Whitman County Drug Appendix

2020

Version 3.0

DRUG APPENDIX

Adenosine (Paramedic)

Other Names: Adenocard

Class: Anti-dysrhythmic

Indications: Paroxysmal supraventricular tachycardia when vagal maneuvers are unsuccessful.

Contraindications: Wide complex tachycardia, 2nd and 3rd degree heart blocks, sick sinus syndrome. Caution in patients with asthma and COPD

Precautions: Severe bradycardia, VF, VT, atrial fibrillation, asystole, bronchospasm, unstable angina

Route: Rapid IV bolus followed by 10 ml NS flush

Suggested Dosage: ***Adult:*** 6 mg; 12 mg 2nd dose if first is ineffective.

Pediatric: 0.1 mg/kg; 0.2 mg/kg 2nd dose if first is ineffective.

Notes: Pediatric dose should not exceed adult dose.

Albuterol (*Paramedic / AEMT / EMT / ^EMR)

Other Names:	Proventil, Ventolin
Class:	Adrenergic beta-2 agonist
Indications:	Treatment of moderate to severe bronchospasm. *Signs and symptoms of hyperkalemia.
Contraindications:	None
Precautions:	Arrhythmias, tachycardia, chest discomfort
Route:	Nebulized, Metered Dose Inhaler
Suggested Dosage:	***Adult:*** 2.5 mg ***Pediatric:*** 2.5 mg

Notes: *Albuterol for treatment of hyperkalemia is a **Paramedic** treatment and should be done with continuous cardiac monitoring.

^ **EMR** allowed to assist with patients prescribed metered dose inhaler with specialized training.

^ *Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD.*

Amiodarone (Paramedic)

Other Names: Cordarone

Class: Anti-dysrhythmic

Indications: VF or VT

Contraindications: Second and third-degree AV block

Precautions: None

Route: IV, IO

Suggested Dosage: ***Adult:*** 300 mg 1st dose, 150 mg 2nd dose,
IV Drip: 150 mg over 10 min

Pediatric: Follow PALS

Notes:

Aspirin (Paramedic / AEMT / EMT / *EMR)

Other Names:	Acetylsalicylic Acid
Class:	Anti-platelet, NSAID, antipyretic
Indications:	Signs and /or symptoms of acute coronary syndrome
Contraindications:	Hypersensitivity
Precautions:	None
Route:	PO chewed
Suggested Dosage:	**Adult:** 324 mg = 4 Aspirin **Pediatric:** Not indicated

Notes: Drug is to be used as soon as MI is suspected.

*EMR allowed to give aspirin PO with specialized training.

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Atropine (Paramedic)

Other Names:	Generic
Class:	Anticholinergic parasympatholytic
Indications:	Symptomatic bradycardia. Organophosphate poisoning. Cholinergic poisoning (e.g. mushrooms)
Contraindications:	HR: greater thank 180
Precautions:	Tachycardia, nausea, ventricular ectopy
Route:	IV, IO
Suggested Dosage:	*Bradycardia* ***Adult:*** 0.5 - 1 mg IV q 3-5 min up to 0.04 mg/kg or 3 mg ***Pediatric:*** 0.02 mg/kg (minimum 0.1 mg) may repeat once *Organophosphate & Cholinergic poisoning* **Adult & Pediatric:** See ***Cholinergic Poisoning***

Notes:

Atrovent (Paramedic / AEMT/ *EMT)

Other Names:	Ipratropium Bromide
Class:	Anticholinergic. Blocks the muscarinic acetylcholine receptors in the smooth muscles of the bronchi in the lungs.
Indications:	Initial treatment of moderate to severe bronchospasm administered with albuterol.
Contraindications:	None
Precautions:	Arrhythmias, tachycardia, chest discomfort
Route:	Nebulized
Suggested Dosage:	***Adult:*** 2.5 mg diluted to 3 ml with NS ***Pediatric:*** ≥ 2 years old, 1.5 mg < 2 years old, 0.75 mg

Notes:

