



Table of Contents BLS Treatment

GUIDELINE #	NAME	DATE OF ISSUANCE / REVISION	# OF PAGES
8001	BLS Routine Medical Care	02/01/2012	1
8002	Spinal Immobilization	01/01/2016	4
8003	BLS Airway / Oxygen	02/01/2012	1
8004	Position Held for Future Use	-	-
8005	BLS Airway Obstruction	02/01/2012	1
8006	Position Held for Future Use	-	-
8007	BLS Altered Mental Status	02/01/2012	1
8008	BLS Trauma Management	02/01/2012	1
8009	ALS / BLS Burns	02/01/2012	2
8010	BLS Environmental Emergencies	02/01/2012	1
8011	BLS Routine Obstetric Delivery	02/01/2012	1
8012	BLS Newborn Care	02/01/2012	1
8013	BLS Obstetric Emergencies	02/01/2012	1
8014	Football Helmet Removal	02/01/2012	1
8015	Tourniquets / Hemorrhage Control	02/01/2017	4
8016	BLS Poisoning / Overdose	12/13/2016	4
8017	BLS Epinephrine Auto-Injector Administration	01/01/2015	4



BLS Routine Medical Care

TREATMENT GUIDELINE 8001

8001.1 PROCEDURE

- A. Scene Safety - Assure scene safety prior to patient contact.
- B. ABC's - Assess airway, breathing and circulation (A-B-C) / (C-A-B in cardiac arrest):
 1. When ABC's / CAB's NOT INTACT:
 - a. Begin CPR in accordance with the standards established by the American Heart Association, including early defibrillation (when available).
 - b. Control significant external bleeding.
 2. When ABC's / CAB's INTACT:
 - a. Administer oxygen per the BLS Airway / Oxygen Guideline # 8003.
 - b. Check vital signs; repeat every five (5) minutes for emergent patients and every fifteen (15) minutes for non-emergent patients.
 - c. Obtain:
 1. Chief complaint.
 2. History of current event.
 3. Past medical history.
 4. Medications.
 5. Allergies.
 - d. Perform full secondary patient exam.
 - e. BLS personnel may utilize pulse oximetry with adequate training.
- C. Spinal Immobilization - Perform manual spinal immobilization, if indicated, per the Spinal Immobilization Guideline # 8002.
- D. Ensure ALS response as appropriate.



8002.1 PURPOSE

To provide guidelines and recommendations for the spinal immobilization of prehospital patients in Napa County. The goals of immobilization are to prevent further spinal injury during patient extrication, treatment, and transport and to ensure patient comfort.

8002.2 INDICATIONS FOR SPINAL IMMOBILIZATION

The goal of restricting spinal movement is to decrease any further harm to a patient who is found with a potential spinal injury in the setting of trauma. Spinal immobilization may include but is not limited the use of cervical collar (X-Collar Plus), long spine board (CombiCarrier), short spine board (KED or Faspint) or the RedVac EMS Vacuum Mattress.

- A. Altered Level of Consciousness.
- B. Intoxicated.
- C. Uncooperative.
- D. Age > 65 or < 5 Years Old.
- E. Language Barrier.
- F. Injury Detracting from a Reliable History and Exam.
- G. Gross Motor or Sensory Deficits.
- H. Motor: Perform the following tests on each side, lower and upper extremities.
 - I. Upper – Ask the patient to extend and flex wrist against resistance.
 - J. Lower – Ask patient to dorsiflex and plantar flex foot against resistance.
- K. Sensory: Perform a “sharp vs. dull” discriminatory examination on all 4 extremities.
- L. Results: Inability to extend flex or failure to discriminate between “sharp” and “dull” is a failure of the test and may indicate spinal cord injury.
 - 1. Spine Deformity:
 - 2. Limited Cervical Active Range of Motion.
 - 3. Midline Spinal Pain and Tenderness.

8002.3 CORE FUNDAMENTALS

- A. The best candidates for full head-to-toe immobilization are victims of a high impact mechanism with multi-systems injuries.
- B. Most spinal injuries of any consequence present with spinal pain and vertebral tenderness to palpation. Alert and oriented patients with true spinal injuries tend to exhibit pain and tenderness to palpation and generally vigorously self-splint.
- C. Elderly patients and those with preexisting arthritis and other diseases which compromise their skeletal system are more likely to have spinal injuries after a traumatic mechanism.
- D. Spinal immobilization should *reduce*, rather than *increase*, patient discomfort. Immobilization that increases pain should be avoided. Full spinal immobilization as traditionally practiced has often caused more injuries than it has prevented.
- E. Ill-fitting equipment is worse than no equipment at all. For example, more harm can be caused by a cervical collar that hyperextends a patient’s injured cervical spine than by omitting a collar altogether.

- F. There is no evidence that supine immobilization of the spine is better than placing patients in a semi-fowler's position. It is also clearly less comfortable.
- G. Alert, neurologically intact victims of penetrating thoracic trauma without spinal pain do not need spinal immobilization. Victims of penetrating trauma, with neurological deficits require full spinal immobilization.
- H. However, full spinal immobilization of penetrating thoracic trauma patients may increase mortality and morbidity, therefore spinal immobilization of penetrating trauma patients should never delay transportation.

8002.4 IMMOBILIZATION GUIDELINES

- A. Backboards are not preferred, and if used, must be appropriately padded to prevent pain and pressure sores.
- B. Consider omission of X-Collar in reliable patient without cervical pain or tenderness who are immobilized in a vacuum device. The only Napa County approved cervical collar device is the X-Collar.
 - 1. The X-Collar is recommended for patients ranging from 10kg / 22lbs – 165kg / 360lbs.
 - 2. In patients outside of this weight range, the patient is encouraged to be immobilized using a vacuum splint / mattress, (refer to Figure 1 & 2 below).
- C. Partial immobilization of a patient with isolated cervical pain and/or tenderness is acceptable, and encouraged. This must include the use of the X-Collar and may include the use of a vacuum mattress, KED, vacuum splint, etc.
- D. Full spinal immobilization should be reserved primarily for patients who have received a high impact resulting in multiple systems blunt trauma, and/or who are unable to provide accurate information to field responders. This level of immobilization is more comfortable if vacuum splinting is utilized.
- E. If the utilization of a cervical collar indicated, the X-Collar is required. A vacuum splint / mattress is required to be utilized with a scoop, backboard or other appropriate carrier device.
- F. Concave “scoops” should be employed for moving patients whenever possible; backboards should be used only if these other devices are unavailable.
- G. Spinal movement and discomfort are reduced by allowing patients to self-extricate when possible, and to place themselves onto gurneys and spinal immobilization devices. Back-boarding patients from a standing position is discouraged.
- H. Logrolling patients is very uncomfortable and leads to increased spinal movement. The preferred technique to getting patients onto boards is to “forklift” the patient onto the backboard.
- I. In patients without midline neck or back pain / tenderness, ALOC, intoxication or injury detracting from a reliable history and exam, spinal immobilization may be withheld as long as the patient can be accurately evaluated.

