

**ORANGE COUNTY EMERGENCY MEDICAL SERVICES**

**PEDIATRIC MEDICATION VOLUME DOSE BY HEAD-HEEL LENGTH MEASUREMENT**

**ALS Reference # I-20**

		Newborn	3 MO	6 MO	1 YR	2 YR	3-4 YR	5-6 YR	7-8 YR	9-10 YR	11-12 YR
Length in centimeter range for age		47-60 cm	60-65 cm	66-74 cm	75-86 cm	83-95 cm	87-99 cm	100-113 cm	114-132 cm	133-158 cm	159-189 cm
Average kilograms/pounds		3-5kg/7-11lb	6 kg/13lb	8 kg/15lb	11kg/24lb	13 kg/29lb	16kg/35lb	20kg/44lb	26kg/57lb	31kg/68lb	40kg/88lb
Expected Heart Rate		100-160	100-160	100-160	100-170	90-150	80-140	75-120	70-110	60-105	60-100
Expected Respiratory Rate		30-60	30-60	30-60	30-40	24-40	20-30	20	16	16	16
<b>MEDICATION / CONCENTRATION</b> (Boxed Meds by Base Hospital Order only)	<b>DOSE</b>	Newborn to 3 Month	3-6 Month 60-65 cm	7-12 Months 66-75 cm	13-24 Months 76-87 cm	25-35 Months 88-92 cm	3-5 Years 93-100 cm	5+ to 7 years 101-114 cm	7+ to 9 years 115 -133 cm	9+ to 11 years 134-159 cm	11+ to 13 years 160-190 cm
<b>Adenosine IV</b> 3 mg/1mL	0.2 mg/kg	0.2 mL	0.4 mL	0.6 mL	0.7 mL	0.9 mL	1 mL	1.3 mL	1.6 mL	2 mL	2.7 mL
<b>Albuterol</b> 2.5 mg/3mL	via nebulizer at 8L/min flow rate	3.0 mL	3.0 mL	3.0 mL	6.0 mL	6.0 mL	6.0 mL	6.0 mL	6.0 mL	6.0 mL	6.0 mL
<b>Amiodarone IV/IO for VF/ pulseless VT</b> 50 mg/1 mL	5 mg/kg	0.4 mL	0.6 mL	0.8 mL	1.1 mL	1.3 mL	1.6 mL	2.0 mL	2.4 mL	3.0 mL	3.0 mL
<b>Amiodarone IV for VT with pulse</b> 50 mg/1 mL	5 mg/kg over 10 minutes	0.4 mL	0.6 mL	0.8 mL	1.1 mL	1.3 mL	1.6 mL	2.0 mL	2.4 mL	3.0 mL	3.0 mL
<b>Atropine IV/IM</b> 1 mg/1 mL (Organophosphate toxicity dosing)	0.1 mg/kg	0.4 mL	0.5 mL	0.8 mL	1.0 mL	1.3 mL	1.6 mL	2.0 mL	2.6 mL	3.1 mL	4.0 mL
<b>Atropine IV/IM</b> 1 mg/10 mL (Organophosphate toxicity dosing)	0.1 mg/kg	4.0 mL	6.0 mL	5.0 mL	5.0 mL	5.0 mL	5.0 mL	5.0 mL	5.0 mL	5.0 mL	5.0 mL
<b>Dextrose 10%</b> in H <sub>2</sub> O solution 0.1 mg/mL	5 mL/kg	20 mL	30 mL	40 mL	50 mL	65 mL	80 mL	100 mL	130 mL	150 mL	200 mL
<b>Diphenhydramine IM/IV/IO</b> 50 mg/mL	1 mg/kg	N/A	0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL
<b>Epinephrine 1.0 mg/mL IM</b> (1 mg/1 mL)	0.01 mg/kg	N/A	0.05 mL	0.08 mL	0.1 mL	0.1 mL	0.16 mL	0.2 mL	0.25 mL	0.3 mL	0.3 mL
<b>Epinephrine 0.1 mg/mL IV/IO</b> (1 mg/10 mL)	0.01 mg/kg	0.4 mL	0.5 mL	0.8 mL	1 mL	1.3 mL	1.6 mL	2 mL	2.5 mL	3 mL	3 mL
<b>Fentanyl IN/IV/IM</b> 50 mcg/1 mL	2 mcg/kg	----	0.15 mL	0.2 mL	0.5 mL	0.5 mL	0.6 mL	0.8 mL	1.0 mL	1.0 mL	1.0 mL
<b>Glucagon IM</b> 1 mg/mL	0.5 mg	----	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL

