

Pediatric Emergency Management Guide 6th Edition

Rapid Sequence Intubation

Preparation	Suction, airway equipment, monitor, check drug doses, oxygen
Pre-oxygenate	Administer 100% oxygen by non-rebreather mask for 5 minutes. Avoid positive pressure ventilation unless apneic. Consider placing nasal cannula for apneic oxygenation.
Pretreatment drugs	Atropine (age <1 year) (optional) 0.02 mg/kg IV/IM/IO - min. 0.1 mg, max 1 mg
Induction (sedation) drugs	Etomidate 0.3 mg/kg IV/IO Caution: avoid in possible sepsis
	Ketamine 1–2 mg/kg IV/IO
	Midazolam 0.2–0.3 mg/kg IV/IM/IO
	Propofol 1–2 mg/kg IV//IO Caution: avoid in hypotension or bradycardia
Paralysis drugs	Rocuronium (preferred) 1 mg/kg (intermediate acting, lasts 60 min) IV/IO Caution: difficult airway
	Succinylcholine 2-4 mg/kg IV/IO/IM Caution: high ICP, neuro-muscular disease, hyperkalemia, risk for malignant hyperthermia, renal failure, burns >48–72 hrs
Placement & proof	Confirm with CO2 detection, breath sounds pulse oximetry, X-ray
Post-intubation sedation	Multiple options: Benzodiazepine +/- narcotic Always sedate the intubated patient!

Procedural Sedation

Set-up	Suction airway, monitor, oxygen, check drug doses, premedications
Pre-oxygenation	Administer 100% oxygen by non-rebreather mask for 5 minutes. Avoid positive-pressure BVM unless apneic
Medications	
Ketamine	1 mg/kg IV (then titrate 0.5 mg/kg), 4 mg/kg IM Premedicate: Ondansetron (0.15 mg/kg PO/IV)
Propofol	1–2 mg/kg IV
Midazolam	0.1–0.2 mg/kg IV/IO/IM or 0.3–0.4 mg/kg IN
Fentanyl	1–2 mcg/kg IV/IO/IM/IN or 0.3–0.4 mg/kg IN

Seizures

1 First, attend to A,B,Cs. Second, treat seizures.

FOR INFANTS AND CHILDREN:	
FIRST LINE: Benzodiazepines: Administer x 2 doses prn - Lorazepam 0.05–0.1mg/kg/dose (max 4mg) IV/IM - Midazolam 0.2mg/kg/dose (max 10mg) IV/IM Intranasal: 0.4mg/kg (max 10mg) - Diazepam 0.1–0.2mg/kg/dose (max 10mg) IV	SECOND LINE: For benzodiazepine refractory seizures - Fosphenytoin 15–20 mg PE/kg IV loading dose over 10 minutes. May administer IM undiluted if no access. - Valproic acid 20–40 mg/kg IV/IO over 10–20 min - Levetiracetam (Keppra): 20–50mg/kg (max 1000–3000mg) IV loading dose
FOR NEONATES:	
Phenobarbital: 15–20mg/kg IV loading dose (max rate 1mg/kg/min), then 5mg/kg q15 min prn seizures	