8002.5 SPECIAL CONSIDERATIONS

- A. Exercise caution when evaluating high-risk patients (i.e. elderly, osteoporotic, degenerative disorders, diabetic patients, etc.) as they may present with minimal or no pain following a spinal injury.
- B. If the patient is greater than twenty (>20) weeks gestation and full spinal precautions is indicated; ensure steps are taken to minimize supine hypotension syndrome.
- C. Advanced airways should be secured with tape or a commercial device. Devices and tape should be applied in a manner that avoids compression of the front and sides of the neck, which may impair venous return from the brain (Refer to Advanced Airway Management Guideline # 9801).

8002.7 PEDIATRIC PATIENTS / CAR SEATS

- A. Infants restrained in a rear-facing car seat may be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his / her condition allows (no signs of respiratory distress or shock).
- B. Children restrained in a car seat (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should be immobilized.
- C. Children restrained in a booster seat (without a back) need to be extricated and immobilized following standard spinal immobilization precautions.



Figure 1.

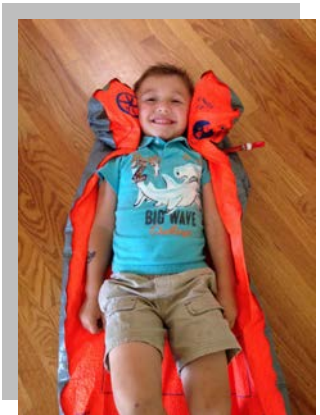


Figure 2.

- D. As clinically indicated utilize padding under the pediatric patient's head, shoulders and/or torso to facilitate proper neutral spinal immobilization.
- E. When no child restraint device is available or applicable, pediatric patients should be immobilized using a vacuum splint / mattress (refer to Figure 1. & 2. above).
 1. The X-Collar is recommended for patients ranging from 10kg / 22lbs – 165kg / 360lbs.
 2. In patients outside of this weight range, the patient should be immobilized using a vacuum splint / mattress, (refer to Figure 1. & 2. below)

8002.8 HELMET REMOVAL

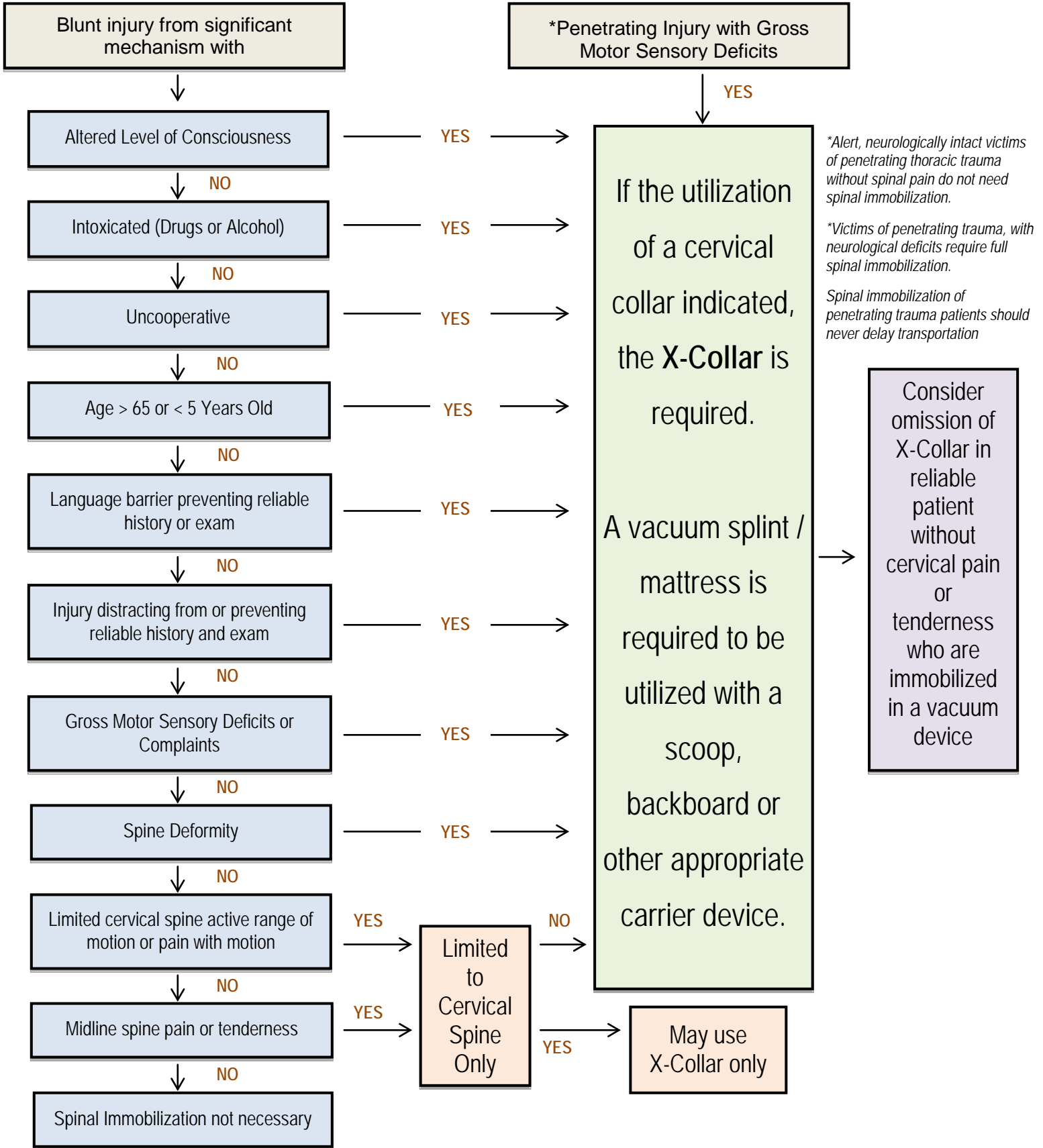
Safe and proper removal of the helmet should be done by two (2) people following steps outlined in PHTLS or similar texts. (If applicable, refer to Football Helmet Removal Guideline # 8014 for further guidance).

