

PEDIATRIC EMERGENCY REFERENCE

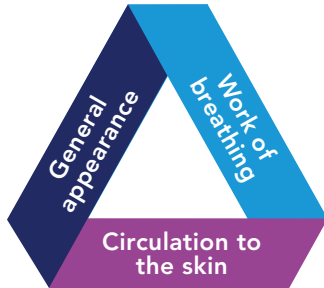
These medication dosages are recommendations for initial emergency care of patients over one month of age. They do not preclude use of alternative dosages based on provider clinical assessment.

Children's
MINNESOTA

The Kid Experts®

Level I Pediatric Trauma Center

PEDIATRIC ASSESSMENT TRIANGLE



	Appearance	Breathing	Circulation
Normal	appropriate cry/speech, responds to stimuli, moves well	easy, quiet, rate consistent with age (see pediatric normals chart)	warm, dry, capillary refill time ≤ 2 seconds
Abnormal	inconsolable or absent cry/speech, decreased responsiveness, floppy/rigid body	retractions, stridor, grunting, wheezing, gasping, rate <12 or >30 breaths/minute	mottled, cyanotic, absent peripheral pulses, capillary refill time > 2 seconds

Any abnormal signs during initial assessment require prompt airway management, oxygen, warmth and more help.

Key			
ET	Endotracheal tube	PO	By mouth
IM	Intramuscular	PR	Rectal
IN	Intranasal	VF	Ventricular fibrillation
IV-IO	Intravenous-Intraosseous	VT	Ventricular tachycardia
NG	Nasogastric		

Pediatric normals						
Age	Wt (kg)	HR	RR	Sys BP	Hypotension	ET ID mm
1 month	4	85–205	30–60	<60		3.5 (cuffed)
6 months	7	100–190	30–60	<60		3.5 (cuffed)
1 year	10–11	100–190	30–60	<70		3.5 (cuffed)
2–3 years	12–14	60–140	24–40	<74–76		4.0 (cuffed)
4–5 years	15–18	60–140	22–34	<78–80		4.5–5.0 (cuffed)
6–8 years	20–25	60–140	18–30	<82–86		5.0–5.5 (cuffed)
9–13 years	30–40	60–100	18–30	<90		6.0–6.5 (cuffed)
14 and over	50	60–100	12–16	<90		7.0 (cuffed)

BREATHING

Acute asthma/anaphylaxis		
Generic	Dose/Route	Notes
Albuterol	< 2 years = 2.5 mg >= 2 years = 5 mg	} Nebulize together as needed x3
Ipratropium	< 2 years = 0.25 mg >= 2 years = 0.5 mg	
EPInephrine (1mg/ml)	0.01 mL/kg IM	Max dose 0.3 mL, q 20 min PRN x3
DiphenhydrAMINE	1 mg/kg IM, IV-IO, PO	Max dose 50 mg
methylPREDNISolone,	2 mg/kg IV-IO or	Max 80 mg/day
PredniSONE or PREDNISolone	2 mg/kg PO	Max 60 mg/day

Croup		
Generic	Dose/Route	Notes
Dexamethasone	0.6 mg/kg IV-IO, IM, PO	Max dose 12 mg
Racemic Epinephrine (2.25%)	0.25–0.5 mL Neb	Nebulize with NS

AIRWAY

Rapid sequence intubation		
Have appropriate size mask, ET tubes, O ₂ , and suction ready. Monitor with pulse oximeter and ECTO ₂ . Use cricoid pressure only if needed for positioning.		
Generic	Dose/Route	Notes
Premedication		
• Atropine	0.02 mg/kg IV-IO	Up to age 8 years. Max 1 mg Not routinely used if high risk of bradycardia
Sedation options		
• Etomidate	0.2–0.3 mg/kg IV-IO	} Given simultaneously
• Ketamine	1–2 mg/kg IV-IO	
• Propofol	3 mg/kg; Max 100 mg	
• Midazolam	0.1–0.3 mg/kg IV-IO Max dose 10 mg	
• Fentanyl	2 mcg/kg Max dose 200 mcg	
Muscle relaxant options		
Induction		
• ROCuronium	1 mg/kg IV-IO or IM	
Maintenance Dose as needed when movement is observed.		
• ROCuronium	0.1–0.2 mg/kg IV-IO	

VECuronium is not recommended due to high risk of overdose.

