2011 Key Pediatric Acute Care Medications

A

Drug	Indications/Dosage
Adenosine	**SVT** 0.1 mg/kg IV/IO rapid push (max 6 mg), 2nd dose 0.2 mg/kg IV/IO rapid push (max 12 mg)
Albumin	**Shock, Trauma, Burns** 0.5 to 1 g/kg (10 to 20 mL/kg of 5% solution) IV/IO rapid infusion
Albuterol	**Asthma, Anaphylaxis (bronchospasm), Hyperkalemia** • MDI: 4 to 8 puffs INH q 20 minutes PRN with spacer (OR ET if intubated) • Nebulizer: 2.5 mg/dose (wt <20 kg) OR 5 mg/dose (wt >20 kg) INH q 20 minutes PRN • Continuous nebulizer: 0.5 mg/kg per hour INH (max 20 mg/h)
Aminophylline	**Treatment of Phosgene induced pulmonary edema (off label - anecdotal evidence)** Aminophylline 5- 6 milligrams/kilogram IV loading dose over 20 minutes (lean ideal body weight) followed by • Neonates: 0.2 mg/kg/hr • Infants 6 wk - 1 yr: mg/kg/hr = (0.008) x (age in weeks) + 0.21 • 1-9 yr: 1-1.2 mg/kg/hr • 9-12 yr and young adult smokers: 0.9 mg/kg/hr • >12 yr health nonsmokers: 0.7

	mg/kg/hr • The total daily dose may also be administered IV divided Q4- 6 hr • See Harriet Lane Handbook for level monitoring information • Maintain a serum level of 10 to 20 micrograms/milliliter (neonates 7.5 micrograms/milliliter). See Phosgene - Emergency Department/Hospital Management Treatment section for off label dosing recommendations
Amiodarone	**SVT, VT (with pulses)** 5 mg/kg IV/IO load over 20 to 60 min (max 300 mg), repeat to daily max 15 mg/kg (or 2.2 g) **Pulseless Arrest (ie, VF/pulseless VT)** 5 mg/kg IV/IO bolus (max 300 mg), repeat to daily max 15 mg/kg (or 2.2 g)
Amyl Nitrite	**Antidote for Cyanide Toxicity** Amyl nitrite perle should be broken onto a gauze pad and heal under the nose, placed under the lip of a facemask, or over the Ambu-valve intake. The patient should inhale for 30 seconds of each minute and a new perle should be utilized every three minutes if sodium nitrite infusions will be delayed. Amyl nitrite is not FDA-approved. See Hydrogen Cyanide - Prehospital Management and Hydrogen Cyanide - Emergency Department/Hospital Management Treatment section for cyanide

	specific dosing recommendations
Atropine Sulfate	**Bradycardia (symptomatic)** • 0.02 mg/kg IV/IO (min dose 0.1 mg, max single dose child 0.5 mg, max single dose adolescent 1 mg), may repeat dose once, max total dose child 1 mg, max total dose adolescent 2 mg • 0.04 to 0.06 mg/kg ET **Toxins/Overdose (eg, organophosphate, carbamate)** 0.02 to 0.05 mg/kg (<12 years) OR 0.05 mg/kg (>12 years) IV/IO initially, repeat q 20 to 30 min until atropine effect (dry mouth, tachycardia, mydriasis) is observed or symptoms reverse See Nerve Agents - Prehospital Management and Nerve Agents - Emergency Department/Hospital Management Treatment section for nerve agent specific dosing recommendations

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C

Drug	Indications/Dosage
Calcium Chloride 10%	**Hypocalcemia, Hyperkalemia, Hypermagnesemia, Calcium Channel Blocker Overdose** Dosing for non-life-threatening situations, refer to Harriet Lane Handbook, or DailyMed

	for dosing recommendations **Cardiac Arrest or Severe Hypotension** 20 mg/kg (0.2 mL/kg) IV/IO slow push during arrest or if severe hypotension, repeat PRN

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D

Drug	Indications/Dosage
Dexamethasone	**Croup** 0.6 mg/kg PO/IM/IV (max 16 mg)
Dextrose (Glucose)	**Hypoglycemia** 0.5 to 1 g/kg IV/IO (D25W 2 to 4 mL/kg; D10W 5 to 10 mL/kg)
Diazepam	**Prolonged Seizures/Status Epilepticus** Neonate - 0.3-0.75 mg/kg/dose IV Q 15-30 min x 2-3 doses • IV -1 month – 0.2-0.5 mg/kg/dose Q 15-30 min, max total dose <5 yr : 5mg, ≥5 yr 10 mg • IM - 0.2 -0.5 mg, repeat Q 2-5 minutes x 2, max total dose <5 yr : 5mg, ≥5 yr 10 mg • Rectal Gel 2-5 yr: 0.5 mg/kg/dose 6-11 yr: 0.3 mg/kg/dose • 12yr: 0.2 mg/kg/dose May repeat in 4-12 hrs prn See Nerve Agents - Prehospital Management

	and Nerve Agents - Emergency Department/Hospital Management Treatment section for nerve agent specific dosing recommendations
Diphenhydramine	**Anaphylactic Shock** 1 to 2 mg/kg IV/IO/IM q 4 to 6 hours (max 50 mg)
Dobutamine	**Congestive Heart Failure, Cardiogenic Shock** 2 to 20 µg/kg per minute IV/IO infusion; titrate to desired effect
Dopamine	**Cardiogenic Shock, Distributive Shock** 2 to 20 µg/kg per minute IV/IO infusion; titrate to desired effect