Equipment and Vital Signs

AGE	WT (KG)	ETT ID (MM)	DL BLADE (STRAIGHT OR CURVED)	GLIDESCOPE AVL: GVL(BATON)	LENGTH (CM) LIP TO TIP	NG TUBE	LMA	RR (AVG/MIN)	HR	MINIMUM SYS BP	CHEST TUBE (FR)
Neonate	< 1 kg	2.5	0	GVL 0 (VB 1–2)	7	5	1	< 60	145	52	10–14
Neonate	1–2 kg	3.0	0	GVL 0 (VB 1–2)	8	5	1	< 60	145	52	10–14
Neonate	2–3 kg	3.5	0–1	GVL 1(VB 1–2)	9	5	1	< 60	125	60	12–18
Neonate	> 3 kg	3.5–4.0	0–1	GVL 1(VB 1–2)	10	8	1	< 60	125	60	12–18
1–6mo	4–6 kg	3.5–4.0	1	GVL 2 (VB 1–2)	12	8	1–1.5	24–30	120	70	12–18
6mo–1yr	6–10 kg	4.0	1	GVL 2 (VB 1–2)	13	8	1.5	24–30	130	70	14–20
1–2yr	10–12 kg	4.5	1	GVL 2.5 (VB 1–2)	14	10	2	20–24	130	72–74	14–24
2–3yr	12–14 kg	5.0	1–2	GVL 2.5 (VB 1–2)	15	10	2	20–24	120	74–76	14–24
4–5yr	16–20 kg	5.0	2	GVL 2.5 (VB 1–2)	16	12	2	20–24	100	78–82	20–28
6–7yr	23–28 kg	5.0–5.5	2s 2c	GVL 2.5 (VB 1–2)	16	12	2.5	12–20	100	82–84	20–28
8–9yr	31–34 kg	5.5–6.0	2–3s (3c)	GVL3 (VB 3–4)	17	12	3	12–20	85	86–88	28–38
10–11yr	37–40 kg	6.5–7.0	2–3s or 3c	GVL3 (VB 3–4)	18	14	3	12–20	75	>90	28–38
12–13yr	43–46 kg	7.0–7.5	2–3s (3c)	GVL3 (VB 3–4)	18	14	3	12–20	75	>90	32–40
> 14yr	> 50 kg	7.5–8.0	2–3s (3c)	GVL3 (VB 3–4)	20–22	18	4	10–14	70	>90	32–40

*If choosing a cuffed ET tube for infants and children, use a size that is 0.5 to 1.0 smaller than the recommended uncuffed size.

*Weight estimation: (3 x age) + 7

*Use cuffed tubes when available

*Estimate of ET Depth = 3x size of tube

Antibiotics

Antibiotics for severe infections: Sepsis/Meningitis in children

Ceftriaxone	50 mg/kg/dose (max 2 g) IV/IM/IO Meningitis: 100 mg/kg
Vancomycin	20 mg/kg/dose (max 2 g) IV
Neonatal Sepsis Antibiotics	
Ampicillin	50 mg/kg/dose (max 2 g) IV/IM Meningitis: 100 mg/kg
Cefotaxime	50 mg/kg/dose (max 2 g) IV
Acyclovir	20 mg/kg/dose (max 1 g) IV
Gentamicin	4 mg/kg/dose IV

Ingestions/Toxicity

Consult Oregon Poison Center 800-222-1222

Drug	Dose
Activated charcoal	0.5–1 g/kg/dose PO/NG (without sorbitol)
Naloxone (Narcan)	0.1 mg/kg (max 2 mg) IV/IO q2 min until reversal
Flumazenil (Romazicon)	0.01 mg/kg (max 0.2 mg) IV/IO q1 min until max 0.05 mg/kg (or 1 mg) total dose.

Basic Life Support

- **Compression-Airway-Breathing (C-A-B)**
- **Compressions at least 100/min and <10 second interruptions**
- **Place IO early – all IV medications can be given IO**

Respiratory Medications

Inhaled Medications (Nebulized)

Albuterol 0.083% Neb or Duoneb with Ipratropium (0.5 mg/3 mL)	2.5–5 mg (3 mL) nebulized x3 doses, or until effect
Racemic Epinephrine IV dilute in 2 mL NS	0.25–0.5 mL inhaled x2 doses for stridor at rest

Intravenous/Intramuscular Medications

Magnesium Sulfate	25–75 mg/kg IV (max 2g) over 15 minutes
Epinephrine IV 1:1000 IM 1:10,000 IV	0.01 mg/kg (max 0.3 mg) q20 min x3 doses for refractory asthma

Anti-inflammatory Medications

Dexamethasone PO/IV/IM	0.6 mg/kg/dose (max 16 mg)
Methylprednisolone IV/IO/IM	1–2 mg/kg/dose (max 125 mg)
Prednisone PO	1–2 mg/kg/dose (max 60 mg)

Every effort has been made to ensure that this information is accurate and in accordance with good medical practice. It is the responsibility of the attending physician to evaluate the appropriateness of a particular option in the context of the clinical situation with due consideration of your knowledge, skills, new developments and FDA regulations.

