POLICY NO. 551.30

Prehospital Treatment Guidelines

for

Basic Life Support

Providers

Stanislaus County
Emergency Medical Services Agency

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CARDIAC EMERGENCIES

Shock (Non-Traumatic) c-1

PRIORITIES:
- ABCs
- Identify signs of shock
- Determine if patient has shock with or without pulmonary edema
- Assure an advanced life support response

Shock Without Pulmonary Edema

Signs and symptoms of shock with dry lungs, flat neck veins. May have poor skin turgor, **color,** delayed capillary refill**,** history of GI bleeding, vomiting, diarrhea.

1. Ensure a patent airway, suction as necessary.

2. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Keep the patient warm, but don=t overheat.

CARDIAC EMERGENCIES

Shock (Non-Traumatic) With Pulmonary Edema c-2

PRIORITIES:
- ABCs
- Identify signs of shock
- Determine if patient has shock with or without pulmonary edema
- Assure an advanced life support response

Shock With Pulmonary Edema

Signs and symptoms of shock with crackles on auscultation, ankle edema, and distended neck veins.

1. Ensure a patent airway, suction as necessary.

2. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Position of comfort.

4. Keep the patient warm, but don=t overheat.

Cardiac Arrest (Ventricular Fibrillation) c-3

PRIORITIES:
- ABCs
- Assure an advanced life support response
- Reassess respirations and pulse frequently
- History, if possible:
  - Age, sex, weight
  - Estimated time patient last seen breathing
  - Down time with CPR
  - Symptoms prior to collapse

Cardiopulmonary Arrest - Basic Therapy

No spontaneous pulse or respirations, nontraumatic setting.

1. Initiate CPR

   - $ Maintain airway with manual airway techniques.
   - $ Insert oropharyngeal/nasopharyngeal airway and ventilate with a bagvalve-mask or flow restricted oxygen device.

2. Consider:

   - $ Victims suffering from hypothermia often look dead when they are still salvageable.
   - $ All drowning victims should be resuscitated. People who have been submerged in cold water for a long time may be salvageable.

Cardiopulmonary Arrest - Early Defibrillation Protocol (Automated Defibrillator)

1. Provide CPR until defibrillator is ready.

2. Remove patient=s clothing to expose the chest to the waistline.

3. Have the defibrillator evaluate the ECG rhythm and shock the patient up to three times in a row.

CARDIAC EMERGENCIES
Chest Pain c-10

PRIORITIES:

- ABCs
- Degree of distress? Shock?
- Administer oxygen
- Assure an advanced life support response
- History
- Collect medications

Chest Pain Suspicious of Cardiac Origin

Substernal pain, discomfort or tightness radiating to jaw, either shoulder, or arm, nausea, vomiting, diaphoresis, dyspnea, anxiety.

1. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

2. Reassure the patient and place in a position of comfort.

3. Loosen tight clothing.

4. Restrict patient movement, lift patient on to stretcher.

5. If the patient wants to take their own medication, allow them to do so.

   Special Note:
   If the patient wants to take their own nitroglycerine, allow the patient to do so. It is recommended that a patient with a blood pressure less than 100 mmHg systolic be advised not to take medication because of the risks associated with hypotension. Blood pressure, pulse, and respirations must be checked each time a patient takes their own medication. If the blood pressure drops dramatically, or the patient exhibits a decreased level of consciousness, lay the patient down and elevate legs. Counsel the patient to not take any more medications until ALS arrive on scene, or a base hospital physician can be consulted.

6. If signs of shock, see SHOCK (Non-Traumatic).

CARDIAC EMERGENCIES
Hypertensive Emergencies c-12

PRIORITIES:
- ABCs
- Airway maintenance, support ventilation, prevent aspiration
- Identify and document progression of neurological deficits:
- Motor weakness
  - Speech disturbances, headache, visual problems
  - Altered mental status
- Assure an advanced life support response
- Obtain a complete patient history

Hypertensive Emergencies

An elevation of blood pressure associated with neurologic deficit, altered level of consciousness, chest pain, pulmonary edema, headache or blurred vision, pregnancy.

1. Ensure a patent airway, suction as needed.

2. Oxygen Therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Sit patient up or elevate head if awake. Place on left side if patient has an altered mental status, a decreased gag reflex, or if a neurologic deficit is present.

4. Monitor and record vital signs with neurological checks frequently. Take a series of blood pressure measurements (at least every five minutes until ALS arrives).

