Prehospital
Patient Care Protocols

Section VI
Trauma / Environmental Patient Care

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Prehospital Patient Care Protocols

V. Trauma/Environmental Patient Care

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1. Patient Assessment -Trauma

Indications: Trauma is a significant health care problem and is the leading cause of death in Americans between the ages of 1 and 44. Two Key questions are: What happened? How was the patient injured? Trauma Assessment is indicated for any person whose mechanism of injury involved environmental factors (burns, drownings, toxic inhalation) or motion, the transfer of a significant amount of energy to that patient (motor vehicle collisions, projectile penetrations, rapid deceleration).

ASSESSMENT PROTOCOL:

Scene Size-up

1. Consider the safety of the EMS team and the patient.
2. Obtain an overview of the scene and the patient.
3. Determine the number of patients or additional resources needed.
4. Take body substance isolation (BSI) precautions.

Initial Assessment: (Primary Survey) This should be performed rapidly and all life-threatening problems should be treated immediately. If needed, oxygen should be administered immediately. Vital signs can be taken during the survey.

General Impression

- Form a general impression of patient based on initial presentation, mechanism of injury, and/or nature of the illness.
- Begin the assessment of the patient's LOC by initially contacting the patient.

Airway / C-spine - Take control of the C-Spine or direct another provider to control the C -spine with manual in line immobilization. Ensure that the patient has an open airway. Assist if needed with jaw thrust, or airway adjuncts as indicated.

Breathing - Check adequacy of respirations / ventilation; listen to breathing. Auscultate breath sounds with stethoscope.

- Apply Oxygen as appropriate.
- Immediately manage any injury that compromises breathing.
  (For example– tension pneumothorax)

Circulation - Check distal and central pulses; check skin temperature and color; check and control major external bleeding. Begin volume replacement (usually during transport to hospital). Use two large bore IV's with appropriate fluids.

Disability / Level of Consciousness

- Perform rapid neurological survey using AVPU mnemonic:
  - **A** **Alert**
  - **V** Responsive to V**erbal** stimulus
  - **P** Responsive to **Pain**
  - **U** **Unresponsive**
- Check for signs or symptoms of damage to central nervous system.
- Use of Glasgow Coma Scale, Check pupils for response.

Expose - Remove clothing as appropriate to examine and evaluate medical problems.

Determine priority of the patient:

- Perform a rapid assessment or focused assessment based on the needs of the patient.
- Evaluate the need and call for ALS as appropriate.

Rapid assessment - Assessment of the patient to identify life-threatening injuries or conditions.

> **Head** — Inspect mouth, nose and facial bones. Inspect and palpate scalp and ears. Check eyes/pupils.
>
> **Neck** — Check position of Trachea. Inspect jugular veins. Palpate C Spine.
>
> **Chest** — Inspect, palpate, and auscultate for breath sounds.
>
> **Abdomen/Pelvis** — Inspect and palpate abdomen. Assess for pelvic injuries. Consider use of PASG/MAST as indicated.
>
> **Lower Extremities** — Inspect and palpate legs and feet. Check motor, sensory and distal circulation.
>
> **Upper Extremities** — Inspect and palpate arms and hands. Check motor, sensory and distal circulation.
>
> **Back and Buttocks** — Inspect and Palpate.

Focused Assessment - Assessment of the patient based on his/her condition.

Patient History - Use the acronym SAMPLE to gather information on the patient's medical history.

> **S** - Signs and symptoms
> **A -** Allergies
> **M -** Medications
> **P -** Pertinent past medical history
> **L -** Last oral intake
> **E** - Events leading up to the event

Vital signs - Pulse, blood pressure, respirations, lung sounds, skin color and texture, and oxygen saturation.

Treatment and transportation - Consider interventions and transportation of the patient.

On-going Assessment - Reassess the patients condition regularly for changes. Reassess the patients airway, breathing, circulation, and vital signs.

- Every 5 minutes for unstable patient.
- Every 10 – 15 minutes for stable patient.

