ACETAMINOPHEN - TYLENOL **09/13/2022**	[PARAMEDIC]
ACTIONS	1. Analgesic 2. Antipyretic
INDICATIONS	1. Mild to moderate pain. 2. To reduce fever (>99.9F) in adults or children.
CONTRA-INDICATIONS	1. Known allergy. 2. Patient has taken acetaminophen in last four (4) hours. 3. Known liver disease.
PRECAUTIONS	History of excessive alcohol consumption.
SIDE EFFECTS	Nausea and Vomiting
ADULT	Two 325 mg acetaminophen tablets every 4-6 hours while symptoms last.
PEDIATRIC 	For pediatric patients contact a physician.
KEY POINTS	1. Not to exceed 10 tablets (3250mg) in 24 hours, unless directed by a doctor. 2. Many OTC cold medicine contains acetaminophen – use cautiously with other medications

This page intentionally left blank

ADENOSINE / ADENOCARD® **09/13/2022**	[PARAMEDIC]
ACTIONS	Naturally occurring nucleoside slows electrical conduction through the AV node.
INDICATIONS	To convert SVT to normal sinus rhythm, including SVT that is associated with accessory bypass tracts (e.g., WPW).
CONTRA-INDICATIONS	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)
PRECAUTION	May cause a prolonged period of asystole. May cause arrythmias
SIDE EFFECTS	May cause: • Headache/head pressure, • chest pain, • burning sensation • nausea
ADULT	**SVT:** 6 mg rapid IVP, 2nd dose of 12 mg may be repeated in 1-2 min. if no change is observed.
PEDIATRIC	**SVT: MD order** 0.1 mg/kg IVP, increase to 0.2 mg/kg if necessary.
KEY POINTS	• Should be given in the closest IV port to the patient as possible followed by a 20-50 cc NS flush. • May be used in pregnancy if benefit outweighs risk.

This page intentionally left blank

ALBUTEROL 0.083 % (2.5 mg Albuterol diluted to 3 ml) **09/13/2022** [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Sympathomimetic drug, Beta 2-selective. Dilates bronchioles, increases heart rate.
INDICATIONS	1. Respiratory distress with bronchospasms / wheezes, or COPD. 2. Treatment of suspected hyperkalemia.
CONTRA-INDICATIONS	1. Known hypersensitivity/allergy to albuterol 2. Patient with signs/symptoms of heart failure
PRECAUTIONS 	1. HR over 160 or suspected myocardial ischemia (i.e. chest pain) **consult MD** prior to use. 2. Use cautiously in pt. with suspected MI, cardiovascular disease, dysrhythmias, CHF or history of heart failure, convulsive disorders, diabetes, hyperthyroidism and patients who are unusually sensitive to drugs that stimulate the sympathetic nervous system.
SIDE EFFECTS	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:** • Patient's Metered Dose Inhaler (MDI): 1 dose, may repeat as necessary. • Nebulized premeasured 2.5 mg vial, combined with ipratropium, may repeat as needed.
PEDIATRIC 	**Bronchospasms and Hyperkalemia:** Nebulized premeasured 2.5 mg vial, may repeat as needed.
KEY POINTS	1. When nebulized, administer simultaneously with ipratropium. 2. Should be kept out of direct sunlight. 3. Albuterol by nebulizer is an adjunct drug in allergic reaction; it is not a substitute for epinephrine in severe anaphylaxis.

This page intentionally left blank

AMIODARONE / CORDARONE **09/13/2022**	[EMT-I, PARAMEDIC]
ACTIONS	Antiarrhythmic
INDICATIONS	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	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	**Pulseless arrest; VF or VT:** *(EMT-I, Paramedic)* 300 mg IVP/IO may repeat 150 mg in 3-5min. **Post conversion if arrhythmia returns with a pulse or if increasing ectopy:** *(EMT-I, Paramedic)* 150 mg over 10 minutes, mix in 100 cc NS, run at 15 mg/min If hypotension or bradycardia develops, stop the infusion. **Wide complex tachycardia with a pulse; including VT:** (*Paramedic Only*) 150 mg IV/IO over 10 minutes, mix in 100 cc NS, run at 15 mg/min by **MD order**. Repeat once as needed if VT reoccurs again by **MD order**.
PEDIATRIC	**Pulseless arrest; VF or VT:** *(EMT-I, Paramedic)* 5 mg/kg IV/IO (max of 300mg per dose), may repeat x 2 for a total of 3 doses **Wide complex tachycardia:** *(Paramedic Only)* 5 mg/kg IV/IO (max of 150 mg per dose) mix in 100 cc NS, run at 50 gtts/min over 20 min with **MD order**, may repeat once, again with **MD order**.
KEY POINTS	Incompatible with sodium bicarbonate and heparin. Do not administer in the same IV tubing without flushing between meds.

This page intentionally left blank

ASPIRIN (ACETYLSALICYLIC ACID) 09/13/2022	[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
PRECAUTIONS	Patient must actively be able to chew tablets.
SIDE EFFECTS	Nausea or Vomiting
ADULT	**Cardiac chest pain:** 324 mg (4x81 mg chewable “baby aspirin”)
PEDIATRIC	Not recommended for pediatric patients
KEY POINTS	If patient has taken 324 mg of ASA in the last 2 hours, Aspirin therapy may be waived.

This page intentionally left blank

ATROPINE SULFATE **09/13/2022**	[EMT-I, PARAMEDIC]
ACTIONS	Anticholinergic agent (Parasympatholytic)
INDICATIONS	1. Symptomatic bradycardia 2. Organophosphate O.D.
PRECAUTIONS	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	1. Dilates pupils 2. Heart Palpitations
ADULT 	**Symptomatic bradycardia:** 1.0 mg IVP every 3-5 min to 3.0 mg (ET use 2x dose) **Organophosphate poisoning:** 1.0 mg IVP Q 2-3 min until drying of secretions. If HR > 120, **consult with MD** prior to use.
PEDIATRIC 	**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 **Organophosphate poisoning:** 0.02 mg/kg IVP, not to exceed 0.5 mg per dose, PRN 2-3 min. until drying of secretions.
KEY POINTS	Expired Atropine is stored by the regional Haz-mat team and it is also kept as part of the inventory of medications in an EMS Chem-pack.

This page intentionally left blank

CALCIUM CHLORIDE 10% **09/13/2022**	[PARAMEDIC]
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	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  	**Cardiac Arrest In dialysis patient, suspected renal failure patient, or suspect hyperkalemia:** 1.0 Gram IVP, give after initial shock and/or first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest) **Dysrhythmias In Dialysis Patient:** 1.0 Gram slow IVP, **Consult MD** first if possible. Bradycardia: (follow Cardiac Algorithm Bradycardia) Wide complex tachycardia: (follow Cardiac Algorithm Tachycardia) **Symptomatic Overdose On Calcium Channel Blocker:** 1.0 Gram slow IVP over 2 min. Hypotension: < 80 systolic (follow Shock Protocol) Bradycardia: < 50/min (follow Cardiac Algorithm Bradycardia) **Reverse Magnesium Sulfate Toxicity:** 1.0 Gram slow IVP over 2 min. **MD order** Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes. **Suspected Hyperkalemia:** 1.0 Gram slow IVP over 5 min.
PEDIATRIC 	**Suspected Hyperkalemia:** 20 mg/kg (0.2 ml/kg) slow IVP over 5 min. **MD order**

