Contra Costa County Emergency Medical Services

Pediatric Hypotension/Shock

**History**
- Blood loss
- Vomiting
- Diarrhea
- Fever
- Infection

**Signs and Symptoms**
- Restlessness or confusion
- Weakness or dizziness
- Weak, rapid pulse
- Pale, cool, clammy skin signs
- Delayed capillary refill
- Hypotension
- Tarry stools

**Differential**
- Shock (hypovolemic, cardiogenic, septic, neurogenic, or anaphylaxis)
- Trauma
- Infection
- Dehydration
- Congenital heart disease
- Medication or Toxin

---

**Diabetic TG if indicated**

**Blood glucose analysis**
- IV/IO procedure
- Cardiac monitor
  - Consider 12-Lead ECG
- Airway TGs if indicated

**Cardiac/Arrhythmia TG if indicated**

---

**History, exam and circumstances often suggest (type of shock)**

**WAS TRAUMA INVOLVED?**

Yes

- Consider hypovolemic (bleeding), neurogenic (spinal injury) and obstructive (pneumothorax) shock

- Spinal motion restriction, if indicated
- Control hemorrhage and wound care, as indicated

- Normal Saline bolus IV/IO
  - Use Pediatape and refer to dosing guide
  - Repeat to age dependent goal SBP Maximum 1L

- Chest Decompression procedure if indicated

- Exit to Trauma TG if indicated

No

- Consider hypovolemic (dehydration or GI bleed), cardiogenic (STEMI or CHF), distributive (sepsis or anaphylaxis) and obstructive (PE or cardiac tamponade) shock

- Normal Saline bolus IV/IO
  - Use Pediatape and refer to dosing guide
  - Repeat to age dependent goal SBP Maximum 1L

- Chest Decompression procedure if indicated

**Exit to appropriate TG**

---

**Notify receiving facility. Contact Base Hospital for medical direction, as needed.**

**MD**
- Normal Saline
  - Contact Base Hospital Physician for additional order
Pearls

- Hypotension is age dependent. This is not always reliable and should be interpreted in context with the patient’s typical BP, if known. Shock may be present with a seemingly normal blood pressure initially.

  Hypotension is defined as:
  - Neonate: < 60mmHg or weak pulses
  - Infant: < 70mmHg or weak pulses
  - 1-10 years: < 70mmHg + (age in years x2)
  - Over 10 years: < 90mmHg

- Systemic BP goals are defined as:
  - Neonate: > 60mmHg
  - Infant: > 70mmHg
  - 1-10 years: > 70mmHg + (age in years x2)
  - Over 10 years: > 90mmHg

- Common pediatric terms used to describe children are defined as:
  - Newly born are ≤ 24 hours old
  - Neonates are ≤ 28 days old
  - Infants are ≤ 1 year old

- Normal blood pressure, delayed capillary refill, diminished peripheral pulses, and tachycardia indicates compensated shock in children.

- Hypotension and delayed capillary refill > 4 seconds indicates impending circulatory failure.

- Systolic blood pressure in children may not drop until the patient is 25-30% volume depleted. This may occur through dehydration, blood loss, or an increase in vascular capacity (e.g. anaphylaxis).

- Decompensated shock (hypotension with capillary refill > 5 seconds) may present as PEA in children.

- Sinus tachycardia is the most common cardiac rhythm in encountered in children.

- SVT should be suspected in the heart rate is greater than 180 in children ages (1-8) or greater than 220 in infants.

- Hypoglycemia may be found in pediatric shock, especially in infants.

- Pediatric shock victims are at risk for hypothermia due to their increased body surface area, exposure, and rapid administration of IV/IO fluids.