Detailed Exam - Complete exam of the patient to gather more detailed information than was gathered in the Initial assessment or Focused assessment. The patient's injury or illness will determine the need to perform this assessment. Usually performed enroute to the hospital.

2. The Trauma Patient
Initial Management

Overview: Often, the multiple injured trauma patient can overwhelm responding pre-hospital providers. Several key concepts in the management of the trauma patient will allow for the expedited, appropriate care:

1. Always perform a scene survey when approaching the patient. Look for hazards (signs of violence, additional patients, etc.)

2. Begin every patient assessment with the ABCD's of the Initial Assessment.

3. Assume spinal cord injury in all multiply injured patients and patients with significant mechanism of injury. Protect the spinal cord (manual immobilization, collar and back board) throughout the primary and secondary survey and during transport.

4. Administer 100% oxygen either by non-rebreather mask or advanced airway to all multiple or significantly injured patients.

5. The trauma patient should be transported without delay. **On scene time should be limited to 10 minutes after the patient is extricated.**

6. Establish 2 large bore IV's enroute to receiving facility. **DO NOT** delay transport while attempting IV access.

7. Continually reassess patients' status.

8. Transport to the most appropriate receiving facility.

Prehospital Goals: Establish and maintain patent airway, assist breathing, control hemorrhage, determine critical injuries and patient stability, determine "load and go."

BLS and ALS

Initial Assessment:

Assess Airway; Maintain C Spine Control.
If problem, refer to Airway Management Protocol.
▼
Assess Breathing.
If problem, refer to Airway Management Protocol.
▼
Assess Circulation.
If problem, refer to Shock Protocol.
▼
Assess Disability
If problem, refer to appropriate protocol.
▼
If patient meets "Load and Go" criteria,
Begin transport to appropriate facility.
▼

Rapid or Focused Assessment:

Assess and refer to appropriate protocol
- *Head Injury
- *Spinal Injury
- *Amputated Part
- *Evisceration
- *Impaled Object
- *Fracture
- *Penetrating Thoracic Trauma
- *Ophthalmologic injuries

Load and Go Criteria

I. Primary Situations
- **A.** Respiratory Difficulty
- **B.** Altered Level of Conscious
- **C.** Shock or Uncontrolled Hemorrhage
- **D.** Penetrating Injuries of the Thorax or Abdomen

II. Secondary Situations
- **A.** Bilateral Femur Fractures
- **B.** Indication of Blood in the Abdomen
- **C.** Unstable Pelvis
- **D.** Development of any Primary Load and Go Situations

Prehospital Guidelines for Transport Directly To a Level 1 Trauma Center

In the following cases, prehospital care providers in urban or suburban areas should consider transport directly to a Level 1 Trauma Center (or in rural areas, air medical evacuation should be seriously considered).

I. Neurosurgical Cases
- A. Patients with severe multi-system trauma in association with a head injury.
- B. Head-injured patients who do not follow commands (Glasgow Motor Response of <6– not to be mistaken for Glasgow Coma Scale).
- C. Patients with penetrating head injury.
- D. Patients with obvious spinal cord injury.

II. Orthopedic Cases
- A. Patients with multiple long-bone fractures with associated significant mechanism of injury.
- B. Patients who present with an unstable pelvis.
- C. Amputations with the potential for replantation.

III. Other Trauma Cases
- A. Patients with significant burns as defined by ABA guidelines. (see Appendix A)
- B. Patients with obvious need for significant medical resources.
- C. Patients with severe multi-system trauma.

Note: In cases of uncorrected airway compromise, uncontrolled bleeding, or if CPR is in progress, patients should be transported to the closest emergency department.

3. Amputated Part

Overview: Amputation may be life threatening if there is massive hemorrhage. Usually, bleeding is self limited because of spasm of the severed arteries. Use direct pressure with saline pads if needed. ***Use a tourniquet only as a last resort*** since it may reduce the viability of the stump and lessen the chance of re-implantation. Encourage the patient, but do not give false hope.

