal muscle tone; may have random movements or myoclonic spasms
   - E. No reversal agent
   - F. Emergence agitation may require benzodiazepine sedation
   - G. Emergence nausea and vomiting may require an anti-emetic

3. CONTRAINDICATIONS
   - A. Medication allergy/hypersensitivity
   - B. Infants less than 3 months old

4. Dosage
   - A. Analgesia/Pain Management
     - 1) IV/IO 0.3 mg/kg; over 10 minutes, may repeat 10 mins after completion of first dose, up to two times, max single dose 30mg
     - 2) IN 1 mg/kg; max 100mg/1ml/nare; max 5mg/kg
   - B. Post Intubation/BIAD Sedation
     - 1) 2mg/kg IV/IO
   - C. Cardioversion/pacing
     - 1) 3-5 mg/kg IN; max 100/mg/1ml/nare: May repeat in 5-10 minutes; Max 5mg/kg
     - 2) 5mg/kg IM, max 500 IM
   - D. Behavioral- Severe Agitation Sedation
     - 1) 5mg/kg IM, maximum 500mg (**IM route only**)

KETOROLAC / TORODAL

Ketorolac is a nonsteroidal anti-inflammatory (NSAID).

1. INDICATIONS **[AEMT, EMT-P]**
   - A. Fever or Suspected Sepsis: antipyretic
   - B. Pain Management: short term management of moderate to severe pain

2. CONSIDERATIONS:
   - A. Do not use if another NSAID has been administered in prior 4 hours
   - B. Alcohol consumption may increase the risk of GI bleeding
   - C. Use with caution in elderly patients, those with advanced renal disease, DM, or evidence of dehydration
   - D. Increase antiplatelet properties of anticoagulants
   - E. Increase risk of bleeding when combined with other NSAIDs

3. CONTRAINDICATIONS
   - A. Hypersensitivity
   - B. Allergy to other NSAIDs
   - C. Bleeding disorders
   - D. Renal failure
   - E. Active peptic ulcers
   - F. Pregnancy

4. DOSAGE
   - A. Adult: 15mg IV/IO or 30mg IM
   - B. Peds: 0.5mg/kg IV/IO or 1.0mg/kg IM

LIDOCAINE

1. INDICATIONS
   - A. Cardiac arrest from VT/VF and wide complex tachycardia **[EMT- P]**
   - B. Stable VT and wide complex tachycardia **[EMT-P]**
   - C. Analgesia IO access in conscious patient (do not delay administration of other lifesaving medications to give lidocaine)

2. CONSIDERATIONS
   - A. Give per treatment algorithms only, not prophylactically for PVCs

3. CONTRAINDICATIONS
   - A. Allergy or hypersensitivity
   - B. Junctional or ventricular escape rhythm providing adequate perfusion

4. DOSAGE
   - A. Cardiac arrest
     1) 1-1.5 mg/kg IV/IO
     2) Repeat 0.75mg/kg IV/IO
     3) Max 3 mg/kg total dose
   - B. Perfusing dysrhythmia
     1) 1-1.5 mg/kg IV/IO
     2) Repeat dose 0.75 mg/kg IV/IO
     3) Max 3 mg/kg total dose
   - C. Analgesia for IO Infusions
     1) Adult: 20 mg of 2% lidocaine slow IO push over 1-2 minutes; may repeat x1
     2) Peds: 0.5 mg/kg slow IO push over 1-2 minutes; max of 20 mg; may repeat x1

MAGNESIUM

1. INDICATIONS
   - A. Eclampsia **[EMT-P]**
   - B. Torsades de Pointes or refractory VF **[EMT-P]**
   - C. Suspected hypomagnesemia (malnutrition) with ventricular dysrhythmias **[EMT-P]**
   - D. Ventricular dysrhythmias in Digoxin toxicity **[EMT-P]**
   - E. **COPD/Asthma with respiratory distress** [EMT-P]

2. CONSIDERATIONS:
   - A. May cause hypotension if given rapidly, especially in concentrated solution
   - B. Rapid boluses are quickly cleared by the kidney with normal renal function