CALCIUM CHLORIDE 10% **09/13/2022** [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 **09/13/2022** [PARAMEDIC]	
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	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  	**Cardiac Arrest In dialysis patient, suspected renal failure patient, or suspected hyperkalemia:** 3.0 Gram IVP, give after initial shock and/or first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest) **Dysrhythmias In Dialysis Patient:** 3.0 Gram slow IVP, **Consult MD** first if possible. Bradycardia: (follow Cardiac Algorithm Bradycardia) Wide complex tachycardia: (follow Cardiac Algorithm Tachycardia) **Symptomatic Overdose On Calcium Channel Blocker:** 3.0 Gram slow IVP over 2 min. Hypotension: < 80 systolic (follow Shock Protocol) Bradycardia: < 50/min (follow Cardiac Algorithm Bradycardia) **Reverse Magnesium Sulfate Toxicity:** 3.0 Gram slow IVP over 2 min. **MD order** Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes. **Suspected Hyperkalemia:** 3.0 Gram slow IVP over 5 min.
PEDIATRIC 	**Suspected Hyperkalemia:** 60 mg/kg slow IVP over 5 min. **MD order**

CALCIUM GLUCONATE **09/13/2022** [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 09/13/2022 [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	Administration of activated charcoal can result in aspiration or significant particulate obstruction of the airway.
SIDE EFFECTS	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
KEY POINTS	1. Always have suction on standby; patient should be monitored closely for decreasing level of consciousness and impending vomiting. 2. Orders for Charcoal must be obtained from a physician at the receiving hospital.

This page intentionally left blank

CYANIDE ANTIDOTE: CYANOKIT 09/13/2022 [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	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; • Early symptoms - headache, vertigo, confusion, drunken behavior, shortness of breath. • Advanced symptoms - N&V, chest tightness, generalized seizures, coma, dilation of pupils, cardiac arrhythmias, hypertension (early), hypotension (late), asystole, apnea, non-cardiac pulmonary edema.
CONTRA-INDICATION	1. Allergy to Hydroxocobalamin 2. Severe Hypertension
PRECAUTIONS	A separate IV should be established for other medications to prevent precipitation.
SIDE EFFECTS	Cyanokit's most common adverse reactions (>5%) are transient and include: 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
ADULT	**Cyanide Poisoning: MD Order** 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.

CYANIDE ANTIDOTE: CYANOKIT 09/13/2022 [PARAMEDIC]	
PEDIATRIC	**Cyanide Poisoning: MD Order** 70 mg/kg, up to a maximum of 5 g. Prepare dose as noted below.
KEY POINTS	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)

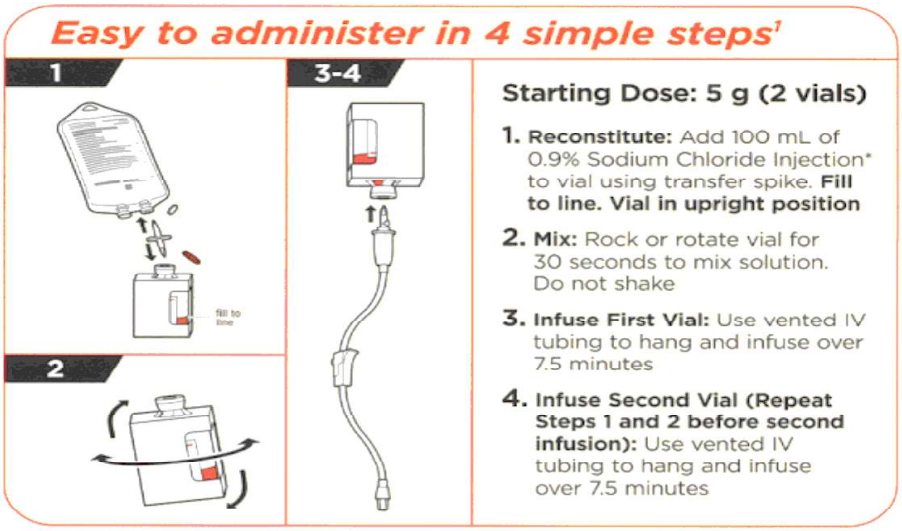
Pediatric Cyanide Antidote Dosage Chart

Weight in kg

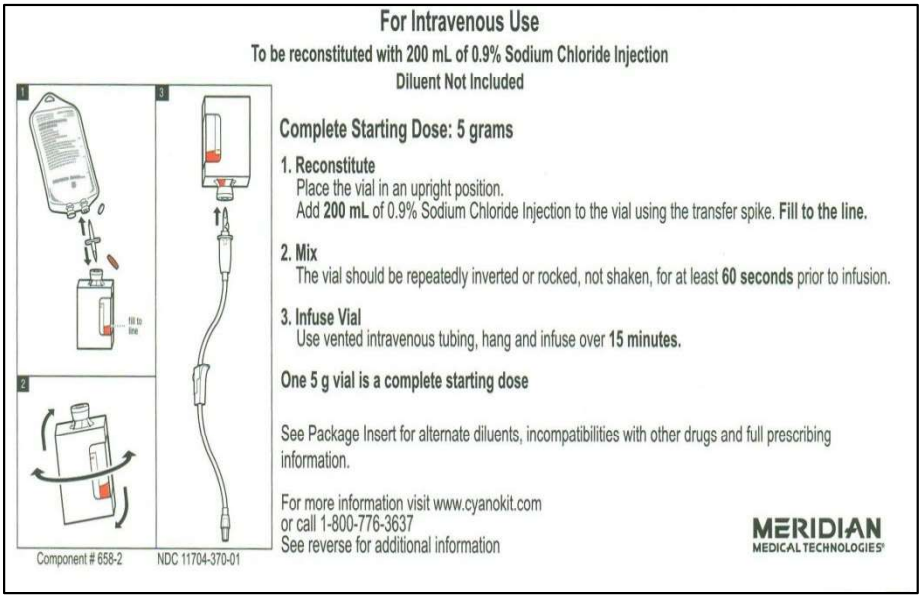
5kg	8kg	10kg	12kg	15kg	20kg	25kg	30kg	35kg	40kg	45kg	50kg
14ml= 350mg	22ml= 550mg	28ml= 700mg	34ml= 850mg	42ml = 1050mg	56ml = 1400mg	70ml = 1750mg	84ml = 2100mg	98ml = 2450mg	112ml= 2800mg	126ml= 3150mg	140ml= 3500mg

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.

1.5 gram vials



5 gram vials



This page intentionally left blank

DEXTROSE **09/13/2022**	[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	1. Unconscious patient with suspect hypoglycemia 2. Symptomatic hypoglycemia with CBG<60
PRECAUTIONS	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	**Suspected hypoglycemia:** 25 Grams IV/IO (50 ml of D50%) or (250 ml of D10%)
PEDIATRIC 	**Hypoglycemia, unconscious / unknown: (See Chart)**
KEY POINTS	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 is awake and able to protect their 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		17.0 ml	
Purple (10-11 kg)	5.25 Gms	52.5 ml		21.0 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® **09/13/2022** [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	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.
KEY POINT	1. Diazepam is part of the inventory of medications in an EMS Chem-pack.