Prehospital Goal: Control Bleeding, gently care for the amputated part and transport as quickly as possible. Notify the receiving facility early so that a surgical team can be assembled. Continue to monitor for signs of shock. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Control Hemorrhage.

⇩

Administer Oxygen per patient assessment.

⇩

Retrieve Amputated part and place in a plastic bag. Place the bag in a container of ice and water if time permits. Do not attempt to clean the part. Do not place the part on dry ice. Retrieve any parts possible without delaying transport. Take both the parts and the patient to the same hospital.

⇩

Transport promptly in position of comfort depending on Mechanism of Injury.

⇩

Reassess vital signs as indicated.

⇩

Notify receiving facility of amputation.

ALS

Control Hemorrhage.

⇩

Administer Oxygen per patient assessment.

⇩

Retrieve Amputated part and place in a plastic bag. Place the bag in a container of ice and water if time permits. Do not attempt to clean the part. Do not place the part on dry ice. Retrieve any parts possible without delaying transport. Take both the parts and the patient to the same hospital.

⇩

Transport promptly in position of comfort depending on Mechanism of Injury.

⇩

Establish large bore IV's of normal saline or LR in non-amputated part . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Reassess vital signs as indicated.

⇩

Notify receiving facility of amputation.

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4. Burns

Overview: Burns can be caused by direct thermal injury, exposure to caustic chemicals, and contact with electrical sources. Factors to be considered when treating burn patients include the nature of the burn, whether the patient was in an enclosed space, the source of the burn, the patient's history, the duration of the contact and the temperature of the thermal agent. Critical Burns include those that involve the respiratory tract, second degree burns over 20% of the body, third degree burns over 5% of the body and any burns that are circumferential, or involving the hands, face, feet, or genitalia. Any of these patients or any burned patients over 50 or under 10 should be evaluated at the regional burn center.

Prehospital Goal: Always protect providers from exposures from hazardous materials. Extrication and removal should be done by trained personnel. Move the patient to a safe environment, administer 100% oxygen, protect the airway and assist ventilations if indicated. Treat for shock. Rapid transport to an appropriate receiving facility is indicated for any patient presenting with altered LOC, difficulty breathing, or cardiovascular compromise. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Stop the burning process.

⇩

Administer 100% Oxygen per patient assessment. Use humidified oxygen if available.

⇩

Copious normal saline/sterile water irrigation for caustic substances. Cover thermal burns with dry sterile dressing. An acceptable alternative is "Water Jel" dressings for any percent BSA and/or any age.

⇩

Determine extent of burn.

⇩

If shock is present. Refer to **Medical Patient Care Protocol – Hypovolemic Shock - Medical (Non Cardiac).**

⇩

Transport promptly in position of comfort.

⇩

ALS

Stop the burning process.

⇩

Administer 100% Oxygen per patient assessment. Use humidified oxygen if available.

⇩

Copious normal saline/sterile water irrigation for caustic substances. Cover thermal burns with dry sterile dressing. An acceptable alternative is "Water Jel" dressings for any percent BSA and/or any age.

⇩

Determine extent of burn.

⇩

Place patient on cardiac monitor.

⇩

Establish IV of Lactated Ringers (If LR is not available use NS). If greater than 15% burn, run IV at a rate of 300 cc's per hour.

⇩

BLS	ALS
Reassess vitals signs as indicated.	If shock is present. Refer to **Medical Patient Care Protocol – Hypovolemic Shock - Medical (Non Cardiac).** ⇩ Consider Pain Management: Refer to **Trauma/Environmental Patient Care Protocol – Trauma Patient Pain Management.** ⇩ Transport promptly in position of comfort. ⇩ Reassess vitals signs as indicated.

Appendix A

American Burn Association Referral Criteria

The American Burn Association (ABA) has identified the following injuries as those usually requiring a referral to a burn center. Patients with these burns should be treated in a specialized burn facility after initial assessment and treatment at an emergency department.