***EMT** limited to anticholinergics and beta agonist/bronchodilator with specialized training.

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Calcium Gluconate (Paramedic)

Other Names:	Generic
Class:	Mineral and electrolyte replacement / supplement.
Indications:	Treatment of hyperkalemia, hypermagnesemia, and calcium channel blocker agent toxicity.
Contraindications:	Hypercalcemia
Precautions:	Patients receiving digoxin (digitalis glycosides)
Route:	IV, IO
Suggested Dosage:	***Adult:*** 2 grams over 2 min, repeat every 10 min ***Pediatric:*** 20 mg/kg over 2 min

Notes: Monitor vital signs and ECG frequently. May cause vasodilation with resulting hypotension, bradycardia, arrhythmias. Use a large, secure vein; subcutaneous infiltration can cause tissue necrosis.

Dextrose (Paramedic / AEMT)

Other Names: D50W

Class: Caloric

Indications: Symptomatic hypoglycemia

Contraindications: Hyperglycemia

Precautions: None

Route: IV, IO

Suggested Dosage: ***Adult:*** 25 grams Dextrose 50%

Pediatric: 2 ml/kg Dextrose 25% (D25 = dilute D50 1:1 with sterile water or saline)

Neonate: 2 ml/kg Dextrose 10% (D10 = dilute D50 1:4 with sterile water or saline)

Notes:

Diltiazem (Paramedic)

Other Names: Cardizem

Class: Calcium Channel Blocker

Indications: Supraventricular tachy-dysrhythmias, rapid ventricular rates in atrial flutter or fibrillation.

Contraindications:
- Hypersensitivity
- Sick Sinus Syndrome
- 2nd, 3rd degree AV block (unless artificial peacemaker is in place)
- Recent MI or Pulmonary blockage
- Systolic BP < 90 mm/hg

Precautions: Sever Hepatic and renal impairment

Route: IV, IO

Suggested Dosage:
Adult: 0.25 mg/kg over 2 min, 2nd dose in 15 min of 0.35 mg/kg over 2 min. Maintenance infusion (5-15 mg/hour) for up to 24 hrs.

Pediatric: Not indicated

Notes:

Diphenhydramine (Paramedic / *AEMT / ^EMT)

Other Names:	Benadryl®
Class:	Antihistamine
Indications:	Anaphylaxis, allergic reaction, dystonia, akathisia caused by droperidol
Contraindications:	Anticholinergic poisoning, hypersensitivity
Precautions:	None
Route:	IM, IV, IO, PO
Suggested Dosage:	***Adult:*** 25-50 mg
	Pediatric: 1 mg/kg maximum dose 50mg

Notes:

*AEMT limited to IV, PO, IM with specialized training.

^EMT limited to PO with specialized training.

** ^ Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD.*

Epinephrine (*PARA / ^AEMT / "EMT / #EMR)

Other Names: Adrenalin®

Class: Sympathomimetic

Indications: Anaphylaxis, *bradycardia, *hypotension, *severe bronchospasm, *cardiac arrest.

Contraindications: None

Precautions: May cause cardiac ischemia in the elderly or patients with known cardiac disease

Route: Nebulized, IM, IV, IO, ETT.

Suggested Dosage:

Adult:

Anaphylaxis: 0.3 mg 1:1,000;

- 0.01mg/kg 1:1,000 max 0.5 mg; repeat as needed.
- Hypotension: 2-10 mcg/min
- ^ Cardiac Arrest: AHA guidelines
- Bradycardia: AHA guidelines

Pediatric:

Anaphylaxis: 0.15 mg 1:1,000;

- 0.01mg/kg 1:1,000; max 0.5 mg; repeat as needed
- ^ Cardiac Arrest: AHA guidelines

Notes:

* **Paramedic** level treatment.

^ **AEMT** limited to epinephrine for cardiac arrest with specialized training.

" **EMT** allowed to give IM auto-injector, IM with syringe and needle requires specialized training.

EMR is only permitted to use epinephrine auto-injector.