5. Minimize stimulation and noise. Keep patient calm.

6. Anticipate and treat appropriately for seizures.

NEUROLOGIC EMERGENCIES Coma/Altered Level of Consciousness n-1 (Non-Diabetic)

PRIORITIES:

ABCs
Determine which cause of altered mental status best fits patient=s signs, symptoms, and history (bystander, history of diabetes, depression, fever, drug use, daily medications) Consider c-spine precautions
Administer oxygen
Assure an advanced life support response
Identify and document neurological deficits
Obtain a complete patient history

Coma/Altered Level of Consciousness

Glasgow Coma Scale less than 15, history unclear (consider AEIOU TIPS).

1. ABCs

   a. Insert oropharyngeal/nasopharyngeal airway as tolerated.
   b. Assist ventilations as needed.
   c. Suction as necessary.

2. Immobilize the spine in trauma or the suspicion of trauma.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Patient position

   a. No trauma and good gag reflex - position of comfort for patient.
   b. No trauma and decreased gag reflex - position on left side.
   c. Head trauma - position supine with long backboard and monitor airway.

Special Note:
DO NOT assume alcohol intoxication as primary cause. All patients with altered level of consciousness should be treated and transported to a facility where a complete medical evaluation can occur.

NEUROLOGICAL EMERGENCIES Coma/Altered Level of Consciousness n-2 Complications of Diabetes

PRIORITIES:

ABCs
Determine which cause of altered mental status best fits patient=s signs, symptoms, and history (bystander, history of diabetes, depression, fever, drug use, daily medications) Consider c-spine precautions
Administer oxygen
Assure an advanced life support response
Identify and document neurological deficits
Obtain a complete patient history

Diabetic Ketoacidosis

Confusion, dehydration, Kussmaul respirations, nausea, vomiting, fruity odor on breath. Missed insulin dose(s), or may be first manifestation of diabetes.

1. Treat as general coma/altered level of consciousness (n-1).

Hypoglycemia

Altered level of consciousness may be preceded by periods of diaphoresis, tremors. May have history of insulin or oral hypoglycemic therapy.

1. Treat as general coma/altered level of consciousness (n-1)

2. Oral glucose - 30-gram tube may be administered if the patient is conscious, has a gag reflex, and is a diabetic who takes oral hypoglycemics or insulin injections.

NEUROLOGIC EMERGENCIES
Seizures n-3

PRIORITIES:

ABCs
Airway maintenance, support respiration, prevent body injury
Determine degree of physiologic distress, possible cause of seizure
Assess and document course of seizure
Assure an advanced life support response
Obtain patient history - note number of seizures and time interval of seizure activity

General Seizures

Uncontrolled movements with unconsciousness, followed by a period of sleepiness . Usually history of prior seizures, on medication, or alcohol withdrawal.

1. Ensure a patent airway.

   a. Insert oropharyngeal/nasopharyngeal airway as tolerated.
   b. Assist ventilations as needed.

c. Suction as necessary.

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Protect patient from injury by placing padding appropriately. Move objects away from patient. Do not forcibly restrain the patient.

5. Immobilize the spine in trauma or the suspicion of trauma.

6. Position on left side if no trauma.

7. Consider:
   - $ Cool with warm moist towels, removing clothing, if febrile
   - $ Diabetic hypoglycemia
   - $ Protect the patient from further injury
   - $ Provide for patient privacy, if possible

NEUROLOGIC EMERGENCIES
Acute Cerebrovascular Accident (Stroke) n-4

PRIORITIES:
- ABCs
- Airway maintenance, support ventilation, prevent aspiration
- Identify and document progression of neurological deficits:
  - Motor weakness, paralysis
  - Speech disturbances
  - Headache, visual problems
  - Altered mental status
- Assure an advanced life support response

Acute Cerebrovascular Accident (Stroke)

Sudden onset of weakness, paralysis, confusion, speech disturbances, may be associated with headache.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Position patient upright, if conscious, unless hypotensive. If unconscious or exhibiting signs of a decreased level of consciousness, place patient on affected side and support and protect paralyzed limbs. If hypotensive, place supine with legs elevated.

5. Monitor vital signs.

6. Give nothing by mouth; remove all dentures and false teeth, if possible.

7. Keep patient warm.

NEUROLOGICAL EMERGENCIES

Syncope/Near Syncope n-5

PRIORITIES:
- ABCs
- Assess level of consciousness
- Evaluation of:
  - Regularity of pulse, precipitating factors
  - Associated symptoms, medical history/medications
  - Progression of neurological deficits
  - Altered mental status
- Assure an advanced life support response

Syncope/Near Syncope

Episode of brief loss of consciousness, dizziness. Often postural, following defecation or early pregnancy. May have cardiac history.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Place patient in a position of comfort, if conscious, unless hypotensive. If hypotensive, place supine.