APPROVED



Review Dates: 5/16, 11/16, 4/17, 11/17, 8/18

Initial Release Date: 10/01/2018

Final Implementation Date: 4/01/2019

**ORANGE COUNTY EMERGENCY MEDICAL SERVICES**

**PEDIATRIC MEDICATION VOLUME DOSE BY HEAD-HEEL LENGTH MEASUREMENT**

**ALS Reference # I-20**

MEDICATION / CONCENTRATION (Boxed Meds by Base Hospital Order only)	DOSE	Newborn to 3 Month	3-6 Month 60-65 cm	7-12 Months 66-75 cm	13-24 Months 76-87 cm	25-35 Months 88-92 cm	3-5 Years 93-100 cm	5+ to 7 years 101-114 cm	7+ to 9 years 115-133 cm	9+ to 11 years 134-159 cm	11+ to 13 years 160-190 cm
Average kilograms/pounds		3-5kg/7-11lb	6 kg/13lb	8 kg/ 15 lb	11 kg/ 24 lb	13 kg/ 29lb	16 kg/ 35 lb	20 kg/44 lb	26 kg/57 lb	31 kg/ 68lb	40 kg /88lb
<b>Hydroxocobalamin IV 25 mg / 1 mL</b>	70 mg/kg	11.5 mL	17 mL	22.5 mL	31 mL	36.5 mL	45 mL	56 mL	73 mL	87 mL	112 mL
<b>Lidocaine 2% local pain control for IO 100 mg/5 mL</b>	0.5 mg/kg	0.1 mL	0.1 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1 mL
<b>Midazolam for Seizure IN/IM 5 mg/mL</b>	0.1 mg/kg	----	CONTACT BASE	CONTACT BASE	0.2 mL	0.25 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL
<b>Midazolam for sedation IN/IM 5 mg/mL (example: cardioversion)</b>	0.1 mg/kg	----	----	----	0.2 mL	0.25 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL
<b>Morphine IV 4 mg/1 mL carpject</b>	0.1 mg/kg	----	0.15 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1 mL
<b>Morphine IV 10 mg/10 mL carpject</b>	0.1 mg/kg	----	0.5 mL	0.8 mL	1.1 mL	1.2 mL	1.5 mL	2.0 mL	2.5 mL	3.1 mL	4.0 mL
<b>Morphine IM 10 mg/1mL vial</b>	0.1 mg/kg	----	----	0.1 mL	0.1 mL	0.13 mL	0.15 mL	0.2 mL	0.25 mL	0.3 mL	0.4 mL
<b>Naloxone IV/IM/IN 0.8 mg/2 mL</b>	0.1 mg/kg max 0.8 mg	0.8 mL	0.8 mL	1.0 mL	2 mL	2 mL	2 mL	2 mL	2 mL	2 mL	2 mL
<b>Naloxone IV/IM/IN 1 mg/1mL</b>	0.1 mg/kg max 1 mg	0.4 mL	0.5 mL	0.7 mL	1 mL	1 mL	1 mL	1 mL	1 mL	1 mL	1 mL
<b>Naloxone IN Preload nasal spray 4 mg/0.1mL</b>	4 mg IN	CONTACT BASE	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray	Single nasal spray
<b>Normal Saline IV/IO 0.9% NaCl</b>	20 mL/kg up to 250 mL per bolus	80 mL	120 mL	140 mL	220 mL	250 mL	250 mL	250 mL	250 mL	250 mL	250 mL
<b>Normal Saline nebulized 0.9% NaCl</b>	via nebulizer at 8L/min flow rate	----	3 mL	3 mL	3 mL	3 mL	3 mL	3 mL	3 mL	3 mL	3 mL
<b>Ondansetron (Zofran®) ODT</b>	4 mg ODT	----	----	----	----	----	4 mg (age 4 or over)	4 mg	4 mg	4 mg	4 mg
<b>Sodium Bicarbonate IV/IO 50 mEq/50 mL</b>	1 mEq/kg	4 mL 1:1 dilution	6 mL 1:1 dilution	8 mL 1:1 dilution	11 mL	13 mL	16 mL	20 mL	25 mL	31 mL	40 mL

**Note # 1: Defibrillation – use manufacturer recommended energy settings (for biphasic devices, delivered energy is calculated internally by device)**  
**Note # 2: Do Not exceed maximum adult dose when administering medications to a pediatric patient**

APPROVED



Review Dates: 5/16, 11/16, 4/17, 11/17, 8/18  
 Initial Release Date: 10/01/2018  
 Final Implementation Date: 4/01/2019