8002.7 REMOVAL OF SPINAL IMMOBILIZATION

Paramedics shall not remove spinal immobilization placed by another **paramedic** unless the immobilization compromises the patient's life or limb.

8002.8 SEDATION OF SPINALLY IMMOBILIZED PATIENTS

Ondansetron has been proven to be ineffective in the treatment of motion sickness. If mild sedation or treatment for motion sickness is indicated, refer to Sedation Guideline # 9005 and/or Severe Nausea / Vomiting Guideline # 9006.





8003.1 PURPOSE

To provide guidelines for airway management and oxygen administration. To authorize BLS agencies to utilize pulse oximetry.

8003.2 PROCEDURE

A. Assess Respirations

1. If respirations are inadequate and/or $SpO_2 < 94\%$:
 - a. Clear airway as necessary. This may include placing the patient on his / her side (left lateral position) and suctioning.
 - b. Consider inserting an airway adjunct.
 - c. Insert nasopharyngeal airway for patients with gag reflex.
 - d. Use oropharyngeal airway for patients without gag reflex.
 - e. Administer high flow oxygen.
 - f. Assist ventilations as needed.
2. If respirations are adequate and $SpO_2 \geq 94\%$:
 - a. Consider high-flow oxygen (12-15 liters / minute by non-rebreather mask) if ANY of the following exist:
 1. Shortness of breath.
 2. Major trauma.
 3. Unconscious / altered mental status.
 4. Chest pain.
 5. Pregnancy with complications.
 6. Major burns.
 7. Labored respirations.
 8. Smoke / toxic inhalations.
 - b. Other patients may require low flow or no oxygen depending on clinical state and SpO_2 levels.
3. Oxygen should be titrated so that $SpO_2 > 94\%$.

B. Pulse oximetry levels

1. Maintain $SpO_2 \geq 94\%$ in all patients. It is not necessary to achieve levels of 100% even in cardiac arrest ROSC patients, as oxygen toxicity may develop.



BLS Airway Obstruction

TREATMENT GUIDELINE 8005

8005.1 DEFINITION

Airway Obstruction: Mechanical upper airway obstruction with history of food aspiration (especially if elderly), alcohol abuse, child playing with small objects.

8005.2 PROCEDURE

- A. If patient is conscious and able to speak:
 1. Offer reassurance, do not intervene and encourage coughing.
 2. Offer oxygen via cannula.
 3. Frequent gentle suctioning as needed to control secretions.
- B. If patient is conscious but unable to speak or cough:
 1. Confirm airway obstruction.
 2. Head tilt/chin lift (jaw thrust maneuver in trauma patients).
 3. Adult/Child > one (1) Year old:
 - a. Administer continuous abdominal thrusts until the foreign body is expelled or the patient becomes unconscious (see treatment below).
 4. Infants < one (1) Year old:
 - a. Administer five (5) back blows and five (5) chest thrusts repeatedly with child supported in a head down position until the foreign body is expelled or the patient becomes unconscious (see treatment below in section "c").
 5. After obstruction is relieved, reassess airway, lung sounds, skin color and vital signs.
 6. Administer oxygen as indicated.
- C. If adult patient is unconscious, Child > one (1) Year old or Infants < one (1) Year old:
 1. Place patient in supine position.
 2. Head tilt/chin lift (jaw thrust maneuver in trauma patients).
 3. Begin CPR; observe airway prior to each ventilation; if an object is seen remove object and reassess patient. Continue CPR as indicated.
 4. ALS personnel, consider needle cricothyrotomy if BLS maneuvers are unsuccessful.



BLS Altered Mental Status

TREATMENT GUIDELINE 8007

8007.1 PROCEDURE

- A. Suspicion of Poisoning or Overdose:
 - 1. Maintain airway and left lateral position.
 - 2. Attempt to determine cause.
- B. Observed Seizure:
 - 1. If still seizing, protect from injury.
 - 2. During and after seizure, maintain airway and left lateral position.
 - 3. Do not place any object in the patient's mouth.
- C. Trauma Mechanism:
 - 1. Maintain spinal immobilization precautions and airway.
- D. Known or Suspected Diabetic:
 - 1. If awake, able to hold head upright, and gag reflex is present, assist the patient to self-administer glucose paste or solution. Patient **MUST** be able to swallow without difficulty.
 - 2. If not awake, not able to swallow, unable to hold head upright, or there is no gag reflex, maintain airway and left lateral position.
- E. Unknown Cause and/or History:
 - 1. Maintain airway and left lateral position.



BLS Trauma Management

TREATMENT GUIDELINE 8008

8008.1 PROCEDURE

A. Expedite Transport:

1. Spinal immobilization precautions as necessary; refer to ALS/BLS Spinal Immobilization Guideline # 8002.
2. Remove or cut away the patient's clothing to expose injuries.
3. Keep patient warm; prevention of hypothermia is a key goal of trauma care.
4. Control significant external bleeding as follows:
 - a. Direct pressure.
 - b. Elevation - Use caution if suspect possible fracture.
 - c. Use of a Napa County approved tourniquet device is appropriate when upper or lower extremity hemorrhage cannot be controlled by the above methods. Refer to Tourniquets/Control Hemorrhage Guideline # 8015.
5. Treat suspected shock. Shock should be suspected when there is a mechanism of injury or the skin is pale, cool and diaphoretic. Vital signs alone are not a reliable indicator of shock.
 - a. Administer high-flow oxygen.
6. Stabilize fractures in the position found or the patient's position of comfort.
 - a. Pulses distal to the fracture should be checked within two (2) minutes of completing the primary survey and at least q fifteen (15) minutes thereafter.
7. Distal pulses should also be checked before and after any movement of a suspected fracture.