^ " *Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD.*

Fentanyl Citrate (Paramedic)

Other Names:	Fentora, Astiq, Duragesic, Abstral
Class:	Narcotic analgesic
Indications:	Severe pain
Contraindications:	Hypersensitivity
Precautions:	Consider lower doses in patients with evidence of alcohol use, elderly, or chronically ill patients.
Route:	IV, IO, IM, IN
Suggested Dosage:	***Adult:*** 0.5-1 mcg/kg, repeat every 10 minutes as needed. (Maximum dose 200 mcg) ***Pediatric:*** 1 mcg/kg, repeat every 10 minutes as needed.

Notes:

Glucagon (Paramedic / AEMT)

Other Names:	GlucaGen
Class:	Endocrine
Indications:	Hypoglycemia with an inability to establish IV access. Calcium channel blocker toxicity and beta blocker toxicity.
Contraindications:	None
Precautions:	Patients who receive glucagon should be transported and receive repeat blood glucose measurement.
Route:	IM
Suggested Dosage:	***Adult:*** 1 mg ***Pediatric:*** 0.1 mg/kg, Max dose of 1 mg

Ketamine (Paramedic)

Other Names: Ketalar

Class: Non-barbiturate anesthetic

Indications: Primarily for hypotensive patients requiring sedation, as an inductions agent for patients during RSI, as an adjunct to opioids for uncontrolled pain and for treatments of excited delirium.

Contraindications: Avoid in patients with brain masses, hydrocephalus, acute globe injury, psychotic mental health disorder such as schizophrenia or when significant elevations in BP might prove harmful (e.g., aortic dissection, acute myocardial infarction, angina).

Precautions: Emergence syndrome:

Patients who receive Ketamine may experience delusions, hallucinations and “out of body” experiences that may last up to 3 hours. May be treated reassurances and benzodiazepines if needed.

Route: IM, IV, IO

Suggested Dosage: ***Sedation:*** 1mg/kg SIVP. Repeat 0.5 mg/kg every 10-15 minutes.

Induction: 2 mg/kg SIVP

Analgesic: 0.1-0.3 mg/kg SIVP

IM sedation: 4 mg/kg IM

Notes: If possible, give concurrent dose of Lorazepam or Midazolam to blunt emergence phenomenon.

Oral Glucose (Paramedic / AEMT / EMT / *EMR)

Other Names:	Glutose®, Insta-glucose®
Class:	Caloric
Indications:	Patient with an altered mental status and a known history of diabetes.
Contraindications:	Unconscious patients or unable to swallow
Precautions:	Use caution to prevent aspiration
Route:	PO
Suggested Dosage:	***Adult:*** 10-15 grams
	Pediatric: 10-15 grams

Notes: Ask the patient to swallow before administration to make sure they are capable.

***EMR** allowed to give with specialized training.

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Haloperidol (Paramedic)

Other Names: Haldol®

Class: Antipsychotic

Indications: Sedation of combative or violent patients

Contraindications: Known ingestion of CNS depressants, angle closure glaucoma, severe liver disease.

Precautions: May cause QT prolongation, extrapyramidal side effects, muscle stiffness, akathisia.

Route: Slow IV, IM

Suggested Dosage: ***Adult:*** 5-10 mg

Pediatric: Not indicated

Notes:

Labetalol (Paramedic)

Other Names:	Trandate
Class:	Antihypertensive
Indications:	Hypertension, Pressure control in stroke,
Contraindications:	Uncompensated heart failure, pulmonary edema, cardiogenic shock, heart block.
Precautions:	Renal impairment, Hepatic impairment, diabetes (can cause hypoglycemia)
Route:	IV
Suggested Dosage:	***Adult:*** contact Medical Control
	Pediatric: contact Medical Control

Notes: Labetalol is for interfacility transfers as ordered by sending physicians. Labetalol should be acquired from sending facility at time of transfer.