A. Partial thickness burns greater than 10% total body surface area (TBSA)
B. Burns that involve the face, hands, feet, genitalia, perineum, and major joints
C. Third degree burns in any age group
D. Electrical burns including lightning injury
E. Chemical burns
F. Inhalation injury
G. Burn Injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
H. Any patients with burns and concomitant trauma in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in trauma center before being transferred to the burn center
I. Burned children in hospitals without qualified personnel or equipment for the care of children
J. Burn injury in patients who will require special social, emotional, and/or long term rehabilitative intervention

5. Evisceration

Overview: Evisceration can be accompanied by hemorrhage and the patient may present in profound shock. A significant amount of body heat can be lost from the abdomen. Use saline gauze with a sterile moistened abdominal dressing to cover and take steps to prevent hypothermia. It is imperative that the patient be transported without delay.

Prehospital Goal: Minimize blood loss if possible and cover the wound. Establish IV's enroute and transport to an appropriate receiving hospital. Continue to monitor for signs of shock. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Administer oxygen per patient assessment.

⇩

Cover eviscerated organs with sterile gauze soaked in saline. Do not attempt to replace the organs.

⇩

Assess patent for possible impaled objects. Do not remove the impaled objects.

⇩

Transport promptly in the position of comfort depending on Mechanism of Injury.

⇩

Reassess vital signs as indicated.

ALS

Administer oxygen per patient assessment.

⇩

Cover eviscerated organs with sterile gauze soaked in saline. Do not attempt to replace the organs.

⇩

Establish large bore IV's of normal saline or LR . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Assess patent for possible impaled objects. Do not remove the impaled objects.

⇩

Transport promptly in the position of comfort depending on Mechanism of Injury.

⇩

Consider placing patient on cardiac monitor if time permits.

⇩

Reassess vital signs as indicated.

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6. Head Injury

Overview: Nearly half of all victims of serious trauma have injury to the head. Head injury should be suspected with any loss of consciousness, however brief, or when the mechanism suggests injury (such as a starred windshield). If the patient is hypotensive, look for another injury. Any patient with significant head injury also has a C-spine injury until proven otherwise. The most important single sign in the evaluation of the head injured patient is a changing level of consciousness.

Prehospital Goal: Immobilize the head and the entire spine. Continually reassess for changes in the level of consciousness. Transport as quickly as possible. Consider other causes of changing level of consciousness (refer to Unconscious Patient Protocol). ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Maintain C Spine Immobilization / Establish Airway.

⇩

Administer High Flow Oxygen per Patient Assessment.

⇩

Maintain Ventilations

- Ventilate @ 8 – 12 BPM if patient is not adequately ventilating.

⇩

Determine Glascow Coma Scale.

⇩

Transport Immobilized to Appropriate Facility.

⇩

Reassess vital signs as indicated.

ALS

Maintain C Spine Immobilization / Establish Airway.

⇩

Administer High Flow Oxygen per Patient Assessment.

⇩

Maintain Ventilations

- Ventilate @ 8 – 12 BPM if patient is not adequately ventilating.

⇩

Determine Glascow Coma Scale.

⇩

Establish large bore IV's of normal saline or LR . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

If signs of increased ICP and not hypotensive, then:

- Elevate the head/torso slightly (20 - 30 degrees). Keep the head in the midline position and avoid excessive compression around the neck by cervical collars or devices to secure an advanced airway.

ALS

Maintain paCO2 35 - 40 mmHg if monitoring is available.

⇩

Transport Immobilized to Appropriate Facility.

⇩

Reassess Vital signs as indicated.

⇩

If time, place patient on Cardiac Monitor.

7. Impaled Objects

Overview: Impaled objects often are distracting to pre-hospital providers. Discipline is needed to follow the ABC's of a primary survey. Since impaled objects can tamponade bleeding sites, removing the objects anywhere but in surgery can cause a rapid, fatal hemorrhage. Movement of the impaled object will cause intense pain and potential hemorrhage. Care must be taken to immobilize the object to prevent movement, while still maintaining the goal of rapid transport of the patient. Contact Medical Control early if the patient cannot be transported with the impaled object in place.