8009.1 PROCEDURE

A. Initial

1. Extinguish burning or smoldering clothing.
2. Flush chemical burns with copious amounts of water.

B. Airway

1. Assess airway for burns. Airway burns should be suspected when the patient:
 - a. Is burned or exposed to smoke.
 - b. Has been exposed to toxic fumes.
 - c. Has burns to the face and/or the upper airway.
 - d. Has redness / blisters / soot in the mouth or nose and/or singed nasal hair

C. BLS Treatment

1. Assess for other injuries and treat as indicated.
2. Maintain airway and administer high-flow oxygen. Refer to BLS Airway / Oxygen Guideline # 8003.
3. Remove jewelry, but do not remove stuck clothing.
4. Use water or NS to stop the burning process and quickly dry the patient after the burning has stopped.
5. Burns <10% total body surface may be kept wet with saline moistened dressings (sterile preferred).
6. Burns >10% total body surface area; use dry dressings – no exceptions, as to not induce hypothermia.
 - a. The patient should then be covered with a sterile burn sheet and blanket to prevent loss of body heat.
 - b. Do not use water or burn gels.
7. Elevate burned body parts 30-degrees if possible.

D. ALS Treatment

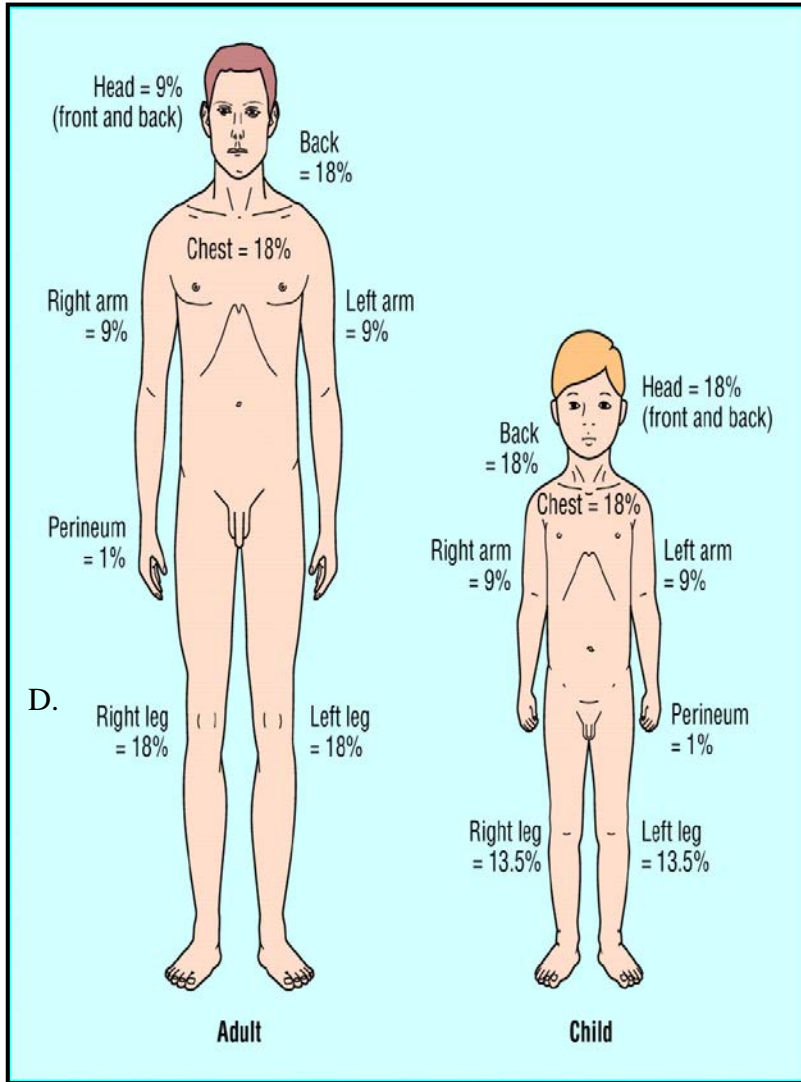
1. Consider early advanced airway if airway burn involved. Administer oxygen to maintain oxygen saturations above 96%.
2. IV NS 10 mL/kg. Recheck vital signs after every 250mL's. May repeat bolus if transport time is over thirty (30) minutes.
3. For pain management, in absence of hypotension, significant other trauma, altered level of consciousness and narcotic allergy, administer fentanyl; refer to Treatment Guideline # 9004 Pain Management.
4. Address psychological needs; refer to Sedation Guideline # 9005.

8009.2 SPECIAL CONSIDERATIONS

- A. Pulse oximeter if available, if carbon monoxide poisoning is present, reading may be artificially high.
- B. Notify receiving hospital ASAP.
- C. Consider direct transport to U.C. Davis (UCD) Medical Center for major / critical burns. Base hospital prior to transport is required.

Estimate the severity of the burns:

“Rule of Nines”



ABA Classification

Minor:

- < 10% partial thickness (adult)
- < 5% < 10 y/o > 50 y/o
- < 2% full thickness

Moderate:

- 10-20% partial thickness (adult)
- 5-10% < 10 y/o > 50 y/o
- High voltage, suspected inhalation, circumferential or susceptibility to infection

Major:

- 20% partial thickness (adult)
- 10% < 10 y/o > 50 y/o
- 5% full thickness
- Partial or full thickness burns to face, eyes, ears, hands, feet, perineum, genitalia or major joints
- Significant electrical and caustic agent burns
- Circumferential burns to an extremity or trunk.
- Inhalation injury with evidence of significant burns.
- Burns in high risk patients, including those with significant underlying medical conditions.