5. Monitor and record vital signs frequently.

Abdominal Pain m-1

PRIORITIES:
- ABCs
- Degree of distress? Shock?
- Administer oxygen
- Assure an advanced life support response
- History
- Obtain a complete history and collect medications

Abdominal Pain (Not in shock)

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Position of comfort if conscious, usually on either side with knees drawn up.

5. Nothing by mouth.

6. Consider:
   - $ Anticipate vomiting - save sample
   - $ Cervical spine protection if indicated
   - $ Avoid deep abdominal palpation

Abdominal Pain in Shock

1. See SHOCK - NON TRAUMATIC (c-1).

Gastrointestinal Bleeding

History of dark, tarry stools or vomiting blood, may or may not have abdominal pain. If in shock, see SHOCK.

1. See ABDOMINAL PAIN (m-1) listed above.

Anaphylaxis m-5

PRIORITIES:
- ABCs
- Respiratory Assessment (the more rapid onset, the more severe the reaction)
- Identify anaphylactic shock (anxiety, difficult swallowing, dyspnea, wheezing, hypotension)
- Assure an advanced life support response
- Attempt to prevent or inhibit absorption of the allergan

Anaphylactic Shock

The presence of hives, airway swelling or history of exposure to allergen with dyspnea, stridor, wheezing, tachycardia, hypotension, anxiety, tightness in the chest.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Consider:
   - $ Assist patient in administering his/her injectable or oral medications if available.
   - $ If stinger is still in place, remove stinger.
   - $ If exhibiting signs of shock, see SHOCK - NON TRAUMATIC (c-1).

- $ Restrict movement of involved extremity and attempt to keep affected extremity at or below the level of the heart.
- $ If evenomation see EVENOMATION (e-3).
- $ Ascertain if animal or venemous creature is available to be safely transported to the patient receiving facility.
- $ Do not apply cooling measure to snake bites.
- $ Keep patient calm, with as little movement as possible.

Poisons/Drugs m-6

PRIORITIES:

Approach patients after assessing appropriate safety for personnel
ABCs
Assure an Advanced Life Support response
Airway maintenance
Determine type, amount, and time material was absorbed by the patient
Bring in the container and/or label
Initiate treatment under the direction of the base hospital or poison control center

Toxic Ingestions and Exposures - Basic Therapy

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Position of comfort if conscious. If depressed level of consciousness, position on left side.

5. Consider:
   - $ Contact base hospital or poison control center.
   - $ Be careful not to contaminate yourself and others.

- If patient is fully conscious and alert, do **NOT** attempt to dilute ingested substances with water or milk, unless landline consultation with a base hospital.
- Skin contact with toxic agent: Remove patient from contact with source. Remove clothing from patient, if contaminated. If the contact substance is a powder, brush off first, then wash off; otherwise wash copiously with water, as indicated (up to 20 minutes or more may be indicated).
- Locate containers or types of substance for transport to hospital for identification (if safe to handle).
- Monitor vital signs and level of consciousness. Watch for seizures.
- Observe patient at all times. Never leave a patient alone.

RESPIRATORY EMERGENCIES

Airway Obstruction r-1

PRIORITIES:
- ABCs
- Degree of distress? Shock?
- If complete airway obstruction, proceed to obstructed airway treatment
- Assure an advanced life support response

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

Conscious Patient - Able to Speak

1. Leave the patient alone; offer reassurance.
2. Encourage coughing.
3. Offer OXYGEN therapy at 15 liters/minute via mask, 6 liters/minute by nasal cannula or blow-by as tolerated, or oxygen therapy as indicated by clinical condition. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly.*
4. Frequent suctioning as needed to control secretions.
5. Avoid agitating the patient.

Conscious Patient - Unable to Cough or Speak

1. Ask the patient if s/he is choking.
2. Administer abdominal thrusts until the foreign body is expelled or until the patient becomes unconscious.
3. After obstruction is relieved, reassess the airway, lung sounds, skin color, and vital signs.
4. Oxygen therapy as indicated by clinical condition. *Pulse oximetry is an excellent tool for the assessment of oxygenation status. However, the pulse must be palpated directly*.

Adult Patient Who Becomes Unconscious

1. Roll patient on to back; open airway (jaw thrust - chin lift); perform finger sweep.
2. Attempt bag-valve-mask ventilations; if unable to ventilate, perform 6-10 additional abdominal thrusts.
3. Perform a finger sweep and attempt to ventilate.
4. If still obstructed, repeat the above sequence.

