



General Trauma Care

INDICATION	<ul style="list-style-type: none"> • Treatment of adult or pediatric patients presenting with a trauma related chief complaint
BLS	<ul style="list-style-type: none"> • Ensure scene safety for crews and bystanders. • Exercise body substance isolation measures and use appropriate personal protective equipment (PPE). • Evaluate any environmental hazards. • Determine number of patients. • Determine need for additional resources. • Determine mechanism of injury. • Determine patient's level of consciousness, ABCs/(CAB in cardiac arrest), vital signs, and chief complaint/symptoms. • Maintain an open airway with <u>Airway/Respiratory Management BP-01</u>. • At a minimum, monitor and document vital signs every 15 minutes on stable patients and every 5 minutes for patients with critical conditions. • If indicated, determine if a valid POLST order or DNR verification form is in place, and act accordingly. • If patient is in cardiac arrest, refer to <u>Traumatic Arrest T-02</u>. • If indicated, administer supplemental oxygen using the appropriate delivery device. <ul style="list-style-type: none"> • Oxygen should be administered in the presence of hypoxemia, dyspnea, shock, or SpO2 <94%. Avoid hyperoxygenation. • Perform necessary BLS Interventions: <ul style="list-style-type: none"> • Splinting, <u>Spinal Motion Restriction BP-05</u>, and <u>Pelvic Binder BP-07</u>. • Control bleeding through the use of direct pressure, elevation, pressure dressings, and if necessary, <u>Major Hemorrhage Control T-03</u>. • Patients with potentially life-threatening injuries should be prepared for early transport to appropriate destination. Limit on scene time to less than 10 minutes when possible. <p>Obtain:</p> <ul style="list-style-type: none"> • History and Physical Exam of current event. • Past medical history. • Medications. • Allergies. • Perform full secondary assessment if time appropriate. • Consider use of pulse oximetry. • Ensure ALS response as appropriate.

ALS	<p>If indicated:</p> <ul style="list-style-type: none"> • Perform necessary ALS Interventions: <ul style="list-style-type: none"> • <u>Endotracheal Intubation AP-01</u> • <u>Needle Thoracostomy AP-05</u> when providers suspect a tension pneumothorax. • Patients with potentially critical conditions should receive 2 large bore IVs or; <ul style="list-style-type: none"> ▪ If unable to obtain IV access, <u>Intraosseous Infusion AP-08.</u> • Patients exhibiting signs and symptoms consistent with shock or who are hemodynamically compromised, should receive a <u>Fluid Challenge AP-09.</u> • <u>Tranexamic Acid</u>, per <u>Major Hemorrhage Control T-03.</u> • <u>Pain Management AP-13.</u> • <u>Sedation AP-14.</u> • Administer medications in accordance with the specified Field Treatment Guideline. • Obtain additional field diagnostic testing if appropriate and time permits: <ul style="list-style-type: none"> • Apply the cardiac monitor, blood glucose, temperature, carbon monoxide level, and stroke scale. • <u>12-Lead ECG BP-03.</u> • <u>Waveform Capnography AP-12.</u> • Patients with potentially life-threatening injuries should be prepared for early transport to appropriate destination. Limit on scene time to less than 10 minutes when possible. <ul style="list-style-type: none"> • Transport to the nearest appropriate treatment facility as defined in Napa County Patient Destination/Point of Entry Policy. • Decisions to use lights and sirens should be based on the immediate trauma/surgical needs of the patient. • Notification to the receiving facility should occur as early as possible.
KEY CONCEPTS	<ul style="list-style-type: none"> • If indicated, activate EMS aircraft early. • Contact the base hospital for on-line medical control for all treatment outside of standing orders. • EMS crews should not administer interventions that require on-going medical assessment if a patient is not being transported to a receiving facility. For example, giving IV narcotics to a patient who intends to refuse transport