This page intentionally left blank

DILTIAZEM / CARDIZEM® **09/14/2022**	[PARAMEDIC]
ACTIONS	Calcium channel blocker that slows conduction and prolongs refractoriness in the AV node, which reduces heart rate.
INDICATIONS	Atrial fibrillation or atrial flutter with ventricular rate (150 or greater) And: • Chest pain; or • Shortness of breath; or • Near syncope/syncope; and • Transport time greater than 10 minutes.
CONTRA-INDICATIONS	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. Tachycardia secondary to infectious illness/sepsis
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	**Atrial fibrillation and atrial flutter with rapid ventricular rate:** 0.25 mg/kg max is 25 mg per dose IVP over 2 minutes, second bolus dose of 0.35 mg/kg max dose is 25 mg IVP may be administered after 10-15 minutes, if the initial dose does not slow the rhythm to an acceptable rate to control symptoms.
PEDIATRIC	Not recommended for pediatric use.
KEY POINTS	Bradycardia can occur if cardioversion is done immediately after administration of diltiazem.

This page intentionally left blank

DIPHENHYDRAMINE HCL / BENADRYL® **09/13/2022**	[EMT-I, PARAMEDIC]
ACTIONS	1. Histamine blocker 2. Anticholinergic 3. Anti-Parkinsonism effect (to treat dystonic reactions)
INDICATIONS	1. Anaphylaxis 2. Allergic reactions 3. In conjunction with geodon to prevent acute dystonic reactions 4. Acute dystonic reaction
CONTRA-INDICATION	Allergy to diphenhydramine
PRECAUTIONS	May cause hypotension when given IV.
SIDE EFFECTS	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	**Allergic reaction:** 50 mg PO or slow IVP or deep IM. **Extrapyramidal / dystonic reaction:** 50 mg slow IVP or deep IM. **Combative patients:** *Threat to self or others:* 50 mg IV/IO/IM concomitantly with geodon *Agitated with no perceived threat:* 50 mg IV/IO/IM concomitantly with first dose of geodon
PEDIATRIC 	**Allergic reaction:** 1 mg/kg slow IVP or IM, max 50 mg **Extrapyramidal / dystonic reaction: contact MD if possible** 1 mg/kg slow IVP or IM, max 50 mg **Combative patients: contact MD if possible** 1 mg/kg slow IVP or IM, max 50 mg
KEY POINTS	Should be administered after epinephrine in anaphylaxis.

This page intentionally left blank

DOPAMINE / INTROPIN® **12/07/2021**	[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	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	1. Ectopic beats, nausea, and vomiting. 2. Angina has been reported following treatment.
ADULT	**Hypotension:** 1600 mcg/ml (400 mg in 250 ml normal saline) IV infusion with microdrip chamber only. 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	1. Can precipitate hypertensive crisis in susceptible individuals. 2. Consider hypovolemia, and treat with appropriate fluids before administration of dopamine.

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".

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)

EPINEPHRINE 06/07/2022	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Increased heart rate, myocardial contractile force, systemic vascular resistance, arterial blood pressure. 2. Potent bronchodilator.
INDICATIONS	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	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	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 	**Cardiac Arrest**: • 1 mg (10 ml of 1:10,000 solution) IVP or IO every 4 min during arrest, *EMT-I, Paramedic* • ET 2.0 mg per dose, *Paramedic Only* **Allergic Reaction/Anaphylaxis:** • 0.3 mg (0.3 ml of 1:1,000) IM, *EMT*, *AEMT, EMT-I, Paramedic* **For Allergic Reaction with Cardiovascular Collapse:** • 0.3 mg of 1:10,000 (3ml of 1:10,000) slow IVP, *Paramedic Only* • Epi Auto Injection Device 0.3mg *EMR, EMT*, *AEMT, EMT-I*, *Paramedic* **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**

EPINEPHRINE **06/07/2022**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
PEDIATRIC 	**Neonate and Pediatric Cardiac Arrest:** • All doses 0.1 ml/kg of **1:10,000** (0.01 mg/kg) IVP or IO - every 4 Min. *EMT-I, Paramedic* **Allergic Reaction/Anaphylaxis:** • 0.01 mg/kg (0.01 ml/kg of **1:1,000** solution) IM, *EMT, AEMT, EMT-I, Paramedic* • May need to give 0.01 mg/kg **1:10,000** slow IVP, *Paramedic only* if patient in cardiovascular collapse. **Contact MD *first* if** possible. • Maximum single pediatric dose 0.3 mg**. Contact MD** first if possible. • Epi Auto Injection Device 0.1 mg *EMR, EMT, AEMT, EMT-I, Paramedic* **Asthma/Reactive Airway Disease:** • 0.01mg/kg (0.01 ml/kg of **1:1,000** solution) SQ/IM. **Contact MD** prior to use if possible. *Paramedic Only* **Bradycardia w/ Pulse:** • IVP or IO - 0.01 ml/kg of **1:10,000** (0.01 mg/kg). Repeated every 3-5 min. *Paramedic Only* **Croup**: • Nebulize 5 ml/5 mg of 1:1,000 **Contact MD** • Indicated for child < 6 yrs old. Observe for rebound effect. *Paramedic Only*
KEY POINTS	Epinephrine increases cardiac work and can precipitate angina and/or MI in susceptible individual with ischemic heart disease.

ETOMIDATE / AMIDATE® **09/13/2022**	[PARAMEDIC]
ACTIONS	1. Sedative hypnotic 2. Onset 20-30 seconds, duration 7-10 minutes
INDICATIONS	For induction of unconsciousness in rapid sequence intubation.
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	Has no analgesic property.
SIDE EFFECTS	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 paralytic.

This page intentionally left blank

FENTANYL / SUBLIMAZE **09/13/2022**	[EMT-I, PARAMEDIC]
ACTIONS	Narcotic analgesic
INDICATIONS	1. Acute Pain Onset 2. Interventional Analgesia 3. RSI pretreatment for head injury/increased ICP 4. Post RSI sedation
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	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	1. May cause nausea/vomiting. 2. Will cause pupillary constriction.
ADULT	**Acute 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 2 mcg/kg. Max of 100 mcg. Repeat only by **MD Order.** **Interventional Analgesia** *(Paramedic Only)* 50 mcg administered together with 1mg of midazolam • May repeat x1 after 5 min PRN • After 15 minutes, administer only 50 mcg of fentanyl. To maintain pain control, administer 50 mcg of fentanyl q 15 min. **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

FENTANYL / SUBLIMAZE **09/13/2022**	[EMT-I, PARAMEDIC]
	Sedation post RSI: (*Paramedic Only*) 3 mcg/kg IV/IO
PEDIATRIC	**Acute Pain Onset:** 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 100 mcg. Repeat only by **MD Order.** **Sedation / pretreatment for RSI in suspected head injury or suspected increased ICP:** (*Paramedic Only*) 3 mcg/kg IV/IO
KEY POINTS	1. Record a pain scale for patients that receive fentanyl. 2. Patients on chronic opioid therapy or with a history of opioid abuse may require higher doses for therapeutic effect.

GLUCAGON **09/13/2022**	[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.
PRECAUTIONS	1. Patients that have been administered glucagon should be placed on their side as vomiting may occur. 2. Patients that are administered glucagon should be given something to eat. Glucagon is usually one effective for approximately 1 hour. If a patient can't swallow or is too ill to eat, they should be transported to the hospital for additional monitoring of blood sugar.
SIDE EFFECTS	Nausea and vomiting may occur.
ADULT	**Hypoglycemic Emergency:** 1 mg IM
PEDIATRIC 	**Hypoglycemic Emergency:** 0.1 mg/kg to a maximum of 1 mg IM or SQ **MD order** to repeat. • Maximum 1.0 mg every 30 minutes.
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. 3. Ambulances generally do not carry enough glucagon to treat beta blocker or calcium channel blocker overdose. If the patient is suspect for overdose, contact medical control for dosing .