Lidocaine 2% (Paramedic)

Other Names:	Xylocaine®
Class:	Anti-dysrhythmic
Indications:	Pulseless VF/VT, stable VT, frequent PVC's, after IO insertion for awake patients.
Contraindications:	Narrow complex SVT, heart block, WPW, a-fib with RVR.
Precautions:	None
Route:	IV
Suggested Dosage:	***Adult:*** 1-1.5 mg/kg every 5-10 minutes, maximum total dose of 3mg/kg ***Infusion:*** Maintenance drip 2-4 mg/minute ***IO insertion:*** 20-50 mg before flush ***Pediatric:*** 1 mg/kg IV every 5-10 minutes, maximum total dose of 3mg/kg
Notes:	

Lorazepam (Paramedic)

Other Names:	Ativan®
Class:	Benzodiazepine
Indications:	Seizure, sedation, anxiety
Contraindications:	Myasthenia gravis
Precautions:	May cause hypotension
Route:	IV, IM, IO, IN
Suggested Dosage:	***Adult:*** 1-2 mg, repeat every 5 minutes as needed
	Elderly: 0.5-1 mg, repeat every 5 minutes, not to exceed total dose of 2 mg.
	Pediatric:0.05-0.1 mg/kg

Notes: Use with caution when treating elderly patients.

Magnesium Sulfate (Paramedic)

Other Names: Generic

Class: Mineral

Indications: Pre-eclampsia, eclampsia, Torsades des Points, hypomagnesemia, refractory VF/VT.

Contraindications: Heart block, patients treated with paralytic agents.

Precautions: Observe for hypotension, loss of deep tendon reflexes, CNS depression, pulmonary edema and paralysis.

Route: IV, IO

Suggested Dosage: ***Adult:*** Eclampsia: 6 grams over 10 min.
Toresades des Points: 2 grams over 5 min.
Bronchodilations: 2 grams over 5 min.

Pediatric: 25-50 mg/kg over 5 minutes, max 2 grams.

Notes:

Metoprolol (Paramedic)

Other Names:	Lopressor, Toprol-XL
Class:	Antihypertensive
Indications:	Hypertension
Contraindications:	Uncompensated heart failure, pulmonary edema, cardiogenic shock, heart block, bradycardia.
Precautions:	Renal impairment, hepatic impairment, can cause hypoglycemia in diabetics.
Route:	PO, IV, IO
Suggested Dosage:	***Adult:*** 5-10 mg
	Pediatric: Not indicated

Notes: Metoprolol is for interfacility transfers as ordered by sending physician. Metoprolol should be acquired from sending facility at time of transfer.

Midazolam (Paramedic)

Other Names: Versed®

Class: Benzodiazepine

Indications: Seizures, sedation, induction for endotracheal intubation.

Contraindications: Hypoglycemia, Hypersensitivity

Precautions: May cause CNS depression, hypotension, CNS depressive effects potentiated by administration of opioids.

Route: IV, IM, IO

Suggested Dosage:

Adult: Induction: 0.1-0.3mg/kg max dose 20mg
Sedation: 1-3 mg
Infusion: 1-2 mg/hr titrated in 1 mg/hr increments every 15 minutes as needed. Max 10 mg/hr.

Pediatric: Induction: 0.1-0.3mg/kg, max 20 mg
Sedation: 0.05-1mg/kg max 3 mg.

Notes: Use lower dose in elderly population.

Morphine Sulfate (Paramedic)

Other Names:	Generic
Class:	Narcotic analgesic
Indications:	Treatment of pain, potentiation of benzodiazepine.
Contraindications:	Hypotension, hypersensitivity.
Precautions:	May cause hypotension and CNS depression.
Route:	IV, IO, IM
Suggested Dosage:	***Adult:*** 2-5 mg, repeat every 10 minutes as needed. Not to exceed max total dose of 20 mg. ***Pediatric:*** 0.1-0.2 mg/kg, repeat every 10 minutes as needed. Not to exceed individual adult dose or max total dose of 20 mg.
Notes:	

Naloxone (PARA / AEMT / *EMT / ^EMR)

Other Names:	Narcan®
Class:	Opiate antagonist
Indications:	Opiate overdose
Contraindications:	Neonate with possible drug dependence
Precautions:	May cause nausea
Route:	IV, IO, IM, IN
Suggested Dosage:	***Adult:*** 0.4-2 mg, repeat as needed
	Pediatric: 0.1 mg/kg, not to exceed adult dose

Notes:

***EMT** allowed to give IN, IM - Auto-injector and (IM- syringe and needle with specialized training.)

^EMR allowed to give IN - MAD device & auto-injector.