Prehospital Goal: Rapid assessment of the patient, immobilization and transport. Start IV's on scene if transport is delayed by other factors. Notify the receiving facility early so that a surgical team can be assembled. Remove the impaled object only if it interferes with the patient's airway or the ability to perform CPR. Continue to monitor for signs of shock. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Control Hemorrhage.

⇩

Administer oxygen per patient assessment.

⇩

Stabilize the object. Do not remove the object unless the object interferes with the airway, interferes with CPR. If transport is impossible with the impaled object, notify Medical Control early.

⇩

Apply bulky dressing around the object. Secure the dressing in place.

⇩

Transport promptly in the position of comfort. Minimize movement of the impaled object.

⇩

Reassess vital signs as indicated.

ALS

Control Hemorrhage.

⇩

Administer oxygen per patient assessment.

⇩

Stabilize the object. Do not remove the object unless the object interferes with the airway, interferes with CPR. If transport is impossible with the impaled object, notify Medical Control early.

⇩

Apply bulky dressing around the object. Secure the dressing in place.

⇩

Establish large bore IV's of normal saline or LR . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Transport promptly in the position of comfort. Minimize movement of the impaled object.

⇩

Reassess vital signs as indicated.

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8. Inhalation Injuries

Overview: The majority of fire related deaths are the result of smoke inhalation and/or carbon monoxide poisoning. Suspect inhalation injury and respiratory damage in any victim of a thermal burn, and particularly if the patient has facial burns, singed nasal hair, carbonaceous sputum or was in an enclosed space. Be aware that many chemicals are present during ordinary combustion including Hydrogen Sulfide, Hydrogen Cyanide and Carbon Monoxide (CO). CO is a tasteless, odorless, colorless, and non irritating gas. Almost any flame or combustion device can produce the gas. CO poisoning is a common problem and produces a broad spectrum of signs and symptoms, often imitating the flu. Think about CO poisoning when multiple patients present with the same signs and symptoms at a residence.

Prehospital Goal: Always protect providers from exposures from hazardous materials. Extrication and removal should be done by trained personnel. Move the patient to a safe environment, administer 100% oxygen, protect the airway and assist ventilations if indicated. Treat for shock. Rapid transport to an appropriate receiving facility is indicated for any patient presenting with Altered LOC, difficulty breathing, or cardiovascular compromise. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Administer 100% Oxygen per patient assessment. Use humidified oxygen if available.

⇩

Transport promptly in position of comfort.

⇩

Reassess vitals signs as indicated.

ALS

Administer 100% Oxygen per patient assessment. Use humidified oxygen if available.

⇩

Place patient on cardiac monitor.

⇩

Establish Saline Lock or IV of LR or NS at TKO rate.

⇩

Transport promptly in position of comfort.

⇩

Reassess vitals signs as indicated.

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9. Hyperthermia / Heat Stroke

Overview: Hyperthermia should be considered in any patient presenting with an altered level of consciousness in a warm, humid environment. This is especially true in the pediatric and the geriatric populations.

Prehospital Goal: Prevent further heat gain by transferring the patient to a cool environment and removing clothing. Rapid cooling can be accomplished by applying water to, and circulating water across, the patients' body, and by applying cold packs to the axillae (armpits), neck and groin. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Administer Oxygen per patient assessment.

⇩

Refer to Unconscious Patient or Seizures Protocol if indicated.

⇩

Begin cooling as indicated by patient assessment.

⇩

If patient is not nauseated, then begin hydration with water or electrolyte solution (such as 50 % diluted Gatorade) if available.

⇩

Transport promptly in the position of comfort.

⇩

Reassess vital signs as indicated.

ALS

Administer Oxygen per patient assessment.

⇩

Refer to Unconscious Patient or Seizures Protocol if indicated.

⇩

Begin cooling as indicated by patient assessment.

⇩

Place patient on the cardiac monitor.