This page intentionally left blank

GLUCOSE, ORAL 09/13/2022	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Restores blood sugar level to normal in some patients with hypoglycemia.
INDICATIONS	Suspected hypoglycemia patient.
CONTRA-INDICATIONS	1. Diminished level of consciousness resulting in the patient's inability to protect their airway. 2. Inability to swallow
PRECAUTIONS	None
SIDE EFFECTS	Nausea and Vomiting
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.
PEDIATRIC 	Contact Medical Control for Pediatric Dosing
KEY POINTS	Should not be given to children under the age of 2 yo.

This page intentionally left blank

Heparin (Unfractionated) **09/13/2022** [PARAMEDIC]	
ACTIONS	Heparin is an anticoagulant that works to prevent further clotting, but will not actively dissolve clots that have already formed.
INDICATIONS	1. Interfacility transfer when heparin has been initiated by the sending facility. 2. STEMI
CONTRA-INDICATIONS	See Questionnaire Checklist (Must be completed in its entirety prior to MD call).
PRECAUTIONS	If spontaneous hemorrhage develops, evidence by hematuria, hematemesis, epistaxis, etc., immediately discontinue administration and contact Medical Control. Consider *Protamine Sulfate* (Refer to Protocol).
SIDE EFFECTS	• Paradoxical excitement or agitation may occur • Respiratory depression • Hypotension
ADULT	Call into On-line Medical Control after the Questionnaire is complete. **STEMI:** 60 units/kg bolus (Max 4000 units), followed by infusion 12 units/kg/hr (Max 1000 units/hr).
PEDIATRIC	Not indicated for pediatric use
KEY POINT	Questionaire must be received by a nurse or doctor at the receiving facility or the questions should be part of the ePCR.

HEPARIN QUESTIONNAIRE CHECKLIST

(COMPLETE THIS PRIOR TO MD CALL IN)

ABSOLUTE CONTRAINDICATIONS (If ***YES*** to any ***DO NOT GIVE***)

- Internal bleeding or recent major trauma, GU/GI bleed, surgery (includes laser eye surgery within 6 weeks)
- History of Stroke (Ischemic or hemorrhagic), Dementia or CNS damage within 1 year
- Head trauma or brain surgery within last 6 months
- Brain tumor, arteriovenous malformation (abnormal connection between arteries and veins), or aneurysm
- Significant closed-head or facial trauma within the preceding 3 months
- Active bleeding or known bleeding disorder
- Confirmed or suspected aortic dissection
- Pregnancy or within 1 week post-partum

RELATIVE CONTRAINDICATIONS (If ***YES*** to any discuss with MD)

- CPR greater than 10 minutes
- Oral anticoagulation therapy
- Serious systemic disease (advanced/terminal cancer, severe liver or kidney disease, etc.)
- Puncture of non-compressible blood vessel within 2 weeks (Abdominal, thoracic, pelvic, etc.)
- TIA within last 6 months
- Uncontrolled hypertension, systolic BP > 180mmHg or diastolic > 110mmHg
- Intracardiac thrombi (Static blood in the heart develops into clots)

Paramedic: _____

Ordering Physician: _____

(If HEPARIN is given to the patient this form needs to be given to RN or Physician at transfer of care.)

HYDROMORPHONE HYDROCHLORIDE/ DILAUDID® / 09/13/2022 [PARAMEDIC]	
ACTIONS	Narcotic analgesic, opiate type.
INDICATIONS	Analgesic for extreme pain
CONTRA-INDICATIONS	1. Pediatric patients, labor, respiratory depression or when ventilatory function is depressed such as status asthmatics, COPD, emphysema. 2. Patients who are hypersensitive to hydromorphone or other opiates; those with intracranial lesions associated with ICP. 3. Acute exacerbation of chronic pain is not an indication for hydromorphone. 4. Hypotension.
PRECAUTIONS	Use with caution in elderly patients, and patients with chronic liver conditions.
SIDE EFFECTS	1. CNS: pupillary constriction, sedation, somnolence, clouded sensorium, dizziness. 2. CV: hypotension, bradycardia; 3. GI: nausea, vomiting. 4. RESP: respiratory depression, bronchospasm.
ADULT	**Acute Pain Management:** 0.25-0.5 mg slow (over 1-2min) IVP. Repeat dose every 15 min PRN pain relief, to a max of 2.0 mg. • Start with 0.25 mg in elderly/debilitated patients, to a max of 1.5 mg. 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. • 0.5 mg in elderly/debilitated patients. Repeat dose every 30 min PRN relief, to max of 1.5 mg. **Interventional Analgesia:** *(Paramedic Only)* 0.5 mg administered together with 1 mg of midazolam • May repeat x 1 after 5 min PRN • After 15 minutes, administer 0.5 mg of hydromorphone. To maintain pain control, administer 0.5 mg of hydromorphone q 15 min.

HYDROMORPHONE HYDROCHLORIDE/ DILAUDID® / 09/13/2022 [PARAMEDIC]	
PEDIATRIC	Not indicated for pediatric patients.
KEY POINTS	1. IV administration should be done over 1-2 minutes. 2. Hydromorphone is 7-10 times more analgesic than morphine with a long duration of action.

IPRATROPIUM/ATROVENT **09/13/2022**	[EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Short acting anticholinergic drug, blocks acetylcholine. Dilates bronchioles, increases heart rate.
INDICATIONS	1. Respiratory distress with bronchospasms / wheezes, or COPD.
CONTRA-INDICATIONS	1. Known hypersensitivity/allergy to ipratropium 2. Patient with signs/symptoms of heart failure
PRECAUTIONS 	1. HR over 160 or suspected myocardial ischemia (i.e. chest pain) **consult MD** prior to use. 2. Use cautiously in pt. with suspected MI, cardiovascular disease, dysrhythmias, CHF or history of heart failure, convulsive disorders, diabetes, hyperthyroidism and patients who are unusually sensitive to drugs that stimulate the sympathetic nervous system.
SIDE EFFECTS	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	**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	1. Administer simultaneously with albuterol. 2. Should be kept out of direct sunlight.

This page intentionally left blank

KETAMINE 10/05/2021	[PARAMEDIC]
ACTIONS	1. Dissociative anesthetic with minimal depression on respiration or blood pressure.
INDICATIONS	1. First line RSI induction agent for: hypotension, severe respiratory disease process, and pediatrics. 2. Combative or disoriented patients who present a physical danger to themselves or the crew. 3. Trauma patients that need severe pain control where there is concern for hemodynamic instability. 4. Trauma patients during Multi-Patient Scenes (MPS) in which the availability of other pain control medications may be limited due to number of patients.
CONTRA-INDICATIONS	1. Hypersensitivity to Ketamine; 2. Acute globe injury; 3. Known pregnancy
SIDE EFFECTS & PRECAUTIONS	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, suction as necessary. 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. 6. Use with extreme caution in elderly patients, age greater than age 70.
ADULT	**Severe pain control for traumatic injury <u>not controlled by opioid pain medication</u> or 1st line for MPS with limited availability of alternative pain management medications:** • 25 mg slow IVP IV or IO, may repeat x1 in 10 min • 50 mg IM, may repeat x1 in 10 min **Chemical Sedation:** • 0.5-1 mg/kg IV or IO, slow IV push may repeat x 1 in 10 min. Max 2mg/kg. Onset 30 sec, duration 5-10 minutes. • 1-2 mg/kg IM may repeat x 1 in 10 min. Max 4mg/kg. Onset 3-4 min, duration 12-25 minutes.