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Nitroglycerin (Paramedic / *AEMT / #EMT)

Other Names: Nitrotab®, Nitrostat®, Tridill®

Class: Vasodilator, Anti-anginal

Indications: Chest discomfort from acute coronary syndrome hypertensive pulmonary edema, congestive heart failure.

Contraindications: Patients taking phosphodiesterase inhibitors (e.g. Viagra, Cialis, or Levitra in the past 48 hours) SBP less than 100.

Precautions: Hypotension, may cause headache.

Route: Sublingual, IV, IO, Transdermal.

Suggested Dosage: ***Adult:*** Tablet: 0.4 mg, repeat every 3-5 minutes for maximum of three doses.

Infusion: Start at 10mcg/min, titrate every 5 minutes as indicated maintaining systolic blood pressure above 100.

Pediatric: If indicated contact medical control for dosing.

Notes: *AEMT can only administer sublingual tablets and transdermal.
#EMT basic can assist with patient's prescription.

Norepinephrine (Paramedic)

Other Names:	Levophed
Class:	Vasopressor
Indications:	Produce vasoconstriction and myocardial stimulation; which may be required after adequate fluid replacement in the treatment of severe hypotension and shock.
Contraindications:	Hypoxia, hypercarbia, hypotension secondary to hypovolemia.
Precautions:	Hypothyroidism, cardiovascular disease, can decrease uterine blood flow.
Route:	IV, IO
Suggested Dosage:	***Adult:*** 0.5-30 mcg/min; titrate every 5 minutes as indicated. ***Pediatric:*** 0.5-2 mcg/min; titrate every 5 minutes to max dose 30 mcg/min.
Notes:	

Ondansetron (Paramedic / *AEMT / ^EMT)

Other Names:	Zofran®
Class:	Antiemetic
Indications:	Treatment of nausea, motion sickness
Contraindications:	Hypersensitivity, QTC greater than 450
Precautions:	Caution in liver dysfunction
Route:	PO, IV, IO, IM
Suggested Dosage:	***Adult:*** 4 mg, may repeat once.
	Pediatric: 0.1 mg/kg, max 4 mg.

Notes:
***AEMT** may give IV, PO, IM
^EMT may give PO with specialized training

^Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD.

Oxygen (PARA / AEMT / EMT / EMR)

Class: Gas

Indications: Indication of hypoxic state, shock, cardiac or pulmonary.

Contraindications: COPD consider giving a lower percentage of oxygen

Precautions: Respiratory arrest in patients with hypoxic drive.

Route: Oxygen therapy using non-rebreather mask(NRB) 10-15 lpm, titrate to SpO2 94%.

Oxygen therapy using nasal cannula(NC) 2-6 lpm, titrate to SpO2 94%.

Oxygen therapy using bag valve mask(BVM) 15 lpm, titrate to SpO2 94%

Notes:

Racemic Epinephrine (Paramedic)

Other Names: Racepinephrine

Class: Sympathomimetic

Indications: Croup with stridor that is non-responsive to humidified air.

Contraindications: Hypersensitivity

Precautions: None

Route: Nebulized

Suggested Dosage: ***Pediatric:*** 0.5mL of 2.25% solution added to 2.5mL normal saline. May repeat every 20-30 min.