⇩

Establish large bore IV of LR or NS and run at 200 cc's per hour. If patient is hypotensive, titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Transport promptly in the position of comfort.

⇩

Reassess vital signs as indicated.

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10. Hypothermia

Overview: Hypothermia should be considered in any patient presenting with an altered level of consciousness in a cool and/or wet environment, especially in the pediatric and geriatric populations. Vasoconstriction and bradycardia may make palpating a pulse very difficult. **Before initiating chest compressions, the *complete* absence of a pulse should be confirmed for 60 seconds.**

Prehospital Goal: Prevent further heat loss by removing wet clothing and placing the patient in a warm environment. Begin re-warming the patient with multiple layers of dry blankets and warm humidified air. **The patient should be handled gently at all times.** ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Administer 100% Oxygen per patient assessment.

⇩

Begin re-warming if indicated and prevent further heat loss.

⇩

Transport promptly in position of comfort. Avoid rough handling of patient.

⇩

Reassess vitals signs as indicated.

ALS

Administer 100% Oxygen per patient assessment.

⇩

Place patient on cardiac monitor. If patient is in VF or pulseless VT, follow hypothermic ACLS Protocol.

⇩

Establish Saline Lock or IV of LR or NS at TKO rate.

⇩

Begin re-warming if indicated and prevent further heat loss.

⇩

Transport promptly in position of comfort. Avoid rough handling of patient.

⇩

Reassess vitals signs as indicated.

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11. Snakebites

Overview : Life-threatening snake bites are unusual, if not rare. Only if the patient shows clear signs of envenomation in the field is there a serious risk of life or limb. Copperheads, water moccasins and eastern diamondback rattlesnakes pose the most serious threat to humans in Central Virginia. Note: There is no need to apply ice, a tourniquet, or to incise and suction a snakebite.

Prehospital goal: Transport the patient promptly and calmly to the nearest appropriate medical facility. Obtain history including type of snake if possible.

BLS

Perform Initial assessment
- **General impression**
- **Airway**
- **Breathing**
- **Circulation***
- **Level of consciousness**

⇩

Administer oxygen per patient assessment; Obtain medical history.

⇩

Place patient in position of comfort; remove restrictive clothing.

⇩

Immobilize bitten area in a slightly dependent position.

⇩

Transport patient promptly in the position of comfort.

⇩

Reassess vital signs as indicated.

ALS

Perform Initial assessment
- **General impression**
- **Airway**
- **Breathing**
- **Circulation***
- **Level of consciousness**

⇩

Administer oxygen per patient assessment; Obtain medical history.

⇩

Place patient in position of comfort; remove restrictive clothing.

⇩

Immobilize bitten area in a slightly dependent position.

⇩

Place patient on cardiac monitor.

⇩

Establish IV of NS at KVO rate in non-affected arm.

⇩

Transport patient promptly in the position of comfort.

⇩

Reassess vital signs as indicated.

* If BP is less than 90 mm Hg., Refer to **Medical Patient Care Protocol - Anaphylaxis / Allergic Reaction.**

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12. Spinal Injury

Overview: Suspect spinal injury in vehicular trauma, diving accidents, jumps or falls from any height, significant injury above the clavicles, crush injuries, lightning or electrical injuries, gunshot wounds to the head, neck, chest, back, or abdomen, multi-trauma victims, patients who are unconscious after trauma, and any time the mechanism of injury suggests the possibility of a spinal cord injury. A normal neurological exam—or a patient who is ambulatory at the scene— ***does not*** rule out the possibility of a spinal cord injury. The neurological exam should be carried out before and after immobilization and must include assessment of motor, sensory and distal circulation.

Prehospital Goal: Take spinal precautions on all trauma patients. Assess and document neurological findings. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Maintain C-Spine immobilization / establish airway.

⇩

Administer high flow oxygen per patient assessment.

⇩

Determine Glascow Coma Score

⇩

Transport immobilized to appropriate facility.

⇩

Reassess vital signs as indicated.

ALS

Maintain C-Spine immobilization / establish airway.