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Fluid Resuscitation

Bolus with NS	Maintenance Rates (Per Hour)	Blood Products
Neonate: 10 mL/kg Pediatric: 20–30 mL/kg up to 60 mL/kg in the first hour Diabetic Ketoacidosis (DKA): 10–20 mL/kg	D5 ½ NS or NS 4 mL/kg for the 1st 10 kg + 2 mL/kg for the 2nd 10 kg + 1 mL/kg over 20 kg	pRBC's Infants: 15–20 mL/kg, Children: 1/2–1 unit, Adolescents: 1 unit

Increased Intracranial Pressure

- Avoid hypoxia and hypotension
- Maintain normoventilation EtCO2 30-35, hyperventilate briefly only for herniation.

Drug	Dose
Hypertonic saline (3%)	3 mL/kg (range 3–6 mL/kg) IV bolus over 10 minutes
Mannitol	0.5–1 g/kg IV over 20 min (requires <5 micron filter)

Cardiac Electricity

Defibrillation (VF and pulseless VT)

Pediatric	Monophasic and Biphasic defibrillators	
	Initial Energy: 2 J/kg	Subsequent doses: 4 J/kg; Third dose: 4–10 J/kg

Synchronized Cardioversion: (Unstable SVT, VT with pulse, Afib, Aflutter)

Pediatric	Monophasic and Biphasic defibrillators	
	Initial Energy: 0.5 J/kg	Subsequent doses: 1 J/kg

Advanced Life Support Medications

Drug	Dose
Adenosine	0.1 mg/kg (max 6 mg) rapid IV/IO push in most proximal vein, then 5 mL saline flush. Repeat q2 min x2 doses: 0.2 mg/kg, then 0.3 mg/kg (max 12 mg for repeat doses). Record rhythm strip during administration.
Amiodarone	5 mg/kg (max 300 mg) rapid IV/IO push (PALS), or over 20–60 min (stable tachycardia). Repeat up to 3 doses (up to 15 mg/kg total dose).
Atropine	0.02 mg/kg IV/IM (min 0.1 mg, max 1 mg) q3-5 min, (max 3 mg total dose)
Calcium Gluconate	100mg/kg (max 3g) IV/IO over 5-10 minutes; Adult dose 1-3 g/dose
Epinephrine 1:10,000	0.01 mg/kg = 0.1 mL/kg (max 1 mg) IV/IO push q3-5 min.
Dextrose IV/IO	Infants: 5 mL/kg D 10W Pediatric: 2 mL/kg D 25W
Lidocaine	1 mg/kg (max 100 mg) IV/IO
Magnesium Sulfate	25–50 mg/kg (max 2 g) slow IV/IO push (PALS), or over 15 min if stable (dilute to 200 mg/mL) Caution: hypotension
Procainamide	15 mg/kg IV/IO over 30 min (dilute to 30 mg/mL in NS) (max 100 mg single dose)
Sodium Bicarbonate 8.4%	1 mEq/kg IV/IO slow push (dilute to 0.5 mEq/mL in SWFI for neonates) Caution: not routinely used in PALS, ensure adequate ventilation
Alprostadil (PGE)	0.05 mcg/kg/min IV/IO Consider for newborns in shock for patency of ductus arteriosus – titrate to minimum effective dose. Caution: apnea

For transfers, consultation, or to admit a patient, call **888-346-0644**

Telemedicine –

To activate a NICU or PICU Consultation: call **503-494-7000** or **800-648-6478** and request a telemedicine consult.

Move the RP-Lite to the patient's bedside and the OHSU physician will initiate the consult.