BLS Environmental Emergencies

TREATMENT GUIDELINE 8010

8010.1 PROCEDURE

- A. Heat Environmental Emergencies:
 - 1. Protect patient from further exposure to heat.
 - 2. Move patient to cool environment.
 - 3. Remove heavy or constricting clothing.
 - 4. Apply moist dressing and fan patient.
- B. Cold Environmental Emergencies:
 - 1. Protect patient from further exposure to cold.
 - 2. Move patient to warm environment.
 - 3. Remove any wet clothing.
 - 4. Do not actively re-warm patient or insert oral airway.
 - 5. Prevent unnecessary movement.
 - 6. Cover patient with a blanket.
- C. Bites or Stings Environmental Emergencies:
 - 1. Remove stinger if still present.
 - 2. Administer 100% oxygen and ventilate as needed.
 - 3. Assess for signs and symptoms of shock and airway obstruction. Treat appropriately.
 - 4. If patient has an EpiPen[®], you may assist patient in self-administration, if needed.
- D. Smoke Inhalation Environmental Emergencies:
 - 1. Administer 100% oxygen and ventilate as needed.
 - 2. Examine nose and mouth for soot and other signs of airway burns.
- E. Hazardous Materials Environmental Emergencies:
 - 1. ASSURE PERSONNEL AND SCENE SAFETY FIRST.
 - 2. Do not approach patient.
 - 3. Isolate and deny access to hazard area.
 - 4. Initiate HAZ-MAT response.
 - 5. Establish safe treatment area uphill and upwind of the hazard area.
 - 6. Receive patient from rescue personnel after decontamination.
 - 7. DO NOT TRANSPORT A PATIENT PRIOR TO APPROPRIATE DECONTAMINATION.



BLS Routine Obstetric Delivery

TREATMENT GUIDELINE 8011

8011.1 PROCEDURE

- A. Treatment for obstetric delivery:
 - 1. Routine medical care for mother.
- B. If infant's head is visible or crowning:
 - 1. Assist in delivery.
 - 2. Check for cord around infant's neck and gently remove if present.
 - 3. Suction airway with bulb syringe as soon as possible, mouth before nose.
 - 4. Clamp cord x 2 and if clinically indicated, cut between clamps six to eight (6-8) inches from the infant.
 - 5. Assess, dry, and wrap the infant.
 - 6. Massage fundus if infant is delivered and there is heavy vaginal bleeding.
 - 7. Deliver the placenta if presenting but do not force.
 - 8. Refer to BLS Newborn Care Guideline # 8012.
- C. If infant's head is NOT visible:
 - 1. Transport.



8012.1 PROCEDURE

A. Treatment Newborn Care:

1. Routine medical care for mother.

B. Assess the Newborn. A normal newborn will have the following signs and symptoms:

1. Check APGAR score at one (1) minute, five (5) minutes and q five (5) minutes thereafter. Refer to APGAR Scoring Guideline # 9405.
 - a. Has a completely pink appearance.
 - b. Has a pulse > 100 bpm.
 - c. Cries when stimulated.
 - d. Actively moves all extremities.
 - e. Has a good strong cry.
 - f. A depressed newborn lacks one (1) or more of the above characteristics.

C. Normal Newborn Care:

1. Dry the baby.
2. Cover the head of the baby to maintain body heat.
3. Allow mother to hold and breastfeed the baby if she wishes.
4. If the initial APGAR score is between 7 and 10, O₂ delivery (even in blow-by form) is not clinically indicated and should be avoided.

D. Depressed Newborn Care:

1. Suction airway with bulb syringe, mouth before nose.
2. Apply vigorous stimulation by rubbing the newborn's back or feet, do not "spank" the newborn.
3. Provide 100% oxygen by pediatric mask, and assist ventilation as necessary.
4. Check pulse rate:
 - a. If pulse is > 60 bpm: Expedite transport.
 - b. If pulse is < 60 bpm: Start CPR (if pulse < 60 bpm, perfusion is inadequate. CPR is indicated even though the newborn may have a pulse). Ensure ALS response and expedite transport if appropriate.
 - c. Reassess pulse every thirty (30) seconds to see if newborn is improving.



BLS Obstetric Emergencies

TREATMENT GUIDELINE 8013

8013.1 DEFINITIONS

Breech Presentation: Presentation of buttocks or both feet.

Limb Presentation: Presentation of single extremity.

Prolapsed Cord: The umbilical cord drops through the open cervix into the vagina, ahead of the baby.

8013.2 PROCEDURE

A. Treatment for obstetric emergencies:

1. Routine medical care for mother.

B. If cord is around baby's neck:

1. Attempt to slip the cord over the baby's head.
2. If unable, insert gloved finger between baby's neck and cord and rotate around neck in circular fashion in attempt to slide cord over the neck.
3. As a last resort, consider double clamping the cord and cutting between clamps, expediting delivery ASAP.
4. Refer to BLS Newborn Care Guideline # 8012.

C. If prolapsed cord:

1. Place the mother in trendelenberg (knee-chest position) or patient facing the bed, chest level to bed, knees tucked under chest, pelvis and buttocks elevated.
2. Insert a gloved hand into the vagina and gently push the presenting part (e.g. the neonate's head or shoulder off the cord. Do not tug on the cord.
3. Advise mother not to push.

D. If breech presentation:

1. Allow delivery to proceed passively until the baby's waist appears. Gently rotate the baby to a face down position and continue with the delivery.
2. If head does not readily deliver insert a gloved hand into the vagina to relieve pressure on the cord and create an air passage for the infant. Transport & monitor vital signs and infant condition frequently.

E. Other obstetric emergency (including abnormal vaginal bleeding, abdominal pain that is not labor related, hypertension or seizures):

1. Place mother in left lateral position.
2. Elevate legs if there are signs or symptoms of shock. Do not lay mother flat on her back.
3. Advise mother not to push.

F. If mother is having a seizure:

1. Maintain airway.
2. Protect mother from injury.
3. Position mother to enable blood return, i.e. left lateral position if possible.



Football Helmet Removal

TREATMENT GUIDELINE 8014

8014.1 TREATMENT

- A. Helmets in conjunction with shoulder pads help immobilize the neck. If the helmet is removed, the head could fall back into extension due to the bulk of the shoulder pads.
- B. If the airway is compromised, the face shield should be cut away from the helmet. If maneuvers to improve the airway cannot be performed with the helmet in place, the risks of helmet removal must be considered relative to the need for airway management.
- C. If the patient's spine cannot be immobilized with it in place, it should be removed carefully with manual immobilization of the spine and padding of the head may be required.



Tourniquet / Hemorrhage Control

TREATMENT GUIDELINE 8015

8015.1 INTRODUCTION

Controlling severe bleeding from an extremity can be challenging (especially in the lower limbs). When direct pressure and elevation cannot control bleeding use of a tourniquet device can minimize blood loss and safely and effectively assist in the care of patients with uncontrollable bleeding in the extremities. The use of a Napa County approved tourniquet device is a BLS skill approved for use by both BLS / ALS level field providers.

