

**SIERRA-SACRAMENTO VALLEY EMS AGENCY
ALS PROTOCOL – MEDICAL EMERGENCY**

**PEDIATRIC
REFERENCE NO. PED-1**

SUBJECT: GENERAL PEDIATRIC PROTOCOL

Neonate is defined as an infant during the first 28 days of life.

Pediatric patients are defined in S-SV EMS Region as all patients aged one (1) month old up to and including 14 years of age.

- 1. Base/Modified Base Hospital Contact** - A paramedic shall make base/modified base hospital contact prior to releasing children under 3 years of age at scene.
- 2. Pediatric Trauma** - When ground transport times do not exceed 45 minutes to UCDMC:

The following pediatric trauma patients should be transported directly to UCDMC (S-SV Policy Reference No. 860).

- Children up to and including 14 years of age or less, with a Pediatric Trauma Score of 8 or less.
- All children 6 years of age or less, meeting anatomic and/or physiologic criteria.
- All critically injured children, up to and including 14 years of age or less that are transported by helicopter, shall be transported to UCDMC.

EXCEPTIONS

- If a pediatric patient meets criteria for the direct transport to UCDMC, but the patient's condition is so critical that any additional transport time may jeopardize the patient's life, transport the patient to the closest designated trauma center.
- If unable to establish an airway, transport to the closest hospital.
- All patients with blunt trauma, who are pulseless, apneic and asystolic, and death is not determined in the field – shall be transported to the closest hospital.

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3. **Pediatric Intubation** – Perform endotracheal intubation only if bag-valve-mask ventilation is unsuccessful or impossible.
4. **End-tidal CO₂ detection** - Secondary confirmation of proper ET tube placement is **required** for pediatric patients with a perfusing rhythm by end-tidal CO₂ detection, utilizing colorimetry, capnometry, or capnography, immediately after intubation and during transport.
5. **Vascular Access/Intraosseous** - If unable to achieve peripheral venous access rapidly (within 90 seconds), and there is an urgent need to administer fluids and/or medications, and the child has an altered level of consciousness, intraosseous access may be established.
6. **Medication Doses** - A length based pediatric resuscitation tape shall be used in determining sizes of equipment and medication dosages in the out-of-hospital setting.
7. **Apparent Life Threatening Event (ALTE)** – All Pediatric patients less than or equal to 3 years old with history of ALTE shall be transported. Note: If parent/guardian refuses medical care/and or transport, a consult with Base Hospital physician is required prior to completing an AMA form.
 - a. An Apparent Life-Threatening Event (ALTE) is any episode that is frightening to the observer (may think the infant or child has died) and usually involves any combination of the following symptoms:
 - **Apnea** (central or obstructive)
 - **Color change** (cyanosis, pallor, erythema, plethora)
 - **Marked change or loss in muscle tone** (limpness)
 - **Episode of choking or gagging**
 - b. Determine the severity, nature and duration of the episode.
 - Was child awake or sleeping at time of episode
 - What resuscitative measures were taken
 - c. Age 3 years or less?
 - d. Obtain a complete medical history to include:
 - Known chronic diseases
 - Evidence of seizure activity

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- Current or recent infection
- Recent trauma
- Medication history
- Known gastroesophageal reflux or feeding difficulties
- Unusual sleeping or feeding patterns

e. Treatment:

- Assume the history given is accurate.
- Perform a comprehensive physical assessment that includes general appearance, skin color, extent of interaction with the environment, and evidence of current or past trauma. **Note: Exam May Be Normal**
- Perform glucose analysis if hypoglycemia suspected (Blood sugar < 60 mg/dl) see altered level of Consciousness policy P-24.
- Treat any identifiable causes as indicated.
- Transport. **Note: If parent/guardian refuses medical care/and or transport, a consult with Base Hospital physician is required prior to completing an AMA form. I**
- If prehospital care personnel believe a parent or other legal representative of a minor is making a decision which appears to be endangering the health and welfare of the minor by refusing indicated immediate care or transport, law enforcement authorities should be involved.