Traumatic Arrest

INDICATION	<ul style="list-style-type: none"> • Patient presenting in respiratory/cardiac arrest that is suspected to be caused by trauma.
BLS	<ul style="list-style-type: none"> • Initiate CPR. • Follow <u>General Trauma Care T-01</u>. • If indicated, follow <u>Determination of Death Policy 7006</u>. • If indicated: <ul style="list-style-type: none"> • Perform necessary BLS Interventions: <ul style="list-style-type: none"> ▪ Initiate use of automated external defibrillator (AED). ▪ Control bleeding through the use of direct pressure, elevation, pressure dressings, and if necessary, <u>Major Hemorrhage Control T-03</u>. ▪ <u>Spinal Motion Restriction BP-05</u>, and <u>Pelvic Binder BP-07</u>.
ALS	<p>If indicated:</p> <ul style="list-style-type: none"> • Perform necessary ALS Interventions: <ul style="list-style-type: none"> • <u>Endotracheal Intubation AP-01</u>. • <u>Needle Thoracostomy AP-05</u>. • Initiate intravenous therapy and/or <u>Intraosseous Infusion AP-08</u> and <u>Fluid Challenge AP-09</u> according to hemodynamic stability. • Treat rhythm according to appropriate cardiac arrest field treatment guideline.
KEY CONCEPTS	<ul style="list-style-type: none"> • The use of mechanical compression device is not indicated in traumatic arrest patients. • Patients in cardiac arrest secondary to a traumatic arrest should be prepared for early transport to appropriate destination. Limit on scene time to less than 10 minutes when possible. • Whenever possible, the only treatment that should be performed prior to initiating transport should be CPR, defibrillation, spinal motion restriction, BLS/ALS airway management, and needle thoracostomy. • Advanced Cardiac Life Support therapy should not be performed prior to transport. • In cases of traumatic arrest, epinephrine is not indicated in PEA or asystole. Epinephrine will not correct arrest caused by a tension pneumothorax, cardiac tamponade, or hemorrhagic shock. If there is any doubt as to the cause of arrest, treat as a non-traumatic arrest.



Major Hemorrhage Control

FIELD TREATMENT GUIDELINE T-03

INDICATION	<ul style="list-style-type: none"> When direct pressure and elevation cannot control bleeding, use of a tourniquet device and/or a hemostatic agent can minimize blood loss and safely and effectively assist in the care of patients with uncontrollable bleeding in extremities.
BLS	<ul style="list-style-type: none"> Follow <u>General Trauma Care T-01</u> <ul style="list-style-type: none"> Indications for tourniquet placement include: Injuries in which pressure/dressings do not control bleeding. Injuries with an impaled foreign body and ongoing extremity bleeding. A multi-casualty incident (MCI) where immediate bleeding control is needed so you can move onto the next patient. Significant extremity hemorrhage accompanied by: <ul style="list-style-type: none"> Need for airway management. Circulatory shock. Need for other emergent interventions or assessment. Significant bleeding from multiple locations. Consider applying a tourniquet (without tightening) for any stable patient whose bleeding appears to be easily and quickly controlled by direct pressure. <ul style="list-style-type: none"> This can be especially important when a wound has the potential for uncontrolled hemorrhage, e.g., GSW, stabbing, crushing or mangle of extremities. When in doubt, apply the tourniquet so that it may be easily deployed if the patient's condition deteriorates. The SWAT-T Tourniquet is approved for Tactical EMS Operations and declared MCIs. Indications for use of a hemostatic agent: <ul style="list-style-type: none"> Bleeding is not completely controlled with the use of a tourniquet or where tourniquets are not indicated (e.g. head, neck, trunk, etc). <ul style="list-style-type: none"> Identify the source of the hemorrhage. Pack the QuikClot® Gauze in the wound over the point of hemorrhage. If possible, pack the entire dressing. Apply direct pressure for 2-3 minutes. Replace pressure dressing / tourniquet. If no tourniquet is available, maintain manual pressure with hand over gauze or wrap with available bandage.

ALS	<p>Consider <u>TRANEXAMIC ACID</u> if:</p> <ul style="list-style-type: none"> • Indication: <ul style="list-style-type: none"> • Adults, age ≥15 years old and; • Any sustained blunt or penetrating trauma occurring within 3 hours with signs and symptoms of hemorrhagic shock and one or more of the following: <ul style="list-style-type: none"> ▪ Systolic blood pressure of less than 90 mmHg at scene of injury, during ground medical transport, or on arrival to designated trauma centers. ▪ Bleeding uncontrolled by direct pressure or tourniquet. ▪ Significant blood loss and a heart rate greater than 120 BPM. • Administration <ul style="list-style-type: none"> • Administer TXA 1 gram in 100 mL NS IV/IO over 10 min (NO IV PUSH). • Follow IV fluid resuscitation; refer to <u>Fluid Challenge AP-09</u>.
KEY CONCEPTS	<ul style="list-style-type: none"> • Early notification to Receiving Facility is required when using tourniquets, hemostatic agents, or <u>TRANEXAMIC ACID</u>. • Scene time for major trauma patients should be limited to < 10 minutes whenever possible. • In cases of amputated extremities, place the amputated part in dry, sterile dressing and place in sealed plastic container/bag; place on top of ice or cold packs.