3. CONTRAINDICATIONS
   - A. none

4. DOSAGE
   - A. Eclampsia
     - 1) 2 gm IV/IO over 2-3 min, repeat x 2 if needed
   - B. Cardiac
     - 1) Adult: 2 gm IV/IO push for arrest; over 5 min for rhythm with pulses
     - 2) Pediatric: 25mg/kg IV/IO push for arrest; over 5 min for rhythm with pulses, max 2gm
   - C. COPD/Asthma
     - 1) Adult: 2gm IV/IO over 10-20 minutes
     - 2) Pediatric: 40mg/kg IV/IO over 10-20 minutes

MARK 1 KIT

Nerve agent (Sarin, Soman, Tabun, VX) and organophosphate insecticide exposure temporary treatment for self and partner use only, now considered victims. Treatment is titrated to decreasing the respiratory secretions.

Signs/symptoms:
Salivation/secretions
Lacrimation/tearing
Urination
Defecation
GI upset/nausea/cramps
Emesis
Miosis/pin-point pupils
CNS changes: agitation, muscle twitching, seizure

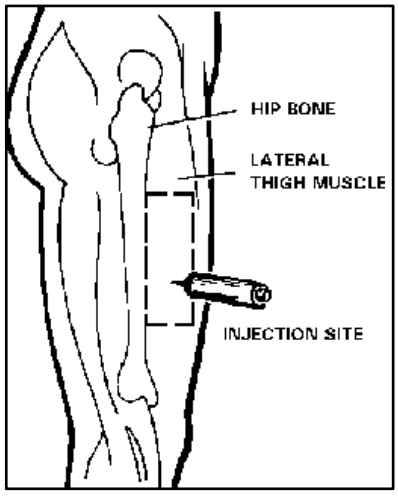
1. INDICATIONS
   A. Nerve agent/organophosphate poisoning **[EMR through P]**
      1) Signs and symptoms
      2) Known exposure, prior to onset of signs and symptoms

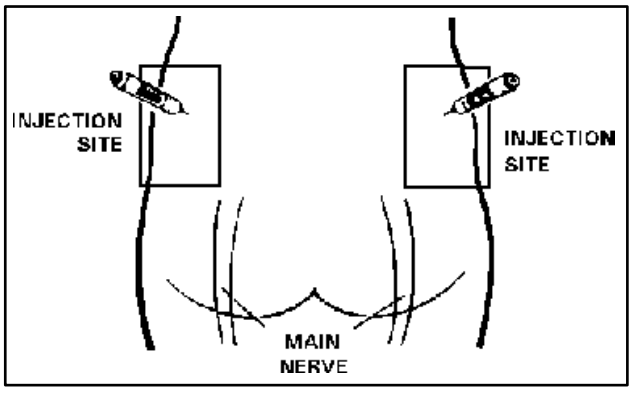
2. CONTRAINDICATIONS
   A. None with known exposure

3. CONSIDERATIONS
   A. Exposed EMTs are now patients
   B. Both the agent and the antidote inhibits your ability to function as a rescuer
   C. Accidental digital injection will NOT deliver an effective dose

4. DOSAGE per kit
   A. Atropine 2mg per 1ml autoinjector
   B. 2-PAM/pralidoxime chloride 600mg per 2 ml autoinjector

5. PROCEDURE
   A. Evacuate contaminated area
   B. Dermal decontamination ASAP after appropriate MARK 1 dosage
   C. Identify landmarks with large muscle groups:
      1) Lateral thighs/vastus lateralis muscle (preferred)
      2) Upper-outer buttock/gluteal muscle (secondary)





D. Grasp the clip with your

nondominant hand

E. With your dominant hand, remove the Atropine (smaller) injector from clip. It is now armed.
F. Press green tip firmly against injection site and hold for 10 seconds. May be administered through clothing.
G. Remove injector and deposit in sharps container. If no container available, bend the exposed needle against a hard surface to avoid sharps exposure.
H. Massage injection site as time allows
I. Repeat with 2-PAM (larger) injector. This tip is black.
J. Further treatment for significant exposure requires EMT-I/P scope of practice