PEDIATRIC AVERAGE WEIGHTS & V/S - RECOMMENDED ET TUBE, SUCTION & BLADE SIZES						
AGE	AGE WEIGHT (KG)	PULSE	RESP	ET TUBE *	BLADE #	SUCTION CATHETER E, F
Preemie	< 1 - 2.5			See separate table	0	5 or 6
Term NB	2.5 – 4	100 – 160	30 – 50	3 – 3.5 (uncuffed)	1	6 or 8
6 Months	7	80 – 160	30 – 50	3.5 – 4 (uncuffed)	1	8
1 Year	10	80 – 160	24 – 40	4 – 4.5 (uncuffed)	1	8
2 Years	12	80 – 130	24 – 32	4.5 (uncuffed)	2	8 or 10
4 Years	16	80 – 120	22 – 28	5.0 (uncuffed)	2	10
6 Years	20	75 – 115	22 – 28	5.5 (uncuffed)	2	10
8 Years	25	70 – 110	20 – 24	6.0 (either)	2	10 or 12
10 Years	34	70 – 110	20 – 24	6.5 (either)	2	12
12 Years	41	65 – 110	16 – 22	7.0 (cuffed)	3	12

* ET tube selection should be based on the child's size, not age. One size larger or one size smaller should be allowed for individual variations.

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ADMINISTRATION OF MEDICATION VIA ET TUBE
<p>NOTE: For endotracheal administration use higher doses (2 to 10 times the IV dose); During pediatric resuscitation any vascular access, IO or IV, is preferable, but if you cannot establish vascular access, you can give lipid-soluble drugs such as lidocaine, epinephrine, atropine, and naloxone (“LEAN”) via the endotracheal tube. Flush with 5 mL of normal saline followed by 5 assisted manual ventilations. If CPR is in progress, stop chest compressions briefly during administration of medication (<i>AHA Guidelines 2005, pg 170</i>). Note: Narcan via the endotracheal route is not included in any S-SV EMS Agency pediatric protocols.</p>

HYPOTENSION IS DEFINED AS:	
AGE	SBP (MM HG)
Term neonates (0 – 28 days of age)	< 60
Infants 1 month to 12 months	< 70
Children > 1 year to 10 years	< 70+(2 x age in years)
> 10 years	< 90

PEDIATRIC TRAUMA SCORE (PTS): CATEGORY DEFINITIONS			
COMPONENT	+2	+1	-1
Size	Child/adolescent, > 20 kg	Toddler, 11-20 kg	Infant, < 10 kg
Airway	Normal	Assisted O ₂ , mask cannula	Intubated, ETT, EOA, Cric
Consciousness	Awake	Obtunded; lost consciousness	Coma; unresponsive
Palpable pulse Systolic BP	Palpable radial or brachial pulse Good peripheral pulses, perfusion > 90mm Hg	Palpable femoral pulse Peripheral pulses, pulses palpable 51-90 mm Hg	Weak or no pulses < 50 mm Hg
Fracture	None seen or none suspected	Single closed Fx anywhere or fracture suspected	Open, multiple Fx
Cutaneous	No visible injury	Contusion, abrasion; laceration < 7cm; not through fascia	Tissue loss; and GSW/Stab; through fascia

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PEDIATRIC NEUROLOGICAL ASSESSMENT		
Glasgow Coma Scale: (Score 3-15)		
Score	< 2 years or Dev. delayed	Over 2 years of age
Eye Opening		
4	Spontaneous	Spontaneous
3	To Voice	To Voice
2	To Pain	To Pain
1	None	None
Best Verbal Response		
5	Coos, babbles	Orientated
4	Irritable cry	Confused
3	Cries to pain	Inappropriate words
2	Moans to pain	Incomprehensible sounds
1	None	None
Best Motor Response		
6	Spontaneous	Obeys commands
5	Withdraws to touch	Localizes pain
4	Withdraws to pain	Flexion Withdrawal
3	Abnormal flexion	Abnormal flexion
2	Abnormal extension	Abnormal extension
1	None	None

Neonatal suggested ET Tube sizes and depth of insertion according to weight and gestational age			
Weight Grams	Gestational age, wk	Tube size mm (ID)	Depth of insertion From upper lip, cm
< 1000	< 28	2.5	6.5-7
1000-2000	28-34	3.0	7-8
2000-3000	34-38	3.5	8-9
>3000	>38	3.5-4.0	>9

APGAR SCORING CHART				
	SIGN	0	1	2
A	APPEARANCE (Color)	Blue, pale	Body pink, hands and feet blue	Completely pink
P	Pulse (Heart Rate)	Absent	Slow (below 100)	Over 100
G	Grimace (Muscle Tone)	Flaccid limp extremities	Some flexing of extremities	Active motion
A	Activity (Response to flick on sole)	No Response	Some motion, cry	Cough, sneeze, vigorous cry
R	Respiratory effort	Absent	Slow, irregular	Good, crying