

# Pediatrics... and CareFlight

(Side A)

“Keep ‘em pink, warm, and sweet!” - Scott DeBoer, RN, MSN, et al..

## Pediatric Reference Card (There is a range of “normal” VS & “default size” of equipment as listed)

“Normal” Vitals:

<u>Age</u>	<u>Kg.</u>	<u>RR</u>	<u>HR</u>	<u>SBP</u>	<u>Age</u>	<u>Kg.</u>	<u>RR</u>	<u>HR</u>	<u>SBP</u>
PM	1+	50-60	120-180	40-50	3 yr.	12-15	20-30	100-120	90
Term	2-3	30-40	100-160	60-70	5 yr.	18-20	20-30	100-120	100
6 mo.	7	25-35	100-140	70-80	8 yr.	25-30	18-25	80-90	105
1 yr.	10	25-35	100-140	80-90					

Equipment:

<u>Age</u>	<u>Kg.</u>	<u>ETT<sup>^</sup></u>	<u>Blade</u>	<u>LMA</u>	<u>Sx</u>	<u>NG/OG</u>	<u>Chest Tube</u>	<u>Foley</u>
PM	1+	3.0	0-1	#1	6 Fr	5-8 Fr	8-10 Fr	5-6 Fr
Term	2-3	3.5	0-1 S	#1	8 Fr	5-8 Fr	8-10 Fr	5-6 Fr
6 mo.	7	4.0	1 S	#1½	8 Fr	5-8 Fr	10-12 Fr	6-8 Fr
1 yr.	10	4.0	1 S	#1½	8 Fr	10 Fr	16-20 Fr	8-10 Fr
3 yr.	12-15	4.5	2 S/C	#2	10 Fr	10 Fr	20-24 Fr	8-10 Fr
5 yr.	18-20	5.0	2 S/C	#2	10 Fr	10-12 Fr	24-28 Fr	10-12 Fr
8 yr.	25-30	6.0	2-3 S/C	#2½	14 Fr	10-12 Fr	28-32 Fr	12 Fr

<sup>^</sup> with one size larger ETT and one size smaller ETT available during intubation sequence.

For pediatric intubation ≤ 2 y.o., start w/ a 4.0 ETT (w/ 3.5 and 4.5 ETT available).

In pediatrics: 3x ETT size = ETT “default” depth in cm.

## “PALS+ Drug Dosages” (based on “adult strength” drugs)

“High-Quality” CPR: Rate 100-120; depth = 1/3 AP chest diameter; + recoil; minimize interruptions / Avoid excessive ventilations (10 breaths/min if advanced airway).

**Epinephrine** “1 mL per 10 kg” = 0.1 mL/kg IV (1:10,000) or 0.1 mL/kg ET (1:1000)

**Atropine** “2 mL per 10 kg” = 0.2 mL/kg IV

**Amiodarone** 5 mg/kg IV / **Lidocaine** 1 mg/kg IV / **Magnesium** 50 mg/kg IV (max 2 gms)

**Adenosine** 0.1 mg/kg IVP

**Defibrillation** 2 J / kg, repeat 4 J / kg (... **Cardiovert** at ½ strengths)

**Etomidate** 0.2 – 0.3 mg/kg IVP (*shock*: 1/2 dose) / **Ketamine** 1 – 2 mg/kg IVP (if *shock*) \*

**Rocuronium** 0.6 mg/kg IVP initial; 0.1 – 0.2 mg/kg IV repeat prn

**Versed** 0.1 mg/kg IV (max 2.5 mg)

**Valium** 0.2 mg/kg IV (max 5 mg); 0.4 mg/kg PR (max 10 mg) / **Ativan** 0.1 mg/kg IV (max 2 mg)

**Bicarb** “10 mL per 10 kg” IV (dilute with equal amount NS to ½ strength) = 1 mL/kg + dilution.

**D50** “10 mL per 10 kg” IV (dilute with equal amount NS to ½ strength D25) = 1 mL/kg + dilution.

**Zofran** 0.1 mg/kg IV

**Fentanyl** 1 mcg/kg IV / **Morphine** 0.1 mg / kg IV

**Epinephrine** 0.01 mL/kg IM (1:1000) (max = 0.5 mL/dose) \*

**Benadryl** 1 mg/kg IV / IM

\* NEW for CF Protocols 5<sup>th</sup> Ed.

# Pediatrics... and CareFlight

(Side B)

**Respiratory Problems / Shock / Head Injuries...** 3 conditions that can be mortal to peds.

Abnormal perfusion... abnormal mental status... abnormal muscle tone... = **SHOCK !**

Always consider / correct the “**Four Hypo’s**”: **Hypoxemia, Hypovolemia, Hypothermia, Hypoglycemia.**

Consider SVT if peds HR > 180 or infant HR > 220 – especially if no variability.

- John McDonald, MD & Richard Orr, MD (CHP / UPMC)

“Pediatric trauma patients are incredibly plastic and flexible: they may have no broken bones but still have serious internal injuries. Remember - **kids compensate until they don’t...**”

- Teri Aguiar, RN (St. Louis Children’s Hospital Transport)

## “Shock”: IV Fluid (NS or similar) & Transfusion Boluses / Vasopressors

Hemorrhagic Shock: **20 mL/kg IVF**; repeat **20 mL/kg IVF** prn; (\*) consider **10 mL/kg pRBCs** transfusion if 2nd IVF bolus required *or if shock condition deteriorates at any time...*

Septic Shock (or similar): **20 mL/kg IVF**; repeat **20 mL/kg IVF** prn; (\*) **3<sup>rd</sup> IVF bolus or Vasopressor = Dopamine 5-20 mcg/kg/min, Epinephrine 0.1-1 mcg/kg/min, Norepinephrine\* 0.1 – 2 mcg/kg/min.**

Anaphylactic Shock: same IVF as “Septic Shock” (above) w/ (\*) **Epinephrine** primary vasopressor.

Cardiogenic Shock: (\*) up to **20 mL/kg IVF**; consider early **Vasopressor** (per above “Septic Shock”). \*

DKA Shock: **20 mL/kg IVF** followed by **10 mL/kg IVF over 1 hour**; further IVF = **1½ x maintenance.**

(\*) further or more aggressive IVF therapy or if signs of cerebral edema develop.

## Pediatric Airway Pearls (≥ 8 y.o. the pediatric airway is similar to the adult airway...)

“Adult vs. Infant”: Airway **anatomy / physiology** differences particular to **children...**

*More anterior...* Glottic opening.

*Larger...* Tongue / tonsils / “floppy” epiglottis... and Occiput (flexes neck).

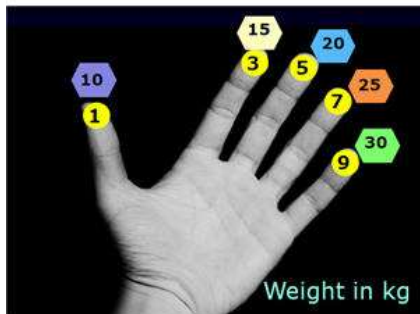
*Smaller (and softer)...* Overall airway, incl. mouth / nares openings / cricothyroid membrane.

*Shorter...* Neck & trachea (7 cm @ 18 months old).

**Cricoid ring** = narrowest part of airway (“funnel” below vocal cords)... vs. vocal cords in adults.

*Increased:* metabolic rate (O2 dependent!), oral secretions, vagal tone, chest wall compliance.

## “Finger Counting” to Estimate Pediatric Weights



Age (yrs):	1	2	3	4	5	6	7	8	9
Weight (kg):	10	12.5	15	17.5	20	22.5	25	27.5	30