Notes:

Rocuronium Bromide (Paramedic)

Other Names:	Zemuron®
Class:	Non-depolarizing neuromuscular
Indications:	Procedural paralysis for endotracheal intubation.
Contraindications:	Hypersensitivity
Precautions:	Ensure adequate sedation prior to and during use.
Route:	IV, IO, IM
Suggested Dosage:	***Adult:*** 1 mg/kg ideal body weight; repeat dose 0.3-0.5 mg/kg every 30 minutes ***Pediatric:*** Same as adult

Notes: Duration of action 30-60 minutes.
Avoid repeat neuromuscular blockade administration through focus on sedation and analgesia for ventilated patient.

Sodium Bicarbonate (Paramedic)

Other Names: Generic

Class: Electrolyte (base)

Indications: Tricyclic antidepressant overdose, metabolic acidosis, hyperkalemia, diphenhydramine overdose, dialysis patients in cardiac arrest.

Contraindications: Hypertension, hypertensive pulmonary edema.

Precautions: Administer slowly

Route: IV, IO

Suggested Dosage: ***Adult:*** 1 mEq/kg

Pediatric: 1 mEq/kg

Notes:

Succinylcoline (Paramedic)

Other Names:	Anectine®, Quelicin®
Class:	Depolarizing neuromuscular blocker
Indications:	Intubation in patients with intact gag reflex or whose degree of pharyngeal muscle tone prevents intubation.
Contraindications:	Known hyperkalemia, history of malignant hyperthermia, narrow angle glaucoma.
Precautions:	Anticipated difficult airway, neuromuscular disorders (e.g. myasthenia gravis, muscular dystrophy, stroke, paraplegia, burns greater than 48 hours post incident.)
Route:	IV, IO, IM
Suggested Dosage:	***Adult:*** 1-2 mg/kg IV/IO, 4 mg/kg IO. ***Pediatric:*** 2 mg/kg IV/IO, 4 mg/kg IO.

Notes:

Tranexamic Acid (Paramedic)

Other Names: TXA

Class: A lysine analog that occupies binding sites on the plasminogen molecule, competitively inhibiting plasminogen activation, causing delayed breakdown of platelet aggregation.

Indications: Hemorrhagic shock in the setting of trauma.

Contraindications: Injury greater than 3 hours old, Subarachnoid hemorrhage.

Precautions: Rapid administration may contribute to hypotension.

Route: Slow IV/IO push

Suggested Dosage: ***Adult:*** 1 g slow IV/IO push over 10-20 minutes

Pediatric: 10 mg/kg slow IV/IO over 10-20 minutes

Notes:

DRUG APPENDIX: Revisions/Updates

Pg. 2 Aspirin dosage changed from 162 mg to 324 mg and added authorizations to: EMR can give PO.

Pg. 4 Albuterol added EMR allowed to assist with patients prescribed metered dose inhaler with specialized training.

Pg. 5 Amiodarone, PARA for Peds: follow PALS.

Pg. 10 Diphenhydramine, Adult/Peds: 1 mg/kg, Max dose 50 mg, AEMT limited to IV, PO, IM with specialized training. EMT limited to PO with specialized training.

Pg. 11 Epinephrine added authorizations to: AEMT limited to epinephrine for cardiac arrest, EMT allowed to give IM auto-injector, IM with syringe and needle and EMR is only permitted to use epinephrine auto-injector.

Pg. 15 Oral Glucose added authorizations to: EMR allowed to give with specialized training.

Pg. 17 Ipratrpium Bromide (Atrovent) added authorizations to: EMT limited to anticholinergics and beta agonist/bronchodiliator with specialized training.

Pg. 25 Naloxone added authorizations to: EMT allowed to give with IN, auto-injector and with (specialized training IM - syringe and needle.) and EMR allowed to give IN - MAD device & auto-injector.

Pg. 26 Nitroglycerin, added transdermal as route for AEMT

Pg. 27, Norepinephrine, Removal of "kg" to read mcg/min.

Pg. 28 Ondansetron added authorizations to: AEMT limited to IV, PO, IM with specialized training and EMT limited to PO with specialized training.

Pg. 34, Tranexamic Acid, PARA Addition of new drug.

January 2020

REVISIONS