MIDAZOLAM /VERSED

Controlled Substance

1. INDICATIONS
   - A. Seizure **[EMT-P]**
   - B. Post Intubation/BIAD Sedation **[EMT-P]**
   - C. Sedation Behavioral **[EMT-P]**

2. CONSIDERATIONS:
   - A. Respiratory depression, may need airway support
   - B. Onset and resolution more rapid than Valium

3. CONTRAINDICATIONS
   - A. Known medication allergy

4. DOSAGE
   - A. Seizure
     - 1) Adult: 2-2.5 mg IV/IO, may repeat after 3-5 minutes, maximum 10 mg total
       - a. If no IV/IO access & ≥ 49kg 10 mg IM, May repeat in 5 minutes, Maximum 20mg total
     - 2) Peds 0.2 mg/kg IV/IO, Maximum 2.5mg per single dose, may repeat in 3-5 minutes as needed, Maximum of 10 mg total,
       - a. If no IV/IO access & < 49kg 0.2mg/kg IM, Max single dose 5mg, may repeat in 5 minutes if needed, Maximum 10mg total
   - B. Post intubation/BIAD/Cardioversion/Pacing Sedation
     - 1) Adult: 2-2.5mg IV/IO/IM/IN every 3-5 minutes as needed, maximum 10mg
     - 2) Peds: 0.1-0.2mg/kg IV/IO/IN/IM, maximum 10mg
   - C. Sedation (Behavioral)
     - 1) **BARS Score 6** (may repeat dose x 1 after 5 minutes as needed all ages)
       - a. Adult age < 65yrs: 2.5 mg IV/IO/IN or 5 mg IM
       - b. Adult age ≥ 65 yrs: 1-2.5 mg IV/IO/IN or 2.5 mg IM
       - c. Peds: 0.1-.02 mg/kg IV/IO/IM/IN
     - 2) **BARS Score 7:** (may repeat dose x 1 after 5 minutes as needed all ages)
       - a. Adult age < 65 yrs: 10 mg IM
       - b. Adult age ≥ 65 yrs: 5 mg IM
       - c. Peds: 0.1-0.2 mg/kg IM

NALOXONE / NARCAN

Opiate/opioid/narcotic antagonist. Examples of narcotics: Codeine, Demerol/Meperidine, Dilaudid/Hydromorphone, Diphenoxylate/Lomotil, Heroin, Hydrocodone/Vicodin/Lortab, Methadone, Morphine/MS Contin, Oxycodone/Percocet, OxyContin, Propoxyphene/Darvocet, Pentazocine/Talwin

1. INDICATIONS
   - A. Suspected narcotic overdose with RR < 10 or hypotension **[EMR through P]**

2. CONSIDERATIONS:
   - A. May cause narcotic withdrawal. Titrated dosing preferred.
   - B. Be prepared for violent awakening, consider need for restraints.
   - C. Rare anaphylactic reactions reported.

3. CONTRAINDICATIONS
   - A. Medication allergy/hypersensitivity
   - B. Stable airway (including intubation) and BP
   - C. Narcotic withdrawal
   - D. Cardiac Arrest

4. DOSAGE
   - A. Narcotic overdose
     - 1) 0.4-2mg IV/IO/IM/IN, titrate primarily to respiratory effect.
     - 2) 4mg IN if using prefilled designated nasal Narcan (may repeat after 5 minutes)

NITROGLYCERIN - ADMINISTERED

This protocol may be used by properly trained and licensed EMTs for Advanced Life Support treatment.

1. INDICATIONS
   - A. Chest pain **[AEMT through P]**
   - B. Pulmonary edema **[AEMT through P]**

2. CONTRAINDICATIONS
   - A. Hypotension or blood pressure below 100 mm Hg systolic
   - B. Head injury
   - C. Pediatric patients
   - D. Use of Viagra or Levitra within 24 hrs, or Cialis within 36 hours.