8015.2 INDICATIONS

A. Consider a tourniquet with:

1. Injuries in which pressure dressings do not control bleeding.
2. Injuries with an impaled foreign body and ongoing extremity bleeding.
3. A multi-casualty incident (MCI) where immediate bleeding control is needed so you can move onto the next patient.
4. Significant extremity hemorrhage accompanied by:
 - a. Need for airway management.
 - b. Circulatory shock.
 - c. Need for other emergent interventions or assessment.
 - d. Significant bleeding from multiple locations.
5. Consider applying a tourniquet (without tightening) for any stable patient whose bleeding appears to be easily and quickly controlled by direct pressure.
 - a. This can be especially important when a wound has the potential for uncontrolled hemorrhage, e.g., GSW, stabbing, crushing or mangle of extremities.
 - b. When in doubt, apply the tourniquet so that it may be easily deployed if the patient's condition deteriorates.

8015.3 PROCEDURE (Refer to algorithm)

- A. **Tourniquet Placement:** The Combat Application Tourniquet (CAT™), the SOF® Tactical Tourniquet or the Mechanical Advantage Tourniquet (MAT™) are the approved devices for use in Napa County under normal operational conditions.

The Combat Application Tourniquet (CAT™)

1. Visually inspect injured extremity and assess and document circulation, motor and sensation distal to injury site.
2. Apply tourniquet proximal to wound (usually two to four [2-4] inches). Do not place tourniquet over joint.
3. Pass the band through the outside slit.
4. Pull band tight.
5. Twist the windlass rod.
6. Lock the rod with the clip.
7. Secure the rod with the strap.
8. If placing around the upper extremity, adhere the band over the rod then secure both the rod and the band with the strap.

9. Re-assess and document circulation, motor and sensation distal to tourniquet and time and date the tourniquet was placed. (Tourniquet placement date and time must be documented on the tourniquet device / patient).
10. Ensure receiving facility staff is aware of tourniquet placement and time tourniquet was placed.

B. The SWAT-T

1. The SWAT-T Tourniquet is approved for Tactical EMS Operations and declared MCIs; **its use requires additional training.**
2. **Use as Tourniquet**
 - a. Stretch for tourniquet-place above the wound (between wound and heart). Wrap tightly ensuring ovals/rectangles change to circle/squares and tuck. (Pre-plan the tuck for best results).
 - b. In most patients, tourniquets have proven to be safe for a minimum of two hours.
3. **Use as Pressure Dressing**
 - a. Wrap the SWAT-T™ over Combat Gauze™ or sterile dressing then tuck or tape the end to maintain pressure, preventing further contamination and re-bleeding.
 - b. If the endpoints are met on the dressing you may have a tourniquet and should check for good blood return in the extremity (pulse and capillary refill) or you risk the complications associated with all tourniquets.
 - c. Pressure dressings should be left in place until definitive wound management can be accomplished.

8015.4 COMMENTS

- A. ALS level transport response is required if a tourniquet is placed.
- B. During MCIs consider a patient requiring a tourniquet as a ‘Red” or “Immediate”. START / JUMP START triage priority to facilitate transport and minimize tourniquet time.

8015.5 CONTINUED HEMORRHAGING / HEMOSTATIC AGENT

- A. During tourniquet placement, and to aid in severe arterial bleeding; or to control severe bleeding where tourniquets are not indicated (e.g. head, neck, trunk, etc.) use of a hemostatic agent is indicated.
- B. The only hemostatic agent approved for use in Napa County is the Combat Gauze™.

8015.6 (HEMOSTATIC AGENT) INDICATIONS

- A. Hemostatic agents should not be considered a replacement for the standard means of bleeding control. Use of a hemostatic agent should be considered if bleeding is not completely controlled with the use of a tourniquet or where tourniquets are not indicated (e.g. head, neck, trunk, etc).

8015.7 (HEMOSTATIC AGENT) PROCEDURE

- A. Directions for use:
- B. If bleeding persists after about three (3) minutes of pressure, remove dressing and apply Combat Gauze™.
 1. Identify the source of the hemorrhage.
 2. Pack the Combat Gauze™ in the wound over the point of hemorrhage.
 3. If possible, pack the entire dressing.

4. Apply direct pressure for 2-3 minutes.
5. Replace pressure dressing / tourniquet. If no tourniquet is available, maintain manual pressure with hand over gauze or wrap with available bandage.

