



**ORANGE COUNTY EMERGENCY MEDICAL SERVICES
BASE HOSPITAL TREATMENT GUIDELINES**

#: BH-P-015
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Org. Date: 4/01/2013
Revise Date: 7/30/2024

GENERAL INJURY AND TRAUMA – PEDIATRIC

BASE GUIDELINES

- Determine ALS Standing Order treatments/procedures rendered prior to base hospital contact. Use ALS standing order as guidelines for treatments/procedures not initiated prior to base hospital contact.
- Patients meeting Trauma Triage Criteria should be routed to the nearest available Trauma Receiving Center.

GENERAL:

- Needle Thoracostomy (Procedure PR-65) consider for trauma victims, particularly chest with severe respiratory distress and signs and symptoms of life-threatening tension pneumothorax. Signs and symptoms may include:
 - Progressively worsening dyspnea
 - Hypotension
 - Decreased or diminished breath sounds on affected side
 - Distended neck veins (bilateral)
 - Tracheal deviation away from the affected side
- Pediatric GCS (Procedure B-02):

Variable	Description	Score
Eye Opening	Eyes opening spontaneously	4
	Eyes opening to sound	3
	Eyes opening in response to painful stimulus	2
	No eye opening	1
Verbal Response	Smiles, oriented to sounds, follows objects, interacts, coos	5
	Irritable cries and inappropriate interactions	4
	Cries in response to pain	3
	Inconsolable and moans in response to pain	2
	No verbal response	1
Motor Response	Infant moves spontaneously or purposefully	6
	Infant withdraws form touch	5
	Infant withdraws from pan	4
	Abnormal flexion to pain for an infant (decorticate response)	3
	Extension to pain (decerebrate response)	2
	No motor response	1
Maximum Score		15

AIRBAG DEPLOYMENT:

- Consider potential for eye injury, blunt force trauma to chest and abdomen.

ALS STANDING ORDER

AUTO ACCIDENT WITH AIRBAG DEPLOYMENT:

- For eye irritation, brush off powder around upper face and irrigate with water.
- Pulse oximetry, if oxygen saturation less than 95% provide:
 - Oxygen by mask (high flow) or nasal cannula (6 L/min) as tolerated.
- For respiratory distress with wheezes, administer albuterol:
 - Albuterol, continuous nebulization of 5 mg/6mL** as tolerated
- Base contact required if meets Trauma Triage Criteria (OCEMS Policy # 310.30)
- If does not meet Trauma Triage Criteria, transport to nearest ERC (ALS escort if Albuterol required).

EXTERNAL BLEEDING/HEMORRHAGE:

- Apply direct pressure to bleeding site to control blood loss
 - If direct pressure successful in controlling extremity bleeding site, apply pressure dressing
 - For continued bleeding after application of direct pressure, consider use of hemostatic dressing with direct pressure
 - Use tourniquet application when upper or lower extremity bleeding is not controlled with direct pressure or hemostatic dressing with pressure dressing.
- IV/IO access if hypotensive or per paramedic judgement (initiate transport as soon as possible):
 - Administer **20 mL/kg normal saline** (maximum 250 mL) IV/IO bolus and make BH contact.
 - If remains hypotensive, may repeat same dose twice for total of three boluses as a standing order.
- Make Base Hospital contact (CCERC base preferred) for all hypotensive hemorrhage cases for Trauma Center triage consideration.

Approved:

Carl Schultz, MD

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BASE GUIDELINES

EXTERNAL BLEEDING/HEMORRHAGE:

1. Infuse **Normal Saline IV** wide open as an initial **20 mL/kg bolus** and repeat two more times if needed to maintain perfusion.

EYE INJURY:

1. For continued pain after field administration of Morphine or Fentanyl, may provide Base Order for repeat:

▶ **Morphine 0.1 mg/kg IV/IM**

- Maximum single dose of 5 mg
- Maximum total dose of 10 mg

OR

▶ **Fentanyl 2 mcg/kg IN/IV/IM**

- Maximum single dose of 50 mcg
- Maximum total dose of 100 mcg

2. For vomiting, consider **Ondansetron 4 mg ODT** per ALS SO (on right).

ISOLATED SKELETAL TRAUMA (FRACTURES OR AMPUTATIONS) NOT MEETING TRAUMA TRIAGE CRITERIA:

1. For extremity fractures, always note presence or absence of peripheral pulse and sensation.
2. For continued pain after field administration of Morphine or Fentanyl, may provided Base Order for repeat:

