

**SIERRA SACRAMENTO VALLEY EMS AGENCY
TREATMENT PROTOCOL – MEDICAL EMERGENCY**

**PEDIATRIC
REFERENCE NO. P-1**

SUBJECT: GENERAL PEDIATRIC PROTOCOL

PURPOSE:

To establish general guidelines for the treatment of pediatric patients encountered by EMS personnel who present with a medical complaint and/or a traumatic injury.

AUTHORITY:

California Health & Safety Code, Division 2.5; Chapter 6, Article 2.5, Section 1798.160 et seq.

California Code of Regulations, Title 22, Division 9.

DEFINITIONS:

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

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

PRINCIPLES / PROCEDURES:

Base / Modified Base Hospital Contact – A paramedic shall make base / modified base contact prior to releasing children ≤ 3 years of age at scene.

Pediatric Trauma

1. When ground transport times do not exceed 45 minutes, the following pediatric trauma patients should be transported directly to UCDMC (S-SV EMS Policy Reference No. 860)
 - A. Children ≤ 14 years of age with a Pediatric Trauma Score ≤ 8
 - B. All children ≤ 6 years of age who meet anatomic and/or physiologic criteria
2. All critically injured children ≤ 14 years of age who are transported by helicopter shall be transported to UCDMC

Effective Date: 01/01/2010

Date last Reviewed / Revised: 10/09

Next Review Date: 10/2011

Page 1 of 4

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SUBJECT: GENERAL PEDIATRIC PROTOCOL

3. EXCEPTIONS:

- A. 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.

- B. If unable to establish an airway, transport to the closest hospital.

- C. 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.

Pediatric Intubation – Perform endotracheal intubation only if bag-valve-mask ventilation is unsuccessful or impossible

End-tidal CO₂ detection – Secondary confirmation of proper ET tube placement is required for pediatric patients by end-tidal CO₂ detection, utilizing colorimetry, capnometry, or capnography immediately after intubation and throughout transport.

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 (S-SV EMS Policy Reference No. 1101).

Medication Doses – A length based pediatric resuscitation shall be used in determining sizes of equipment and medication dosages in the out-of hospital setting.

SUBJECT: GENERAL PEDIATRIC PROTOCOL

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

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

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

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ADMINISTRATION OF MEDICATION VIA ET TUBE

Note: For endotracheal administration of medication, 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 medications such as epinephrine, atropine and Nalaxone 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 (*AHA 2005 Guidelines, pg 170*).

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

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,	Palpable femoral pulse Peripheral pulses, pulses	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