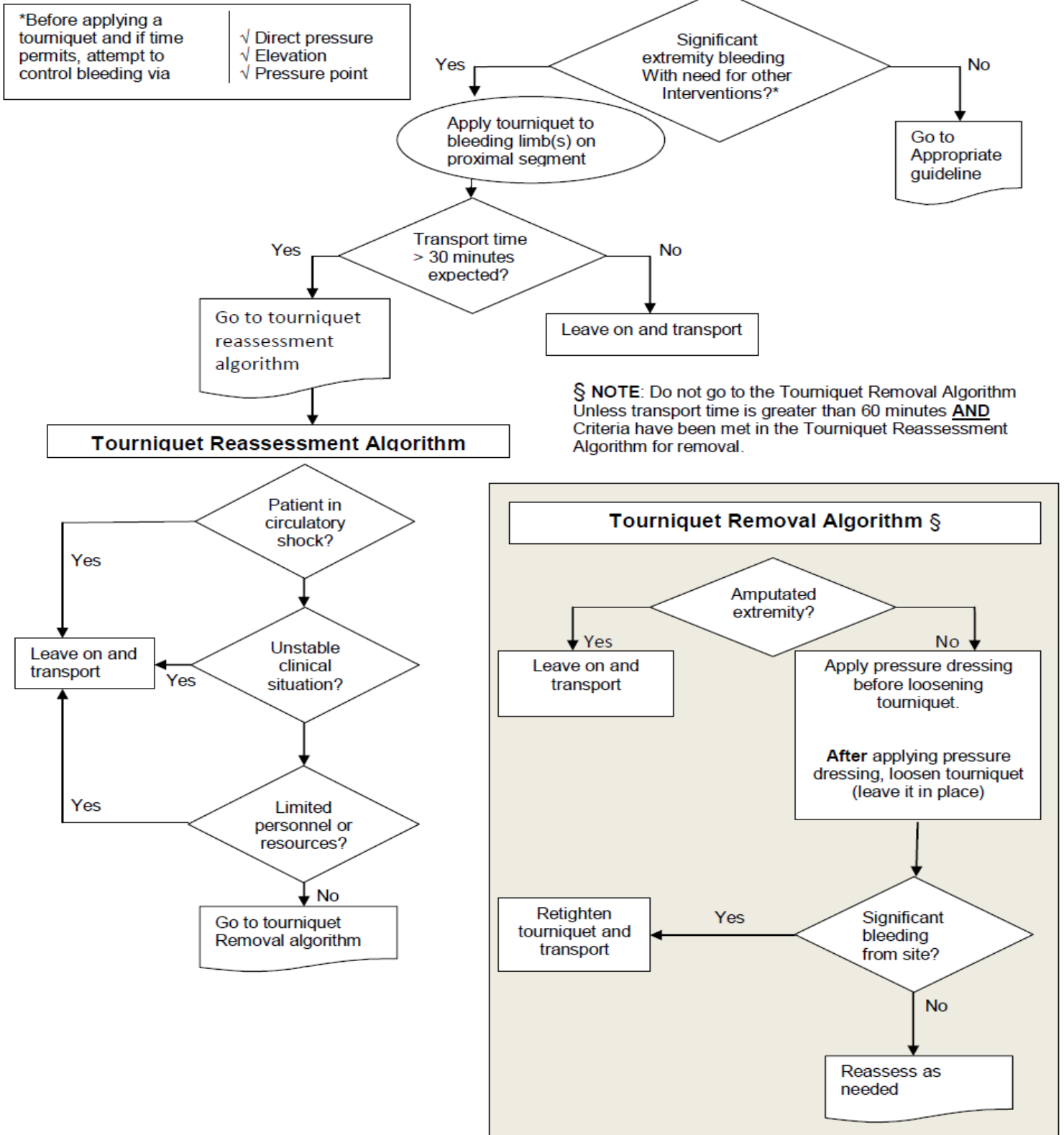
8015.8 TXA ADMINISTRATION

- A. For ALS providers, TXA should be considered on patients meeting criteria in Treatment Guideline 9603.

8015.9 CARE OF THE AMPUTATED PART / CONTINUED TREATMENT

- A. Place the amputated part in dry, sterile dressing and place in sealed plastic container / bag; place on top of ice or cold packs.
- B. For ALS Providers, consider pain management, in absence of hypotension and no narcotic allergies, administer fentanyl and refer to Pain Management Guideline # 9004.
- C. For ALS Providers, consider sedation; refer to Sedation Guideline # 9005 for anxiety.

HEMORRHAGE CONTROL



**BLS Poisoning / Overdose**

TREATMENT GUIDELINE 8016

8016.1 DEFINITION

- A. **Poisoning:** May be the result of exposure to toxic substances from **ingestion, inhalation, injection** or **skin absorption**. The most common poisoning emergencies include but are not limited to:

1. Corrosive agents (acids / alkalis);	No BLS treatment other than supportive
2. Hydrocarbons (gasoline, oil, pesticides, paints, turpentine, kerosene, lighter fluids, benzene and pine-oil products);	No BLS treatment other than supportive
3. Methanol (wood alcohol);	No BLS treatment other than supportive
4. Ethylene glycol (anti-freeze);	No BLS treatment other than supportive
5. Isopropyl alcohol;	No BLS treatment other than supportive
6. Cyanide;	ALS treatment only
7. Food poisonings (bacterial, viral, and non-infectious); and	ALS treatment only
8. Plant poisonings.	No BLS treatment other than supportive

- B. **Overdose:** Is the result of an individual's intentional / accidental exposure to a pharmacological substance(s). The most common drugs of abuse resulting in overdose are:

1. Narcotics;	See section 8016.3
2. Central nervous system (CNS) depressants;	No BLS treatment other than supportive
3. CNS stimulants; and	No BLS treatment other than supportive
4. Hallucinogens.	No BLS treatment other than supportive

8016.2 ASSESSMENT AND TREATMENT PRIORITIES

- Ensure scene safety.
- Maintain appropriate body substance isolation (BSI).
- Remove patient from point of exposure and address decontamination needs. Rescuers will need to place patient in a safe environment so that EMS personnel may administer emergency care.
- Maintain open airway and assist ventilations as needed. Airway management may include repositioning of the airway, suctioning or use of airway adjuncts (oropharyngeal airway / nasopharyngeal airway) as indicated.
- Administer oxygen using appropriate delivery device, as clinically indicated.

- F. Determine patient's hemodynamic stability and symptoms. Continually assess level of consciousness, CAB and vital signs.
- G. General management principles should be directed towards patient's clinical status and suspected cause for their clinical condition.
- H. Envenomations: Refer to Treatment Guideline # 9207 Snakebite.
- I. Contact the Poison Control Center at 1(800) 404-4646.

8016.3 TREATMENT WITH NALOXONE (NARCAN)

- A. Naloxone administration is only indicated if mental status and respiratory effort are *depressed*. Administration should ALWAYS be titrated to ensure an adequate respiratory rate.
- B. Naloxone is an antagonist ONLY to opioid narcotics and is not effective with other medications. It will NOT reverse benzodiazepines, sedative hypnotics, alcohol or any other class of drugs.
- C. Ensure ALS response.
- D. **If there are signs of altered mental status (GCS <15) and respiratory efforts are depressed (<8/min), administer IN naloxone (Narcan).**
 - 1. IN – 0.4 mg increments, divided into each nare, titrated to reverse respiratory depression. MAX total dose of 2 mg.
 - 2. Contact the base hospital for repeat doses if inadequate response.
- E. Relative contraindications include:
 - 1. Use with caution in narcotic-dependent patients. Naloxone can cause withdrawal.
 - 2. Use with caution in neonates of narcotic-addicted mothers, as the infant may be narcotic-dependent
- F. Continue BLS airway support.
- G. If more than 2 mg naloxone is required, base hospital physician contact is required.
- H. If questions or concerns contact base hospital physician.

8016.4 IN ADMINISTRATION / PROCEDURE

- A. Use of IN atomizing device.
 - 1. Draw up appropriate medication into a 1ml or 3ml luer-lock syringe.
 - 2. Expel any air within the syringe.
 - 3. Attach atomizing device to syringe – be sure it is secured firmly to syringe.
 - 4. Briskly compress the syringe plunger to expel and atomize medication.