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E

Drug	Indications/Dosage
Epinephrine	**Pulseless Arrest, Bradycardia (symptomatic)** • 0.01 mg/kg (0.1 mL/kg) 1:10,000 IV/IO q 3 to 5 minutes (max 1 mg; 1 mL) • 0.1 mg/kg (0.1 mL/kg) 1:1000 ET q 3 to 5 minutes **Hypotensive Shock** 0.1 to 1 µg/kg per minute IV/IO infusion (consider higher doses if needed) **Anaphylaxis**

	• 0.01 mg/kg (0.01 mL/kg) 1:1000 IM in thigh q 15 minutes PRN (max 0.5 mg) OR • Auto-injector 0.3 mg (wt ≥30 kg) IM or Child Jr Auto-injector 0.15 mg (wt 10 to 30 kg) IM • 0.01 mg/kg (0.1 mL/kg) 1:10,000 IV/IO q 3 to 5 minutes (max 1 mg) if hypotension • 0.1 to 1 µg/kg per minute IV/IO infusion if hypotension despite fluids and IM injection **Asthma** 0.01 mg/kg (0.01 mL/kg) 1:1000 SQ q 15 minutes (max 0.5 mg; 0.5 mL) **Croup** Racemic epinephrine solution (2.25%) • <4 yr: 0.05 mL/kg/dose up to a max of 0.5 mL/dose diluted with normal saline to 3.0. • Equal or >4: 0.5 mL/dose diluted with normal saline to 3 mL • Adolescent 0.75 mL/dose diluted with normal saline to 3 mL • Give via nebulizer over 15 minutes PRN, do not routinely give more frequently then Q1-2 hr **Toxins/Overdose (eg, beta-adrenergic blocker, calcium channel blocker)**

	• 0.01 mg/kg (0.1 mL/kg) 1:10,000 IV/IO (max 1mg); if no response consider higher doses up to 0.1 mg/kg (0.1 mL/kg) 1:1000 IV/IO • 0.1 to 1 µg/kg per minute IV/IO infusion (consider higher doses)

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F

Drug	Indications/Dosage
Furosemide	**Pulmonary Edema, Fluid Overload** 1 mg/kg IV/IM (usual max 20 mg if not chronically on loop diuretic)

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H

Drug	Indications/Dosage
Hydrocortisone	**Adrenal insufficiency** 2 mg/kg IV bolus (max 100 mg)
Hydroxocobalamin	**Antidote for Cyanide Toxicity** A dose of 70 mg/kg (not to exceed 5 grams initially) administered over 30 minutes is recommended. This dose can be given IV push in situations of cyanide induced cardiac arrest. See Hydrogen Cyanide - Prehospital Management and Hydrogen Cyanide - Emergency Department/Hospital

	Management Treatment section for cyanide specific dosing recommendations

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I

Drug	Indications/Dosage
Inamrinone	**Myocardial Dysfunction and Increased SVR/PVR** Loading dose: 0.75 to 1 mg/kg IV/IO slow bolus over 5 minutes (may repeat twice to max 3 mg/kg), then 5 to 10 µg/kg per minute IV/IO infusion
Ipratropium Bromide	**Asthma** 250 to 500 µg INH q 20 minutes PRN x 3 doses

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L

Drug	Indications/Dosage
Lidocaine	**VF/Pulseless VT, Wide-Complex Tachycardia (with pulses)** • 1 mg/kg IV/IO bolus • Maintenance: 20 to 50 µg/kg per minute IV/IO infusion (repeat bolus dose if infusion initiated >15 minutes after initial bolus) • 2 to 3 mg/kg ET
Lorazepam	**Prolonged Seizures/Status Epilepticus** 0.05-0.1 mg/kg/dose IV over 2-5 minutes,

	may repeat 0.05 mg/kg X1 in 10 -15 min, max dose 2 mg/dose

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M

Drug	Indications/Dosage
Magnesium Sulfate	**Asthma (refractory status asthmaticus), Torsades de Pointes, Hypomagnesemia** 25 to 50 mg/kg IV/IO bolus (pulseless VT) OR over 10 to 20 minutes (VT with pulses) OR slow infusion over 15 to 30 minutes (status asthmaticus) (max 2 g)
Methylprednisolone	**Asthma (status asthmaticus), Anaphylactic Shock** • Load: 2 mg/kg IV/IO/IM (max 80 mg) use acetate salt IM • Maintenance: 0.5 mg/kg IV/IO q 6 hours (max 120 mg/d)
Midazolam	**Prolonged Seizures/Status Epilepticus** 0.2 – 0.3 mg/kg IM, IN. Buccal (max 10 mg) **Refractory Status Epilepticus** • 2 month and child: Load with 0.15 mg/kg IV X 1 followed by a continuous infusion of 1 mcg/kg/min, and titrate dose upward Q5 minutes to effect (mean dose of 2.3 mcg/kg/min)