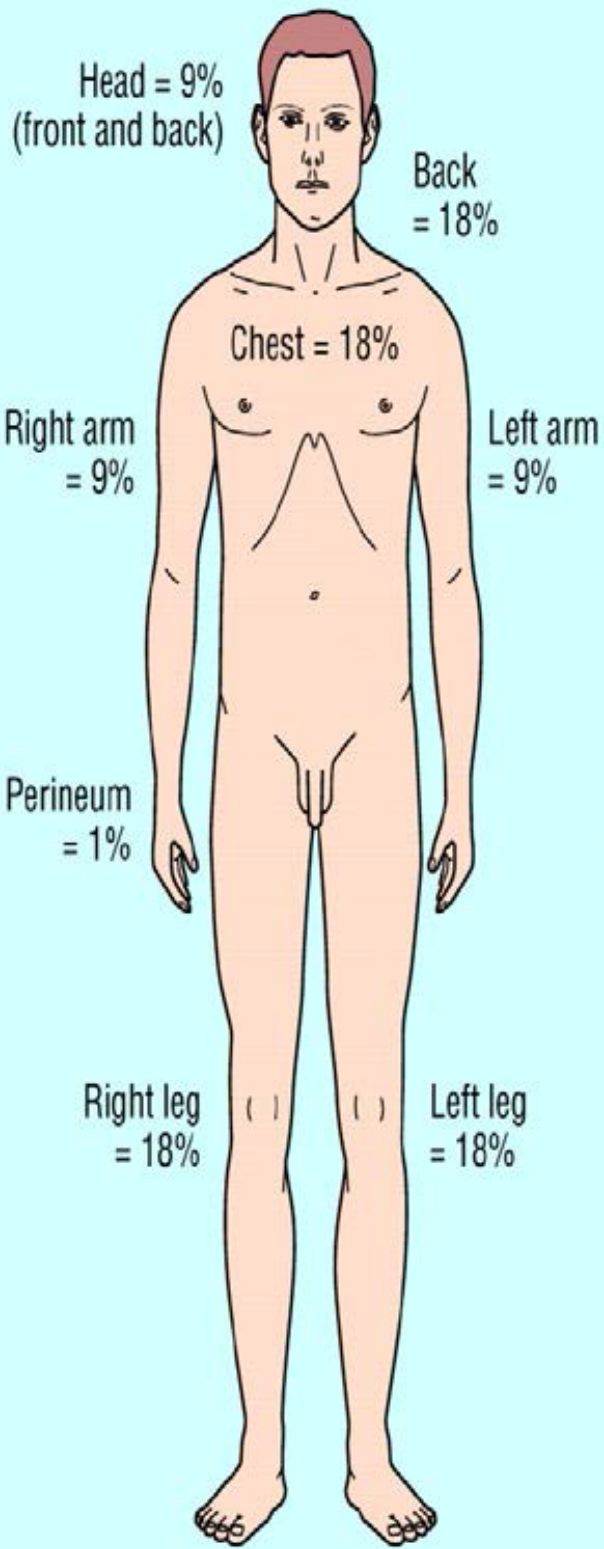


Crush Syndrome

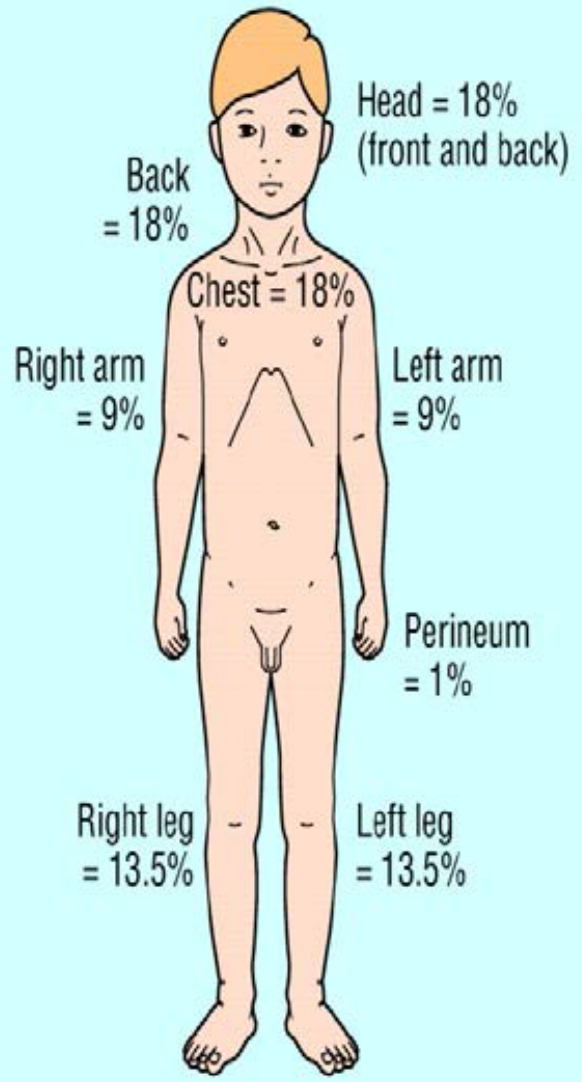
INDICATION	<ul style="list-style-type: none"> Significant extremity or torso entrapment (usually > 1 hour duration). Symptoms include pain, paresthesia, paralysis, pallor and pulselessness.
BLS	<ul style="list-style-type: none"> Follow <u>General Trauma Care T-01</u>.
ALS	<ul style="list-style-type: none"> Administer <u>Fluid Challenge AP-09</u>. <u>Sodium Bicarbonate:</u> <i>Adult:</i> 1mEq/kg IV/IO, MAX total dose of 100mEq. <i>Pediatric:</i> IV/IO; base order required for repeat dosing. Administer according to PediaTape weight calculation and <u>Pediatric Medication Reference Cards</u>. <u>Albuterol:</u> <i>Adult:</i> 5 mg in 6 mL in NS. May repeat as clinically indicated. <i>Pediatric:</i> Nebulized; repeat as clinically indicated. Administer according to PediaTape weight calculation and <u>Pediatric Medication Reference Cards</u>. Additional <u>Sodium Bicarbonate:</u> <i>Adult:</i> 1mEq/kg IV/IO, MAX total dose of 100mEq. <ul style="list-style-type: none"> Give just prior to release from entrapment <i>Pediatric:</i> IV/IO; Administer according to PediaTape weight calculation and <u>Pediatric Medication Reference Cards</u>. BASE HOSPITAL ORDERS <ul style="list-style-type: none"> <u>Calcium Chloride:</u> <i>Adult:</i> 1 gm IV/IO, slow push. <i>Pediatric:</i> Not locally indicated.
KEY CONCEPTS	<ul style="list-style-type: none"> Sodium Bicarbonate and Calcium Chloride should not be administered concurrently. Use a separate IV line or flush IV line with saline between administrations. Continuous cardiac monitoring is critical. If signs of peaked T-Waves, widening of QRS or arrhythmia contact BASE for further direction. During transport, or at a time that will not prolong on scene time, <u>12-Lead ECG BP-03</u>.