▶ **Morphine 0.1 mg/kg IV/IM**

- Maximum single dose of 5 mg
- Maximum total dose of 10 mg

OR

▶ **Fentanyl 2 mcg/kg IN/IV/IM**

- Maximum single dose of 50 mcg
- Maximum total dose of 100 mcg

ALS STANDING ORDER

EYE INJURY

1. Cover injured eye without applying pressure to globe if required to keep child from rubbing or touching eye.
2. Elevate head 30 degrees or more if spinal motion restriction not required.
3. Morphine sulfate or Fentanyl as needed for severe pain. Contact Base (CCERC base preferred) if less than or equal to 2 years-old:
 - ▶ **Morphine sulfate 0.1 mg/kg IV/IM** (maximum single dose of 5 mg). May repeat same dose once after 3 minutes (do not exceed total combined administration of 10 mg)
 - OR
 - ▶ **Fentanyl 2 mcg/kg IN/IV/IM** (maximum single dose of 50 mcg), may repeat same dose once after 3 minutes (do not exceed total combined administration of 100 mcg).
4. For nausea or vomiting in child 4 years or older, give Ondansetron (Zofran™):
 - ▶ **Ondansetron (Zofran™) 4 mg ODT** tablet to dissolve orally.
5. Transport to nearest available ERC (ALS escort if medication administered).

ISOLATED EXTREMITY INJURY (FRACTURES OR DEEP LACERATIONS) NOT MEETING TRAUMA TRIAGE CRITERIA:

1. Splint or immobilize fractured extremities (note breaks of skin or open wounds in fractured areas).
2. For fractures, note presence or absence of peripheral pulses and sensation.
3. Cover deep lacerations with sterile dressing if bleeding control not required.
4. Morphine sulfate or Fentanyl as needed for severe pain. Contact Base (CCERC base preferred) if less than or equal to 2 years-old:
 - ▶ **Morphine sulfate 0.1 mg/kg IV/IM** (maximum single dose of 5 mg). may repeat same dose once after 3 minutes (do not exceed total combined administration of 10 mg)
 - OR
 - ▶ **Fentanyl 2 mcg/kg IN/IV/IM** (maximum single dose of 50 mcg), may repeat same dose once after 3 minutes (do not exceed total combined administration of 100 mcg).
5. Transport to nearest ERC (ALS escort if morphine or fentanyl administered).

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BASE GUIDELINES

IMPALED OBJECTS:

1. Generally impaled objects should not be removed in the field unless needed to facilitate transport in an ambulance.
2. Impaled objects in the face or neck should only be removed in the field if the object is compromising the airway and breathing.

ALS STANDING ORDER

IMPALED OBJECTS NOT MEETING TRAUMA TRIAGE CRITERIA:

1. Stabilize impaled object (in place) when possible unless causes delay in extrication or transport.
2. DO NOT remove impaled objects in face or neck unless breathing is compromised.
3. Morphine sulfate or Fentanyl as needed for severe pain. Contact Base (CCERC base preferred) if less than or equal to 2 years-old:
 - ▶ **Morphine sulfate 0.1 mg/kg IV/IM** (maximum single dose of 5 mg), may repeat same dose once after 3 minutes (do not exceed total combined administration of 10 mg)
 - OR
 - ▶ **Fentanyl 2 mcg/kg IN/IV/IM** (maximum single dose of 50 mcg), may repeat same dose once after 3 minutes (do not exceed total combined administration of 100 mcg).
4. Transport to nearest available ERC (ALS escort if morphine or fentanyl administered).

SUSPECTED TRAUMATIC BRAIN INJURY (TBI)

1. Monitor all patients with continuous Pulse Oximetry.
 - ▶ *Provide supplemental oxygen via nasal canula at 6 L/min flow rate or high flow oxygen by face mask and maintain P.O. > 90%.*
 - If unable to maintain P.O. > 90% with oxygen alone, reposition airway as appropriate (consider c-spine precautions). If P.O. now > 90%, continue monitoring.
 - If P.O. still < 90%, deliver positive pressure ventilation with bag-valve-mask in conjunction with airway adjuncts. If P.O. now > 90%, continue monitoring.
2. Monitor all patients with continuous End Tidal CO₂.

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ALS STANDING ORDER

- ▶ *Maintain $ETCO_2$ between 35 and 45 mmHg if possible, especially for ventilated patients.*

3. Monitor systolic blood pressure for all patients every 5 minutes.

For patients aged 0 – 9 years:

- ▶ *Blood pressure below $70 + (age \times 2)$ mmHg, administer 20 mL/kg Normal Saline IV/IO (maximum 250 mL), and repeat X 3 as standing order if needed to maintain systolic BP $> 70 + (age \times 2)$ mmHg.*

For patients aged 10 years and older:

- ▶ *Blood pressure below 90 mmHg, administer 20 mL/kg Normal Saline IV/IO (maximum 250 mL), and repeat X 3 as standing order if needed to maintain systolic BP > 90 mmHg.*

4. Assess GCS in all patients. For patients age ≤ 2 years, use P-GCS.

5. Transport to trauma center, Level 1 or Level 2 pediatric trauma center if possible.

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