

**COUNTY OF SACRAMENTO
EMERGENCY MEDICAL SERVICES AGENCY**



Program Document: **Pediatric Shock**

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Signature on File

EMS Medical Director

Signature on File

EMS Administrator

Purpose:

- A. To establish the treatment standard in treating pediatric patients assessed to be in shock.

Authority:

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

Notes:

- A. Shock exists anytime there is inadequate perfusion of the body tissue to meet the metabolic demands of the body. Signs of Pediatric shock include tachycardia, altered level of consciousness, weak central pulses, weak or absent peripheral pulses, prolonged capillary refill (> two (2) seconds), bradycardia, hypotension and irregular respirations. Shock in children may be subtle and difficult to recognize. Tachycardia may be the only sign noted. Hypotension is a late sign of shock. Determining a blood pressure may be difficult and readings may be inaccurate in children < three (3) years of age.
- B. Compensated shock can present as:
 - 1. Tachycardia, cool extremities, capillary refill time of > two (2) seconds (despite warm ambient temperature), weak peripheral pulses compared with central pulses and normal blood pressure.
- C. Decompensated shock can present as:
 - 1. Hypotension and /or bradycardia (late findings), decreased mental status, decreased urine output, tachypnea, and non-detectable distal pulses with weak central pulses.

- D. The evaluation of a patient in shock must include a search for its cause from one of the forms of shock:
1. Hypovolemic
 2. Hemorrhagic
 3. Cardiogenic
 4. Neurologic
 5. Insulin Shock
 6. Anaphylactic
 7. Sepsis
- E. In addition to the fluid resuscitation and transport noted below, treat any underlying cause as directed by protocol.
- F. Avoiding hypothermia is imperative to the management of the critical pediatric patient. Passive warming measures including warm ambient/environmental temperature, use of blanket, covering head may be used to maintain normal body temperature $>37^{\circ}\text{C}$ or 98.6°F .

Protocol:

BLS:

1. Supplemental O₂ as necessary to maintain SpO₂ $\geq$ 94%. Use the lowest concentration and flow rate of O₂ as possible.
2. Airway adjuncts as needed.
3. Assess for trauma.
4. Maintain body temperature
5. Determine blood glucose. If blood glucose is < 60 mg/dl treat per protocol PD# 9005-Decreased Sensorium.
6. Transport.

ALS:

1. Airway adjuncts as needed.
2. Cardiac Monitoring.
3. Vascular access
4. For any signs of shock, attach Normal Saline (NS) and administer fluid challenge of 20 ml/kg if systolic blood pressure less than minimum for age.
5. **Push Dose Epinephrine:** 1mcg/kg (max single dose 10mcg). May repeat every 2 minutes slow IV/IO push. If continued signs of shock, repeat 20 ml/kg fluid bolus x 1 concurrently.

Cross Reference:

PD# 8837 - Pediatric Airway Management

PD# 9016 - Pediatric Parameters