KETAMINE **10/05/2021**	[PARAMEDIC]
	RSI Induction: • 2 mg/kg IV or IO, slow IV push. Onset 30 sec, duration 5-10 minutes. • 4 mg/kg IM. Onset 3-4 min, duration 12-25 minutes.
PEDIATRIC	**Severe pain control for MCI/AVI patients with limited quantities of alternative pain medications:** • 25 mg IM, may repeat x1 in 10 min **Chemical Sedation:** • 0.5-1 mg/kg IV or IO, slow IV push may repeat x 1 in 10 min. Max 2mg/kg. Onset 30 sec, duration 5-10 minutes. • 1-2 mg/kg IM may repeat x 1 in 10min. Max 4mg/kg. Onset 3-4 min, duration 12-25 minutes **RSI induction:** • 2 mg/kg IV or IO, slow IV push. Onset 30 sec, duration 5-10 minutes. • 4 mg/kg IM. Onset 3-4 min, duration 12-25 minutes
KEY POINTS	1. Administer immediately before paralytic for RSI. 2. Must receive midazolam post intubation if Ketamine administered. 3. Simple agitation does not warrant use of ketamine. 4. Once a patient is in the process of being chemically sedated, continue to monitor the patient for respiratory depression. Pulse oximeter and $ETCO_2$ monitoring should be done along with vitals, including level of consciousness every 5 minutes. 5. For patients receiving ketamine for pain control, nystagmus is an end point indicator for dosing.

KETOROLAC/TORADOL **09/13/2022**	[EMT-I, PARAMEDIC]
ACTIONS	Nonsteroidal anti-inflammatory (NSAID)
INDICATIONS	Use for pain that occurs after: • isolated trauma • kidney stone • migraine, with history of the same • back pain
CONTRA-INDICATIONS	1. Possible renal insufficiency/failure; 2. Pregnancy, active labor; 3. Known allergy to ketorolac, ibuprofen or aspirin; 4. Patient taking anticoagulant; 5. Bleeding or clotting disorder; 6. Patient is on blood thinners; 7. Closed head injury or suspect intracranial hemorrhage; 8. Recent history of stomach ulcer or GI bleed.
SIDE EFFECTS	May cause vomiting; administer slowly
ADULT	**Acute Pain Management:** (*EMT-I, Paramedic*) 15 mg IV or 30 mg IM
PEDIATRIC 	**Acute Pain Management:** Not recommended – **Contact Medical Control**
KEY POINTS	None

This page intentionally left blank

LIDOCAINE / XYLOCAINE® **09/13/2022**	[A-EMT, EMT-I, PARAMEDIC]
ACTION	1. Local Anesthetic 2. Sympatholytic, neuroprotection in head injury, decreases ICP during intubation.
INDICATIONS	1. Premedication during RSI for patients at risk of increased intracranial pressure. 2. Anesthetic for EZ IO infusion.
CONTRA-INDICATION	Known allergy to lidocaine
PRECAUTIONS	Can cause focal or grand mal seizures, increased heart block, decreased myocardial contractility, and rarely cardiovascular collapse.
SIDE EFFECTS	1. Lidocaine toxicity symptoms include drowsiness, disorientation, decreased hearing, paresthesia, muscle twitching, and agitation. 2. Lidocaine can cause a burning sensation when first injected into an EZ-IO site.
ADULT	**RSI, Suspected Increased Intracranial Pressure:** 1.5 mg/kg IVP – *Paramedic Only* **EZ IO Infusion** 20-40 mg slowly prior to saline flush.
PEDIATRIC 	**RSI, Suspected Increased Intracranial Pressure:** 1.5 mg/kg IVP- *Paramedic Only* **EZ IO Infusion** 0.5 mg/kg slowly prior to saline flush.
KEY POINTS	1. For RSI lidocaine should be given approx 3 minutes before induction. 2. For EZ-IO anesthetic allow lidocaine to dwell in the space for 60 seconds prior to infusion.

This page intentionally left blank

MAGNESIUM SULFATE 10% **09/13/2022** [PARAMEDIC]	
ACTIONS	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	1. First line antiarrhythmic for torsades de pointes pattern in V-fib/pulseless VT. 2. Treatment and prevention of seizures due to pregnancy (Eclampsia).
CONTRA-INDICATIONS	1. Severe Renal Failure 2. Heart Block
PRECAUTIONS	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	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 	**Pulseless Arrest V-fib / V-Tach:** 1 – 2 Grams IVP over 1 minute. **Preeclampsia or Eclampsia: MD order** 2 – 4 Grams Slow IVP over 1 minute per gram. **Maintenance Drip: MD order** 0.5 - 4.0 Grams per hour.
PEDIATRIC 	**Pulseless Arrest V-fib/V-Tach:** 25mg/kg IV/IO rapid infusion, max dose 2 grams.

MAGNESIUM SULFATE 10% **09/13/2022** [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.

METHYLPREDNISOLONE /SOLU-MEDROL 09/13/2022 [PARAMEDIC]	
ACTIONS	Steroid used as an anti-inflammatory drug.
INDICATIONS	Severe respiratory distress due to suspected asthma/COPD Allergic reaction/anaphylaxis Acute Adrenal Insufficiency
CONTRA-INDICATIONS	Allergy to steroids
PRECAUTIONS	1. Do not delay other interventions that will have more immediate effects. 2. Do not use in mild cases that respond to nebulizer treatments.
SIDE EFFECTS	1. Nausea Vomiting 2. Headache 3. Dizziness
ADULT	**Allergic Reaction / Respiratory Distress:** • 125 mg IVP administer over at least 1 minute or IM. **Adrenal Insufficiency: MD Order** • 125 mg IVP administer over at least 1 minute or IM.
PEDIATRIC	**Allergic Reaction / Respiratory Distress: MD order** • 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125 mg. **Adrenal Insufficiency: MD Order** • 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125 mg.
KEY POINTS	1. Use this medication only with the diluent that accompanies the medication. 2. It may take several hours for this medication to have measurable effect.

This page intentionally left blank

MIDAZOLAM **02/01/2022**	[PARAMEDIC]
ACTIONS	CNS depressant with amnesic effect.
INDICATIONS	1. Active seizure activity, status epilepticus. 2. For amnestic 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 7. Severe pain associated with isolated orthopedic injury give with analgesic. 8. Agitated patients undergoing noninvasive ventilatory support, i.e. nebulizer mask or CPAP
PRECAUTIONS	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	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	**Generalized Seizures/Status Seizures:** 2 mg IV/IO/IN or 4 mg IM • Repeat 2 mg. IV/IO/IN after 2 min as needed x 1 • Additional doses if seizure activity continues. **MD order** **Post RSI Sedation:** 0.1 mg/kg IV/IO to a Max dose of 6 mg. **Agitated with no perceived threat:** 2 mg IV/IO/IN or 4 mg IM • Repeat after 10 minutes as needed x 1. **Physical Restraint/Chemical Sedation:** **Threat to self or others (2nd line after ketamine):** 2 mg IV/IO/IN/IM Repeat after 5 minutes as needed x 1