CIRCULATION

Shock		
Generic	Dose/Route	Notes
Crystalloid (NS, LR)	20 mL/kg IV-IO repeat PRN up to 3 times.	Give in 10 mL/kg IV-IO increments for heart history or cardiogenic shock
Vasoactive infusions (use pump)		
Generic	Dose/Route	Notes
DOBUtamine	2–20 mcg/kg/min IV-IO	Start low; titrate to effect
DOPamine	2–20 mcg/kg/min IV-IO	Start low; titrate to effect
EPInephrine	0.1–1 mcg/kg/min IV-IO	Consider higher dose if needed
NORepinephrine	0.1–1 mcg/kg/min IV-IO	

Reconstitute vasoactive infusions according to infusion guidelines. See Children's Medication Manual for infusion concentration and dosing.

Disclaimer: This guideline is designed for general use with most patients; each clinician should use his or her own independent judgment to meet the needs of each individual patient. This guideline is not a substitute for professional medical advice, diagnosis or treatment.

CIRCULATION continued

Cardiac arrest

Generic	Dose/Route	Notes
EPInephrine (1 mg/10 mL)	0.01 mg/kg IV-IO	Max single dose 1 mg

After airway and breathing are managed, rule out reversible causes (Hs and Ts):

- Hypovolemia
- Hypoxia
- Hypothermia
- Hypo-/Hyperkalemia
- Hydrogen ion (acidosis)
- Hypomagnesia
- Hypoglycemia
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis: lungs
- Thrombosis: heart
- Toxins: drug overdose

Electrical therapy

Type of therapy	Dose	Notes
Cardioversion (synchronized)	0.5–2 j/kg	0.5 to 1 j/kg 1st dose 2 j/kg for 2nd and subsequent doses
Defibrillation	2–4 or more j/kg	2 j/kg 1st dose, 4 j/kg 2nd dose. May increase subsequent doses to max of 10j/kg

DISABILITY

Seizures

Generic	Dose/Route	Notes
Levetiracetam	60mg/kg loading dose; infuse over 15 min.	Max dose 4500 mg May give IV push if required. Levetiracetam dosing 20 mg/kg if patient is already taking this medication.
Diazepam	0.2 mg/kg IV-IO	Max dose 10 mg
Diazepam	0.5 mg/kg PR PR preferred. May use IV product for PR administration.	2-5 years: 0.5mg/kg (max 20kg) 6-11 years: 0.3mg/kg (max 20kg) >= 12 years: 0.2mg/kg (max 20kg) Max dose 20 mg
LoraZEPAM	0.1 mg/kg IV-IO IV-IO preferred	Max dose 4 mg*
Midazolam	0.2 mg/kg IM, IN IM/IN preferred	Max dose 10 mg* May premedicate with IN lidocaine to minimize burning sensation.
FOSphenytoin	20 mgPE/kg load IV-IO or IM	If IV-IO, infuse over 10 min, monitor for ↓HR and ↓BP for 30 min*
PHENObarbital	15–20 mg/kg load IV-IO	Infuse over 30 min, monitor for ↓HR and ↓BP*

*Monitor respiratory status with administration of all anticonvulsants

Ingestions Poison control 1-800-222-1222

Generic	Dose/Route	Notes
Activated Charcoal	<12 years of age: 0.5–1 g/kg PO Adolescents/adults: 25–100 g PO	Dilute in water if needed
Naloxone	0.1 mg/kg IM, IN, IV-IO, ET	Max dose 2 mg