3. CONSIDERATIONS:
   - A. Previous hypotension with NTG administration
   - B. If heart rate >140 or <50, assess for dysrhythmia. Treat dysrhythmias primarily.

4. ADMINISTRATION
   1) Do not shake spray bottle.
   2) Ask patient to lift tongue and place tablet or spray dose under tongue (wear gloves) or have patient place tablet or spray under tongue.
   3) Ask patient to keep mouth closed with tablet under tongue (without chewing or swallowing) until dissolved and absorbed
   4) Doses may be repeated in 3-5 minutes if no relief and SBP > 100
   5) Record actions, transport and continue to monitor and reassess
   6) Monitor blood pressure within 3 mins. Must be assessed between doses.
   7) Record effect on pain relief utilizing pain scale
   8) Record any side effects (headache, hypotension, pulse rate changes)

5. Cardiac monitor
   1) Assess for dysrhythmia if heart rate remains >140 or <50. Treat dysrhythmias primarily.
6. Establish IV access. Do not delay treatment.

NITROGLYCERIN - ASSISTED

This protocol may be used by properly trained and licensed EMTs for treatment patients who have been previously diagnosed as having heart disease, have prescribed nitroglycerin (NTG), and are having chest pain thought to be of cardiac origin.

1. INDICATIONS: Cardiac chest pain **[EMT-B]**

2. CONTRAINDICATIONS
   - A. Hypotension or blood pressure below 100 mm Hg systolic
   - B. Head injury
   - C. Pediatric patients
   - D. Use of Viagra or Levitra within 24 hrs, or Cialis or similar drugs within 36 hours

3. CONSIDERATIONS:
   - A. Previous hypotensive response to NTG. Have patient supine.

4. Perform patient assessment.
   - A. Perform initial assessment
   - B. Perform focused history and physical exam for cardiac patient
     - 1) Past medical history: cardiovascular disease, diabetes
     - 2) Onset of chest pain, or change in symptoms
     - 3) Interventions (previous medications taken, aspirin, nitroglycerin)
   - C. Assess baseline vital signs and SAMPLE history
     - 1) Assure SBP above 100 mmHg systolic
     - 2) Apply cardiac monitor if trained to do so
     - 3) ALS intercept for diagnostic telemetry if pulse remains greater than 140 or less than 50.

5. Administer oxygen if indicated (if not done previously)
6. Consider Advanced Life Support intercept
7. Verify:
   - 1) Patient's own medication
   - 2) Medication not expired
   - 3) Right route = sublingual
   - 4) Patient is alert
8. Facilitate administration of medication
   - A. Ask patient to lift tongue and place tablet or spray dose under tongue (wear gloves) or have patient place tablet or spray under tongue. Do not shake spray bottle.
   - B. Ask patient to keep mouth closed with tablet under tongue (without swallowing) until dissolved and absorbed
   - C. Doses may be repeated in 3-5 minutes if no relief, SBP > 100
   - D. Record actions, transport and continue to monitor and reassess
   - E. Monitor blood pressure within 3 mins. Must be assessed between each dose.
   - F. Record effect on pain relief utilizing pain scale
   - G. Record any side effects (headache, hypotension, pulse rate changes)

NOREPINEPHRINE / LEVOPHED

Norepinephrine is a vasopressor. It stimulates alpha- and beta-adrenergic receptors to increase blood pressure, dilate coronary arteries and increase inotropy and chronotropy.