MIDAZOLAM **02/01/2022**	[PARAMEDIC]
	Severe Pain Management: Used in isolated orthopedic injuries with analgesic 0.5 -1 mg IV/IN/IM may repeat every 5 min as needed up to 2 mg total dose. **Interventional Analgesia** *(Paramedic Only)* 1 mg administered together with 50 mcg fentanyl or 0.5 mg hydromorphone • may repeat x1 after 5 min PRN • After 15 minutes, administer only opioid. To maintain pain control, administer additional opioid q 15 min. **Acute Alcohol Withdrawal:** 2 mg IV/IN/IM • For severe symptoms, may repeat every 5 min as needed up to 6 mg total dose.
PEDIATRIC	**Generalized Seizures/Status Seizures:** 0.1 mg/kg up to 2 mg IV/IO/IM • Repeat in 1 min for continued seizure activity. • Additional doses if seizure activity continues. **MD order** **Post RSI Sedation:** 0.1 mg/kg up to 2 mg IV/IO
KEY POINTS	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. • Midazolam can mask signs of impending respiratory failure; these patients need careful monitoring. 3. Once a patient is in the process of being chemically sedated, the medics must continually monitor the patient for respiratory depression. Pulse oximeter and $ETCO_2$ monitoring should be done along with vitals, including level of consciousness every 5 minutes. 4. Intranasal dosing of medication is not recommended for pediatric patient due to the concentration that is carried.

MORPHINE **02/02/2021**	[EMT-I, PARAMEDIC]
ACTIONS	Narcotic analgesic
INDICATIONS	Management of acute pain
CONTRA-INDICATIONS	1. Known allergy 2. Hypotension
PRECAUTIONS	1. May cause vomiting; administer slowly
SIDE EFFECTS	1. Respiratory depression 2. Vasodilation/hypotension 3. Pupil constriction
ADULT	**Acute Pain management:** (*EMT-I, Paramedic*) 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
PEDIATRIC 	**Acute Pain management:** 0.1-0.2 mg/kg IV/IM/IO
KEY POINTS	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.

This page intentionally left blank

NALOXONE HCL / NARCAN® **09/13/2022** [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Opiate antagonist
INDICATIONS	1. Reversal of opiate effect, particularly respiratory depression. 2. Used diagnostically in **Unconscious/Unknown Protocol**
CONTRA-INDICATIONS	None in the emergency setting
PRECAUTIONS	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	**Unconscious/ Unknown:** Intra-nasal administration*(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • 1 mg in each nares, 2mg total IM – Auto Injector *(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • Follow the manufacturer's instructions for metered dose IM, SQ, IV, IO *(A-EMT, EMT-I, PARAMEDIC)* • 0.5 mg IV, IM, SQ, IO. • If no response is observed, may give an additional 1.5 mg in 1- 2 min up to 2mg max. **Altered LOC - with suspected opiate OD:** Intra-nasal administration*(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • 1 mg in each nares, 2mg total IM – Auto Injector *(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • Follow the manufacturer's instructions for metered dose IM, SQ, IV, IO *(A-EMT, EMT-I, PARAMEDIC)* • 0.5 mg IV, IM, SQ, IO • If no response is observed, may give an additional 1.5 mg in 1- 2 min. • May repeat in 2mg increments as necessary.

NALOXONE HCL / NARCAN® **09/13/2022** [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	
PEDIATRIC 	**Opiate OD, Unconscious/Unknown:** Intra-nasal administration*(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • 0.1mg/kg bolus every 1-2 minutes PRN (max 2.0 mg) IM – Auto Injector *(EMR, EMT, A-EMT, EMT-I, PARAMEDIC)* • Follow the manufacturer's instructions for metered dose IM, SQ, IV, IO *(A-EMT, EMT-I, PARAMEDIC)* • 0.1 mg/kg bolus every 1-2 minutes PRN (max 2.0 mg)
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 **09/13/2022**	[EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Dilation of coronary arteries. 2. Reduced venous tone and decreased peripheral resistance. 3. Generalized smooth muscle relaxation.
INDICATIONS	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	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	1. Headache, flushing, dizziness, and burning under the tongue. 2. Hypotension, particularly orthostatic.
ADULT 	**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* • For >3 doses: **MD order** • Nitro drip start at 20mcg/min and titrate to effect or dose per transfer orders. Decrease rate if hypotension develops. ***EMT** may a*ssist the patient to self-administer their own nitroglycerin up to 3 doses. **Esophageal Food Impaction:** 0.4 mg SL spray or tablet, may repeat by **MD order** *Paramedic*
PEDIATRIC 	Contact On-line Medical Control for pediatric dosing
KEY POINTS	This medication should be protected from sunlight.

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

NOREPINEPHRINE /LEVOPHED®

06/07/2022 [PARAMEDIC]

ACTIONS	Norepinephrine stimulates alpha receptors in the peripheral vasculature, producing vasoconstriction which increases blood pressure(alpha-adrenergic action). Concurrent beta receptor stimulation may produce increases in heart rate and mild bronchodilation and dilation of coronary arteries (beta-adrenergic action).
INDICATIONS	Acute hypotension associated with obstructive, cardiogenic, and distributive shock that is not hypovolemic in origin and has not responded to IV fluid bolus.
CONTRA-INDICATIONS	Hypersensitivity, tachy-dysrhythmias, generally contra-indicated in hypovolemia.
PRECAUTIONS	• Norepinephrine should be administered in a large, patent vein, i.e. the AC or larger. • Extravasation may lead to tissue necrosis. The IV line should be checked for patency prior to administration and monitored continuously. • Consider hypovolemia and treat this with appropriate fluids before administration of norepinephrine.
SIDE EFFECTS	Dizziness, palpitations, tachycardia, HTN, angina, nausea, vomiting, dyspnea, decreased urine output.
ADULT	**Mixing/Administration:** • Add one 4 mg ampule or vial to 500 ml of NS. • Administer using a 60gtts/ drip set. • Start infusion at 4 mcg/min or 30 gtts/min • Titrate until patient's systolic BP is > 90 mmHg. • Max dose is 12 mcg/min or 90 gtts/min

Mcg/min	4	8	12
Drops/min	30	60	90

NOREPINEPHRINE /LEVOPHED® 06/07/2022	[PARAMEDIC]
PEDIATRIC 	Not recommended for pediatric use without a pump. For use with pediatric patients – MD consult is required.
Key Points	• May cause hypertension. Monitor blood pressure every 5-10 minutes.