BLS Epinephrine Auto-Injector Administration

TREATMENT GUIDELINE 8017

8017.1 PURPOSE

- A. EMT administration of epinephrine by auto-injector for suspected anaphylaxis and/or severe asthma.
- B. Candidates for the administration of epinephrine by optional skill approved EMT's are:
 - 1. Any patient with severe respiratory distress who may have a history of an allergy, with suspected exposure to a known allergen and experiencing anaphylaxis or asthma with one or more of the following symptoms:
 - a. Severe bronchospasm;
 - b. Wheezes;
 - c. Diminished or absent breath sounds;
 - d. Shock (sbp < 90mmHg);
 - e. Inability to speak; and
 - f. If above signs and symptoms are not present and epinephrine auto-injection is being considered, base hospital physician contact is mandatory;

OR

- 2. Possible history of an allergen exposure with severe signs and symptoms of anaphylaxis with one or more of the following symptoms:
 - a. Shock (sbp < 90mmHg);
 - b. Edema to mouth and/or airway causing breathing difficulties; and
 - c. Inability to speak with possible history of exposure to an allergen (e.g. bee sting)

8017.2 ASSESSMENT / TREATMENT PRIORITIES

- A. Assess and ensure adequate CABs.
- B. Ensure ALS is responding.
- C. Administer oxygen using appropriate oxygen delivery device, as clinically indicated.
- D. Assess vital signs including pulse oximetry (if available).
- E. Assess history and complete a physical examination.

8017.3 INJECTION SITE SELECTION

The injection site for administration is the **outer (lateral) thigh muscle** midway between the waist and knee.

**Note: DO NOT INJECT INTO THE BUTTOCK
ADMINISTRATION THROUGH CLOTHING IS NOT PREFERRED**



8017.4 ADMINISTRATION

- A. Hold the selected auto-injector with your thumb and two (2) fingers (pencil writing position). Be careful not to inject yourself.
- B. Follow selected device manufactures recommendations concerning administration.
 1. Hold the auto-injector with tip near the outer thigh.
 2. **Swing and firmly push the tip against the outer thigh** until it “clicks”. Keep the auto-injector firmly pushed against the thigh at a 90° degree angle (perpendicular) to the thigh.
 3. Hold firmly against the thigh for approximately ten (10) seconds to deliver the drug.
 4. Remove the auto-injector from the thigh. The tip will extend to cover the needle.
 5. Massage the injection site for at least ten (10) seconds.
 6. There are two (2) different sizes of epinephrine auto-injectors; “Adult” and “Pediatric”.
 - a. **Adult (> 30 kg):** Adult auto-injector ~ Epinephrine· 0.3 mg (0.3 mL) IM.
 - b. **Pediatric (15 - 30 kg):** Pediatric auto-injector ~ Epinephrine· 0.15 mg (0.3 mL) IM.
- C. Record time of injection.
- D. Reassess every two (2) minutes.
- E. Continue to monitor airway and be prepared to assist with ventilations as clinically indicated.
- F. If more than the appropriate dose is being considered or if there are questions / concerns contact the base hospital physician for online consultation.
- G. If unable to contact the base hospital physician, and after ten (10) minutes, the patient is still presenting with signs and symptoms of anaphylaxis with one or more of the following symptoms:
 1. Shock (sbp < 90mmHg);
 2. Edema to mouth and/or airway causing breathing difficulties; and
 3. Unconsciousness due to airway compromise.

Always administer the entire contents of the auto-injector. Never attempt to use an “adult” auto-injector on a “pediatric” patient (15 – 30 kg).

BLS provider may provide a second EMS administered dose of Epinephrine.

Note: For stability purposes, approximately 1.7 mL remains in the auto-injector after injection. Do not use the auto-injector if the solution is discolored or contains a precipitate.

8017.5 DOCUMENTATION

Providers must complete all patient care related documentation and forward to the EMS Agency within seventy- two (72) hours of administration.



EPINEPHRINE

Class:

Sympathomimetic, Vasopressor. Epinephrine stimulates alpha and beta receptors (alpha receptors at high doses; beta-₁ and beta-₂ receptors at moderate doses) within the sympathetic nervous system. It also relaxes smooth muscle of bronchi and is an antagonist of histamine.

Mechanism of Action:

Through its action on alpha receptors, epinephrine lessens the vasodilatation and increases vascular permeability that occurs during an anaphylactic reaction that can lead to loss of intravascular fluid volume and hypotension. Through its action on beta-₁ and beta-₂ receptors; epinephrine causes bronchial smooth muscle relaxation that helps alleviate bronchospasm, wheezing, and respiratory distress that may occur during anaphylaxis.

Indications:

Epinephrine is commonly used for the emergency treatment of life-threatening allergic reactions (anaphylaxis) caused by allergens, exercise, or unknown triggers; and for people who are at increased risk for these reactions. Epinephrine auto-injectors are intended for immediate EMT administration as emergency supportive therapy only.

Relative Contraindications:

There are no absolute contraindications to the use of epinephrine in a life-threatening situation

Adverse Reactions:

- A. Adverse reactions to epinephrine include transient:
 1. moderate anxiety, apprehensiveness, restlessness;
 2. tremor;
 3. weakness, dizziness;
 4. sweating;
 5. palpitations;
 6. pallor;
 7. nausea and vomiting;
 8. headache; and/or
 9. respiratory difficulties.
- B. Rapid rises in blood pressure have produced cerebral hemorrhage, particularly in elderly patients with cardiovascular disease. Angina may occur in patients with coronary artery disease. The potential for epinephrine to produce these types of adverse reactions does not contraindicate its use in an acute life-threatening allergic reaction.
- C. Accidental injection into the digits, hands or feet may result in loss of blood flow to the affected area. Adverse events experienced as a result of accidental injections may include increased heart rate, local reactions including injection site pallor, coldness and/or injury at the injection site resulting in bruising, bleeding, discoloration, erythema or skeletal injury.

Drug Interactions:

Patients who receive epinephrine while also taking cardiac glycosides or diuretics should be observed carefully for the development of cardiac arrhythmias.

Duration of Action:

- A. Onset: within 2-5 minutes.

B. Peak effect: variable.

C. Duration: > 5-10 minutes.