⇩

Administer high flow oxygen per patient assessment.

⇩

Determine Glascow Coma Score.

⇩

Establish large bore IV's of normal saline or LR . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Transport immobilized to appropriate facility.

⇩

Reassess vital signs as indicated.

⇩

If time, place patient on Cardiac Monitor.

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13. Thoracic and Abdominal Trauma

Overview: Blunt and penetrating thoracic and abdominal trauma can be rapidly fatal. Rapid initial assessment and early transport with IV's started enroute to the appropriate receiving facility has been demonstrated to increase the patient's chances of survival. Providers should not be fooled by gunshot or stab wounds that may appear to be insignificant.

Prehospital Goal: Control hemorrhage. Identify mechanism of injury. Consider "load and go" with any interventions (except for airway) being done enroute to a trauma center. Continue to monitor for signs of shock. ***This protocol assumes that the provider has already performed the assessment procedures outlined in the Trauma Patient—Initial Management Protocol.***

BLS

Check for bilateral breath sounds.

⇩

Administer 100% oxygen per patient assessment, assist ventilations with BVM as needed while maintaining C-Spine precautions.

⇩

Identify mechanism of injury.

⇩

Stabilize chest injuries.

⇩

Transport immobilized to the trauma center or closest appropriate facility.

⇩

Reassess vital signs as indicated.

ALS

Check for bilateral breath sounds.

⇩

Administer 100% oxygen per patient assessment, assist ventilations with BVM as needed while maintaining C-Spine precautions.

⇩

Identify mechanism of injury.

⇩

Reassess breath sounds. Stabilize any chest injuries.

⇩

If tension pneumothorax, perform needle chest decompression per protocol.

⇩

Transport immobilized to the trauma center or closest appropriate facility.

⇩

Establish large bore IV's of normal saline or LR . Titrate to maintain systolic blood pressure 90 – 100 mmHg.

⇩

Place patient on cardiac monitor.

⇩

Reassess vital signs as indicated.

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14. Trauma Patient Pain Management

Overview : Pain management is an important part of the initial treatment for many patients. Many patients can benefit from early pain management, especially during extended ambulance transport time. Pain management should also be considered for patients who can not be moved without significant pain. Trauma indications for pain management include isolated orthopedic injury and burns not involving airway compromise.

Prehospital goal: Obtain complete history. Maintain stable vital signs. Monitor the patient closely. Provide better comfort level through pain management. **Pain management is contraindicated in patients with compromise of airway, breathing, circulation or level of consciousness. More specific contraindication include: hypotension, open chest or abdominal injury, any signs of acute abdomen, active bleeding from internal organs (esophageal varices, vaginal or rectal hemorrhage, epistaxis, vomiting blood), multi-system trauma, signs of shock, headache.**

BLS

Perform Initial assessment
- **General impression**
- **Airway**
- **Breathing**
- **Circulation**
- **Level of consciousness**

⇩

Obtain complete history of incident and previous medical history.

⇩

Administer oxygen per patient assessment.

⇩

Make patient as comfortable as possible.

⇩

Transport promptly in position of comfort.

⇩

Reassess vital signs as indicated.

ALS

Perform Initial assessment
- **General impression**
- **Airway**
- **Breathing**
- **Circulation**
- **Level of consciousness**

⇩

Obtain complete history of incident and previous medical history.

⇩

Administer oxygen per patient assessment.

⇩

Place patient on cardiac monitor.

⇩

Establish IV of NS at KVO rate or saline lock.

⇩

Ascertain any drug allergies.

⇩

BLS	ALS
	Administer Morphine sulfate 2.0 - 5.0 mg IV every 5 - 10 minutes, or 5.0 - 10.0 mg IM. Dosage may be repeated after 10-20 minutes as needed. Call on-line Medical Control for all patients requiring > 10 mg total. Titrate to pain level and maintain adequate BP. ⇩ Reassess patient's ventilation efforts and support as indicated. ⇩ Transport promptly in position of comfort. ⇩ Reassess vital signs as indicated.