INDICATION	<ul style="list-style-type: none"> • Burns caused by heat, electrical, radiation, friction or chemicals.
BLS	<ul style="list-style-type: none"> • Follow <u>General Trauma Care T-01</u>. • Stop burning process: <ul style="list-style-type: none"> • Remove contact with agent, unless adhered to skin. • Flush with water to stop burning process or to decontaminate skin. • Remove restrictive clothing and jewelry that is not adhered to patient. • Protect the burned area with sterile dressings or sheets. <ul style="list-style-type: none"> • Burns <10% total body surface area may be kept wet with saline moistened dressings. • Burns >10% total body surface area should only use dry dressing to avoid hypothermia. Cover patient with sterile burn sheet and blanket to prevent loss of body heat. • Elevate burned body parts 30° if possible.
ALS	<ul style="list-style-type: none"> • All specific ALS treatment is identified in <u>General Trauma Care T-01</u>. • For suspected exposure to Cyanide or CO, <u>Smoke Inhalation / Carbon Monoxide Monitoring & Cyanide Toxicity M-10</u>.
KEY CONCEPTS	<ul style="list-style-type: none"> • Direct transport to a Burn Center is preferred for major burns. Burn injuries that should be referred to a burn center include: <ul style="list-style-type: none"> • Partial thickness burns greater than 10% total body surface area (TBSA). • Burns that involve the face, hands, feet, genitalia, perineum, or major joints. • Third degree burns in any age group. • Electrical burns, including lightning injury. • Chemical burns. • Inhalation injury. • Burn injury in patients with preexisting medical disorders that could complicate management, prolongs recovery, or affects mortality. • Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Base Hospital consultation will be necessary in such situations. • Use the “Rule of Nines” to estimate TBSA.



Adult



Child