1. INDICATIONS
   - A. Hypotension / Shock: If patient has persistent signs of shock not responsive to initial fluid resuscitation (40ml/kg or 2L) **[EMT-P]**

2. CONSIDERATIONS:
   - A. Make sure IV/IO is patent prior to administration, recommend larger bore, more proximal IV (e.g. do not use IVs placed in hands)
   - B. Hypotension secondary to hypovolemia should be treated with volume replacement first
   - C. Use with caution, patients with profound hypoxia or hypercarbia may produce vtach or vfib
   - D. Concurrent use with linezolid, dihydroergotamine, and TCAs may increase blood pressure further

3. CONTRAINDICATIONS
   - A. Hypertension

4. DOSAGE
   - A. 4mg in 250ml D5W or 0.9% NS, infuse @ 2-10mcg/min
   - B. Titrate to SBP>90 OR MAP >65 (or age appropriate minimum SBP) and/or signs of improved perfusion

ONDANSETRON / ZOFRAN

1. INDICATIONS
   A. Nausea and/or vomiting **[AEMT, EMT-P]**

2. CONTRAINDICATIONS
   A. Known hypersensitivity/allergy

3. CONSIDERATIONS
   A. Rare transient QT prolongation with IV administration

4. DOSAGE
   A. Adult: 4mg IV/IO/IM/PO, may repeat x 1 after 15 minutes, max 8mg
   B. Peds: 0.15 mg/kg IV/IO/IM/PO, may repeat x 1 after 15 minutes, max 4 mg

PRALIDOXIME / 2-PAM

Prevents organophosphates and most nerve agents from binding permanently.

1. INDICATIONS **[EMT- P]**
   A. Organophosphate or nerve agent poisoning

2. CONTRAINDICATIONS
   A. None for known exposure

3. ADULT DOSAGE
      1) 600mg pralidoxime chloride in 2ml per autoinjector

SODIUM BICARBONATE

Tricyclic/Tetracyclic antidepressants: Amitriptyline, Amoxapine, Anafranil, Ascendin, Aventyl, Clomipramine, Desipramine, Doxepin, Elavil, Etrafon, Imipramine, Limbitrol, Ludiomil, Maprotiline, Norpramin, Nortriptyline, Pamelor, Protryptyline, Sinequan, Tofranil, Triavil, Vivactil.

1. INDICATIONS
   - A. Known or suspected hyperkalemia, especially in dialysis patients **[EMT-P]**
   - B. Antidote for Tricyclic antidepressant OD **[EMT-P]**

2. CONSIDERATIONS:
   - A. Requires adequate ventilation to be effective
   - B. Flush with saline after administration before giving calcium to prevent precipitation

3. CONTRAINDICATIONS
   - A. None

4. DOSAGE
   - A. 1 mEq/kg IV, max 50mEq/dose. 1 ampule is 50 mEq in 50 ml.
   - B. May repeat once after 5 minutes

TICAGRELOR/BRILINTA

Ticagrelor is a P2Y12 platelet inhibitor indicated to reduce the rate of thrombotic cardiovascular events in patients with ACS.

1. INDICATIONS
   - A. ST-segment elevation myocardial infarction (STEMI) **[EMT-P]**

2. CONSIDERATIONS:
   - A. Like other antiplatelet agents, can cause significant, sometimes fatal, bleeding
   - B. Dyspnea can occur (14%) but is self-limiting

3. CONTRAINDICATIONS
   - A. Known hypersensitivity/allergy
   - B. Pediatric patients
   - C. GI Bleed
   - D. Trauma
   - E. Intracranial Hemorrhage

4. DOSAGE
   - A. 180mg PO

Tranexamic Acid (TXA)

Prevents clots from being effectively broken down by competitively inhibiting plasminogen activation.

1. INDICATIONS **[EMT P]**
   - A. Trauma with signs of hemorrhagic shock
   - B. Vaginal bleeding with signs of hemorrhagic shock
2. CONSIDERATIONS
   - A. Administer in separate access site from blood product administration
3. CONTRAINDICATIONS
   - A. Known active intravascular clotting
   - B. Known subarachnoid hemorrhage
   - C. Hypersensitivity to tranexamic acid
4. ADULT DOSAGE
   - A. Trauma
     1) 2g IV/IO slow push
   - B. Obstetrical/Vaginal Bleeding
     1) 1g IV/IO over 10 minutes
5. PEDIATRIC DOSAGE
   - A. Trauma
     1) 15mg/kg IV/IO (max 2g) slow push