Sepsis/Meningitis

Generic	Dose/Route	Notes
Ampicillin	50–75 mg/kg IV-IO	Give q 6 hrs; Max dose 3 g/dose, 12 g/day
Ceftazidime	50 mg/kg IV-IO	Every 8 hrs; Max dose 2 g/dose
CefTRIAxone	50 mg/kg IV-IO, IM	Give q 12–24 hours. Max 2 g/dose. For IM doses, reconstitute with 1% Lidocaine
Vancomycin	15 mg/kg IV-IO	Infuse over 1 hr, Give q 6 hrs
Adjunct Dexamethasone	0.15 mg/kg IV	Max dose 10 mg Not routinely used for meningitis. Best given before antibiotics.

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Dysrhythmias

Generic	Dose/Route	Notes
Adenosine	0.1 mg/kg rapid IV-IO push, if no response, increase 0.2 mg/kg	Max 1st dose 6 mg, Max 2nd dose 12 mg
AMIODARone	5 mg/kg IV-IO	300 mg max dose for VF or pulseless VT For tachycardias with pulses, dilute in D5W to 2 mg/mL (prevents precipitate) and give over 1 hour, max 150mg
Lidocaine	1mg/kg IV-IO load, then 20–50 mcg/kg/min IV-IO infusion	May repeat bolus if delay until infusion is >15 minutes
Procainamide	15 mg/kg in D5W IV-IO, then 20–80 mcg/kg/min IV-IO infusion	Max dose 500 mg Infuse over 30-60 min; may cause hypotension, bradycardia, widening QRS — if so, stop infusion

Hypertensive crisis

Generic	Dose/Route	Notes
NIFEdipine	0.1–0.25 mg/kg PO	Max dose 10 mg; for use in inpatient tertiary setting after alternatives have been tried
Labetalol	0.25 mg/kg IV-IO, over 2 min	Repeat in 10 min with 0.5 mg/kg IV-IO if BP still elevated Max dose 40 mg
Hydralazine	0.25 mg/kg PO 0.1-0.2 mg/kg IM/IV	Max PO dose 25 mg Max IM/IV dose 20 mg

Metabolic

Generic	Dose/Route	Notes
Hyperkalemia		
Calcium Chloride 10%	20 mg/kg IV-IO	Max dose 1000 mg
Calcium Gluconate	60 mg/kg IV-IO	Max dose 2000 mg Central line if possible.
Dextrose 25%	2 mL/kg IV-IO	} Administer together. Use dextrose to flush insulin in line. Dextrose max dose 25 g. Insulin max dose 10 units.
Regular Insulin	0.1 units/kg IV-IO	
Sodium Bicarbonate	1 mEq/kg IV-IO	Max dose 50 mEq
Diabetic Ketoacidosis		
Normal Saline	10 mL/kg IV-IO over 1 hr unless hypotensive shock, then 20 mL/kg IV-IO bolus	
Regular Insulin	0.05–0.1 units/kg/hr IV-IO	0.05 units/kg/hr preferred for patients <3 years and/or those more insulin sensitive

Hypoglycemia		
Dextrose 50%	1 mL/kg	Patient >40 kg; Max dose 25 g
Dextrose 25%	2 mL/kg	Patient 10-40 kg; Max dose 25 g
Dextrose 10%	2 mL/kg	Patient <10 kg; Max dose 25 g

Increased intracranial pressure (↑ICP)

Fluid resuscitation to maintain cerebral perfusion pressure

Generic	Dose/Route	Notes
3% Sodium Chloride	5 mL/kg over 10-20 min	Max dose 300 mL
Mannitol	0.5 g/kg IV-IO	5 micron filter. Use only if perfusion adequate.
Furosemide	1 mg/kg IV-IO	Use only if perfusion adequate
Dexamethasone	1 mg/kg IV-IO as a single dose	Max dose 10 mg

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