OLANZAPINE **05/04/2021**	[PARAMEDIC]
ACTIONS	1. Antipsychotic with anxiolytic properties. Designed to treat schizophrenia and bi-polar disorder. Acts as a short-term sedative for these patients. 2. Dopamine & serotonin (5-ht) antagonist, has anticholinergic, antihistamine & anti-alpha-adrenergic effects. 3. Onset of action is 15-30 minutes for peak but proven to have effect much sooner.
INDICATIONS	1. To treat cases of hallucinations or agitation in patients. 2. To use only on patients who present with no perceived threat to themselves or others and are willing to take an oral medication.
CONTRA-INDICATIONS	1. Pediatrics < 13 years of age. 2. Dementia related psychosis. 3. Pregnancy or breast feeding. 4. Hypersensitivity to olanzapine 5. History of Q-T prolongation.
PRECAUTIONS	1. Use caution in patients taking sleeping medication or opioids, as respiratory depression may occur. 2. Signs of olanzapine OD include slurred speech, confusion, tachycardia, syncope, uncontrolled muscle movements, and difficulty breathing.
SIDE EFFECTS	1. May prolong QT interval, obtain EKG prior to administration if known history or suspicion of prolonged QT interval. 2. May cause orthostatic hypotension or bradycardia. 3. May cause hyperglycemia when used in patients with diabetes.
ADULT	Adult agitated or experiencing hallucinations with no perceived threat to themselves or others. • 10 mg Oral Dissolving Tablet (ODT) PO.
PEDIATRIC 	Not indicated for pre-puberty pediatrics
KEY POINTS	Olanzapine can help treat mild cases of agitation in patient with schizophrenia and bipolar disorder

This page intentionally left blank

ONDANSETRON / ZOFRAN® **09/13/2022** [EMT-I, PARAMEDIC]	
ACTIONS	Antiemetic
INDICATIONS	Prevention and control of nausea and vomiting.
CONTRA-INDICATIONS	1. Known allergy 2. Patient is <one month of age
PRECAUTIONS	This medication may not work with severe nausea and vomiting
SIDE EFFECTS	1. Possible QT prolongation; 2. Headache; 3. Localized redness at injection site; 4. Dizziness/lightheadedness, 5. Drowsiness; 6. Hypoxia can occur rarely.
ADULT	**Acute Nausea:** • 4 mg PO/IM or slow IVP (over 1-2 min.) May repeat once in 5 min prn. Max total dose 8mg.
PEDIATRIC 	**Acute Nausea:** • For children age 4-11, 4 mg tab may be given PO. • IM administration: 0.1 mg/kg up to 4 mg. • IV administration: 0.1 mg/kg up to 4mg slow IVP (over 1-2 min.)
KEY POINTS	If severe vomiting is present, oral absorption may be ineffective.

This page intentionally left blank

OXYGEN ADMINISTRATION **09/13/2022**	[EMR,EMT,A-EMT,EMT-I,PARAMEDIC]
ACTIONS	Medical Gas
INDICATIONS	1. Suspected hypoxemia – SpO_2 < 94% or signs and symptoms such as cyanosis, tachycardia, tachypnea, diaphoresis, or confusion. 2. Respiratory distress 3. Obvious signs of heart failure 4. Carbon monoxide poisoning
CONTRA-INDICATIONS	None in the Emergency Setting
PRECAUTIONS	1. COPD patients use low flow oxygen initially (2L/min-3L/min) by nasal cannula but do not withhold additional oxygen from a patient who needs it. If possible, use capnography to guide ventilatory rates. 2. Do not hyperventilate the head injured patient. If possible, use capnography to guide ventilatory rates.
ADULT	The least invasive method of delivery should be used to keep patient's SpO_2 reading 94-98%*: NC ⟹ NRB ⟹ CPAP ⟹ BVM ⟹ SGA ⟹ ETI *For the following conditions, target the SpO_2 reading to the following: ACS: 90% Stroke: 95%-98% Post-cardiac arrest care/ trauma patient: 92%-98% **Passive Ventilation** Passive ventilation is used in CCR during the initial phase of resuscitation when there are not enough personnel to place an advanced airway. Passive ventilation is defined by the Medical Control Board as a Nasal Cannula and/or a NRB with high flow O_2 and a simple airway adjunct in place. **Nasal Cannula** 1. Used with O_2 flow of 2-6 liters/min. 2. Patients who would benefit from a cannula may include a. Mild respiratory distress, patient's with suspected ACS, CVA, or Shock, that present with mild hypoxemia **Non-Rebreather (NRB) Mask** 1. Used with O_2 flow of 10-15 liters/min.

OXYGEN ADMINISTRATION **09/13/2022** [EMR,EMT,A-EMT,EMT-I,PARAMEDIC]	
	2. NRB Masks are for severely ill patients with suspected/confirmed hypoxemia that cannot be managed with low flows from a cannula or those complaining of dyspnea who have adequate respiratory effort and can protect their own airway. Patient's with an unknown oxygen saturation and the following conditions should receive oxygen therapy a. Major trauma b. Shock c. Inhalation injury d. Exposure to toxins e. Altered consciousness f. ACS **Bag Valve Mask (BVM)** 1. Patients needing ventilatory support (for rate or volume) 2. Used with O_2 flow of 10-15 liters/min. 3. Requires secure face to mask seal. 4. Use of oropharyngeal or nasopharyngeal and/or chin tilt, jaw thrust maneuvers may be required. 5. Initiate PEEP at 5 cm H_2O – **See AIRWAY- PEEP Procedure** **CPAP –** *EMT, A-EMT, EMT-I, Paramedic Only* Refer to CPAP Protocol **Supraglottic Airway** – *EMT, A-EMT, EMT-I, Paramedic Only* Refer to Supraglottic Airway Protocol **Endotracheal Intubation** – *Paramedic Only* Refer to Endotracheal Intubation Protocol
PEDIATRIC *	The least invasive method of delivery should be used to keep patient's SpO_2 reading > 94% Blow-by ⟹ NC ⟹ NRB ⟹ BVM ⟹ SGA Most pediatric patients can be managed with basic oxygen delivery devices. If advanced devices are needed, contact medical control
KEY POINTS	1. Assist ventilations as needed. 2. Assess and manage airway as needed– see Airway Management Protocol 3. Suction as necessary – See Suctioning Protocol 4. Monitor pulse oximeter 5. If appropriate monitor end tidal CO_2

OXYTOCIN / PITOCIN® **05/03/2022**	[PARAMEDIC]
ACTIONS	Increases electrical and contractile activity in uterine smooth muscle.
INDICATIONS	Prophylactic to control bleeding after delivery of the fetus.
CONTRA-INDICATION	1. A second fetus is suspected. Administration with fetus in uterus can cause rupture of uterus and/or death of fetus.
PRECAUTIONS	1. Prior to its administration, the presence of a second fetus must be considered. 2. Administration should follow delivery of placenta whenever possible.
SIDE EFFECTS	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	**Post Delivery Hemorrhage Prophylaxis:** • 10 units added to 500ml NS, IV infusion. Titrate to administer over 30 Minutes. (167gtts/min) • **<u>If no vascular access:</u>** 10 units (1 ml) IM, • If additional orders are needed, contact Medical Control
KEY POINTS	Fundal massage may be an appropriate action with the administration of oxytocin to decrease postpartum hemorrhage.

This page intentionally left blank

PRALIDOXIME CHLORIDE / PROTOPAM, (2-PAM IN MARK 1 KIT) 09/13/2022 [PARAMEDIC]	
ACTIONS	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. (Atropine must always be administered concurrently to block the effect of acetylcholine)
INDICATIONS	Antidote for poisoning due to organophosphates or nerve gas. a. Mild symptoms - headache, nausea/vomiting, abdominal cramps, diarrhea. b. Moderate symptoms - generalized muscle weakness and twitching, slurred speech, pinpoint pupils, excessive secretions and shortness of breath. c. Severe symptoms - seizures, skeletal-muscle paralysis, respiratory failure and coma.
CONTRA-INDICATION	Known allergy to the medication
PRECAUTIONS	Pralidoxime is a relatively short acting drug, repeat dosing may be necessary.
SIDE EFFECTS	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	**Organophosphate / Nerve Gas exposure:** Moderate symptoms - 2 Autoinjectors or (1200 mg) Severe Symptoms - 3 Autoinjectors or (1800 mg)
PEDIATRIC 	**Organophosphate / Nerve Gas exposure: MD order** 25 to 50 mg/kg given slowly IVP (no more than 0.1 cc/min)
KEY POINTS	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.