	See Nerve Agents - Prehospital Management and Nerve Agents - Emergency Department/Hospital Management Treatment section for nerve agent specific dosing recommendations
Milrinone	**Myocardial Dysfunction and Increased SVR/PVR** Loading dose: 50 to 75 µg/kg IV/IO over 10 to 60 minutes followed by 0.5 to 0.75 µg/kg per minute IV/IO/infusion

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N

Drug	Indications/Dosage
Naloxone	**Narcotic (opiate) Reversal** • Total reversal required (for narcotic toxicity secondary to overdose): 0.1 mg/kg IV/IO/IM/SQ bolus q 2 minutes PRN (max 2 mg) • Total reversal not required (eg, for respiratory depression associated with therapeutic narcotic use): 1 to 5 µg/kg IV/IO/IM/SQ; titrate to desired effect • Maintain reversal: 0.002 to 0.16 mg/kg per hour IV/IO infusion
Nitroglycerin	**Congestive Heart Failure, Cardiogenic Shock** • 0.25 to 0.5 µg/kg per minute IV/IO infusion, may increase by 0.5 to 1

	µg/kg per minute q 3 to 5 minutes PRN to 1 to 5 µg/kg per minute (max 10 µg/kg per minute) • Adolescents: 10 to 20 µg/min, increase by 5 to 10 µg/min every 5 to 10 minutes PRN to max 200 µg/min
Norepinephrine	**Hypotensive (usually distributive) Shock (ie, low SVR and fluid refractory)** 0.1 to 2 µg/kg per minute IV/IO infusion; titrate to desired effect

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O

Drug	Indications/Dosage
Oxygen	**Hypoxia, Hypoxemia, Shock, Trauma, Cardiopulmonary Failure, Cardiac Arrest** Administer 100% O2 via high-flow O2 delivery system (if spontaneous ventilations) or ET (if intubated); titrate to desired effect

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P

Drug	Indications/Dosage
Pralidoxime	**Nerve Agent/Organophosphate Antidote** 20 mg/kg - 50 mg/kg IM, autoinjector or IV (max dose 2 grams) See Nerve Agents - Prehospital Management

	and Nerve Agents - Emergency Department/Hospital Management Treatment section for nerve agent specific dosing recommendations
Procainamide	**SVT, Atrial Flutter, VT (with pulses)** 15 mg/kg IV/IO load over 30 to 60 minutes (do not use routinely with amiodarone)

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S

Drug	Indications/Dosage
Sodium Bicarbonate	**Cardiac Arrest, Metabolic Acidosis (severe), Hyperkalemia** See Harriet Lane Handbook for dosing for specific indications Routine use of sodium bicarbonate in cardiac arrest is not recommended. When used in special situations, the typical initial dose is 1 mEq/kg, and then the dosage should be guide by the bicarbonate concentration or calculated base deficit from blood gas analysis or laboratory measurement (Neumar et al, 2010). See Phosgene - Emergency Department/Hospital Management Treatment section for off label dosing recommendations
Sodium Nitrite	As soon as IV access has been achieved in a symptomatic patient DC the perles and **initiate IV sodium nitrite** (ASAP).

	• The pediatric dose is 0.12 to 0.33 ml/kg. • The usual adult dose is 10 ml of a 3% solution (300 mg). See Hydrogen Cyanide - Prehospital Management and Hydrogen Cyanide - Emergency Department/Hospital Management Treatment section for cyanide specific dosing recommendations
Sodium Nitroprusside	**Cardiogenic Shock (ie, associated with high SVR), Severe Hypertension** 1 to 8 µg/kg per minute (wt < 40 kg) OR 0.1 to 5 µg/kg per minute (wt > 40 kg) IV/IO infusion
Sodium Thiosulfate	**Antidote for Cyanide Toxicity** IV sodium thiosulfate • The pediatric dose is 1.65 mL/kg of a 25% solution. • The adult dose is 50 ml of a 25% solution • (12.5 grams infused over 10 - 20 minutes). • Repeat one-half of the initial dose in 30 minutes if there is an inadequate clinical response or at 2 hours for prophylaxis See Hydrogen Cyanide - Prehospital Management and Hydrogen Cyanide - Emergency Department/Hospital Management Treatment section for cyanide

	specific dosing recommendations