This page intentionally left blank

PROCHLORPERAZINE/ COMPAZINE **09/13/2022** [PARAMEDIC]	
ACTIONS	Anti-emetic-blocks dopamine receptors in the brain and vagus nerve in the GI tract.
INDICATIONS	Nausea and vomiting
CONTRA-INDICATIONS	1. Known adverse reaction/allergy to phenothiazines (i.e. 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 (i.e. 5mg)
SIDE EFFECTS	1. Extrapyramidal reactions-often can be effectively treated with diphenhydramine. 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; 6. Dry mouth 7. Blurred vision
ADULT	**Anti-Emetic:** 5-10 mg IV over 2 minutes, or IM
PEDIATRIC	Not recommended for pediatric use.
KEY POINT	If severe hypotension occurs, treat the patient with norepinephrine.

This page intentionally left blank

PROMETHAZINE THEOCLATE/ PHENERGAN® 09/13/2022	[PARAMEDIC]
ACTIONS	Antiemetic
INDICATIONS	Nausea/Vomiting
CONTRA-INDICATION	Known allergy to promethazine
PRECAUTION	When given IV, may cause severe irritation to the vein.
SIDE EFFECTS	Sedation, confusion, sleepiness, dizziness, disorientation, drowsiness, blurred vision, N&V, dry mouth
ADULT 	**Antiemetic:** • 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 yo Children older than 2 yo by **MD order**
KEY POINTS	Prior to administration, make sure IV is patent. Flush after to reduce irritation to vein.

This page intentionally left blank

PROPARACAINE HCL / ALCAINE® **09/13/2022**	[PARAMEDIC]
ACTIONS	Topical ophthalmic anesthetic
INDICATIONS	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	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.

This page intentionally left blank

ROCURONIUM / ZEMURON® **09/13/2022** [PARAMEDIC]	
ACTIONS	Non-depolarizing paralytic
INDICATIONS	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.
CONTRA-INDICATIONS	Known allergy to rocuronium. Children < 1 year.
PRECAUTIONS	Use with caution in patients with liver disease
SIDE EFFECTS	May cause Q-T prolongation
ADULT	**Paralytic for dialysis pt. and/or pt. w/ wide QRS:** • 1 mg/kg IV or IO • Maintenance dose: 0.1-0.2 mg/kg IV/IO bolus as paralysis wears off, if sedation with midazolam and fentanyl is not adequate. **Maintain Paralysis MD order** see dosing as above
PEDIATRIC	**Paralytic: MD order** • 1 mg/kg IV or IO for paralysis. • Maintenance dose: 0.1-0.2 mg/kg IV or IO bolus every 30 minutes if sedation with midazolam and fentanyl is not adequate.
KEY POINTS	1. Has no effect on consciousness or pain threshold. 2. Administration of succinylcholine may prolong paralytic effect. 3. Pediatric patients may require larger doses of rocuronium, when calculated on a weight basis.

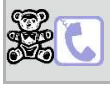
This page intentionally left blank

SODIUM BICARBONATE **09/13/2022**	[PARAMEDIC]
ACTIONS	1. Acid buffer 2. Decreases circulating potassium level in the blood
INDICATIONS	1. Cardiac arrest or dysrhythmias due to hyperkalemia. 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).
CONTRA-INDICATIONS	None in the emergency setting
PRECAUTIONS	Should not be given in mixture with epinephrine, norepinephrine, dopamine, or calcium.
SIDE EFFECTS	1. Metabolic alkalosis 2. Headache 3. Nausea and vomiting 4. May exacerbate hypernatremia
ADULT	**Cardiac arrest with suspected hyperkalemia or suspected TCA Overdose:** 1 mEq/kg or 50 mEq (50 ml) IVP • VF/Pulseless VT give after 1 shock & first Epi • Asystole/PEA give after first dose of Epi **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

SODIUM BICARBONATE **09/13/2022**	[PARAMEDIC]
PEDIATRIC 	When administered to pediatric patients <1 year of age, should be diluted 1:1 with NS. **Cardiac arrest with suspected hyperkalemia or suspected TCA Overdose:** 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
KEY POINTS	Extravasation of sodium bicarbonate has been known to cause cellulitis, make sure there is a patent IV line, prior to and after administration.

SUCCINYLCHOLINE / ANECTINE®, QUELICIN® **09/13/2022** [PARAMEDIC]	
ACTIONS	Short acting depolarizing paralytic
INDICATIONS	Temporary paralysis for endotracheal intubation
CONTRA-INDICATIONS	1. Known allergy to succinylcholine. 2. Documented hyperkalemia from physician's office and EKG changes (peaked T-waves and QRS widening.) 3. Suspected hyperkalemia: • 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: • 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	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	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	**RSI:** • 2 mg/kg IVP/IO, Max Dose 200mg. **Post Intubation Paralysis:** • Initial dose may be repeated once

SUCCINYLCHOLINE / ANECTINE®, QUELICIN® 09/13/2022 [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 cerebration.

TRANEXAMIC ACID/TXA 05/03/2022	[PARAMEDIC]
ACTIONS	1. Tranexamic Acid is a fibrinolytic inhibitor, preventing the breakdown of blood clots. 2. Function: To help stabilize clot formation and decrease bleeding associated with traumatic hemorrhagic shock.
INDICATIONS	1. Isolated Traumatic Brain Injury with GCS ≤12 **OR** 2. Suspected hemorrhagic shock in a trauma patient with mechanism **AND** 3. Systolic BP < 90mmHg **AND** 4. Injury occurred less than 3 hours. 5. For post-partum hemorrhage
CONTRA INDICATION	1. Pediatric patients less than 12 years old. 2. Time since injury exceeds 3 hours. 3. Patients with known, active intravascular clotting (**DVT** or **PE**). 4. Hypotension and/or shock due to non-hemorrhagic, non-traumatic causes -p
PRECAUTIONS	TXA administration is time-sensitive, and therefore should be given within the first hour of injury, when possible, for the most benefit. Administration past three hours can have negative effects, and be potentially harmful.
SIDE EFFECTS	1. **Serious Reaction**: Vision change, thromboembolism, ureteral obstruction, seizure, hypotension, hypersensitivity reaction. 2. **Common Reaction**: nausea, vomiting, diarrhea, giddiness, dizziness.
ADULT	TXA Bolus (IV/IO): Mix 1 gram in 100ml of NS and infuse over 10 minutes before other IV fluids if possible.
PEDIATRIC 	This medication is not indicated for pediatric use without consulting on-line medical control.

TRANEXAMIC ACID/TXA **05/03/2022**	[PARAMEDIC]
KEY POINTS	Document the following: 1. Any noted side effects; 2. Dose, amount of medication, route of administration and indication for use; 3. Any change in patient physical assessment, clinical presentation and vital signs.

ZIPRAZADONE/GEODON **09/13/2022**	[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. • These are not life threatening and generally do not require treatment.
ADULT	**Chemical Sedation:** *Threat to self or others:* 10-20 mg geodon (IM Only) concomitantly with diphenhydramine and midazolam *Agitated with no perceived threat:* 10-20 mg IM concomitantly with diphenhydramine after midazolam administration
PEDIATRIC 	**MD Contact Required**
KEY POINTS	Reconstitution: Add Sterile Water for Injection 1.2 mL and shake vigorously until completely dissolved. 1 mL = 20mg of ziprasidone

This page intentionally left blank