Patient Found Unconscious

1. Roll the patient on to back; open airway (jaw thrust - chin lift) .
2. Follow sequence for adult who becomes unconscious.

Airway Obstruction r-1 (cont=d.)

Child With Complete Obstruction

1. In infants <1 year old, start with five (5) back blows with the infant straddled over the arm in the prone position, with the head lower than the trunk.
2. Administer back blows with the infant on the rescuer=s thigh, and deliver the blows with the heel of the hand.
3. Turn the infant over and deliver five (5) chest compressions in a manner similar to CPR (but slower). Finger sweeps are to be avoided unless the foreign body can be seen and plucked (with the fingers) from the infant=s mouth.
4. In children >1 year of age, treatment follows the same sequence as in the adult, except that finger sweeps are to be avoided unless the foreign body can be seen and plucked (with the fingers) from the child=s mouth.
5. Administer 100% oxygen by non-rebreather mask or blow-by.

RESPIRATORY EMERGENCIES

Croup/Epiglottitis r-2

PRIORITIES:
- ABCs
- Determine degree of physiologic distress
  - Respiratory rate >20; use of accessory muscles; cyanosis; inadequate ventilation; depressed level of consciousness
- Maintain airway, provide oxygen and ventilatory support
- Assure ALS response
- Determine which causes best fit patient signs and symptoms, initiate treatment

A history of upper respiratory infection or croupy cough, sore throat, fever, stridor or drooling.

1. Offer reassurance; if patient is a child, allow parent to hold child if the presence of the parent has a calming effect on the child.

2. Administer 100% oxygen by non-rebreather mask or blow-by. Allow parent to hold oxygen mask if patient is a child.

3. If patient deteriorates, or becomes completely obstructed, provide positive pressure ventilation via bag-mask.

4. Consider:
   - $ Do not attempt to visualize throat if epiglottitis is suspected.
   - $ Do not put anything into a child=s mouth under any circumstance if epiglottitis is suspected. Such stimulation is likely to cause laryngospasm and/or increased airway obstruction.
   - $ Position the child upright, leaning forward to allow drainage of secretions.
   - $ Minimize stimulation.

Acute Respiratory Distress r-3

PRIORITIES:
- ABCs
- Determine degree of physiologic distress
  - Respiratory rate >20; use of accessory muscles; cyanosis; inadequate ventilation; depressed level of consciousness
- Maintain airway, provide oxygen and ventilatory support
- Assure an advanced life support response

Respiratory Distress

Increased respiratory rate or difficulty breathing.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Place patient in position of comfort if conscious. If depressed level of consciousness, position on left side.

Respiratory Arrest r-4

PRIORITIES:
- ABCs
- Maintain airway, provide oxygen, and ventilatory support
- Assure an advanced life support response

Respiratory Arrest

Absence of spontaneous ventilations without cardiac arrest, consider narcotic overdose.

1. Ensure patent airway (suction as necessary).
2. Support ventilations with appropriate airway adjuncts. Administer oxygen at 15 liters per minute.

PRIORITIES:
- ABCs
- Determine degree of physiologic distress
  - Respiratory rate >20; use of accessory muscles, cyanosis; inadequate ventilation; depressed level of consciousness
- Maintain airway, provide oxygen and ventilatory support
- Assure an advanced life support response

Chronic Obstructive Pulmonary Disease

Chronic symptoms of pulmonary disease, wheezing, cough, decreased breath sounds, may have barrel chest.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Place patient in position of comfort if conscious. If depressed level of consciousness, position on left side.

5. Consider:
   - $ Assist patient with his/her medications if available.

- $ Limit any physical exertion or movement the patient may be attempting.
- $ Loosen tight clothing.
- $ Encourage patient to cough up sputum.
- $ Keep patient warm, but not overheated.

Asthma/Bronchospasm r-6

PRIORITIES:
ABCs
Determine degree of physiologic distress respiratory rate >20; use of accessory muscles; cyanosis; inadequate ventilation; depressed level of consciousness
Maintain airway, provide oxygen and ventilatory support
Assure an advanced life support response

Acute Asthma/Bronchospasm

Acute onset of respiratory difficulty, usually with a history of prior attacks, wheezes, coughing.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Place patient in position of comfort if conscious. If depressed level of consciousness, position on left side.

5. Consider:
   - $ Assist patient with his/her medications if available.
   - $ Limit any physical exertion or movement the patient may be attempting.
   - $ Attempt to reduce patient anxiety.
   - $ Monitor vital signs, respiratory status, and level of consciousness.

Acute Pulmonary Edema r-7

PRIORITIES:
ABCs
Determine degree of physiologic distress
Respiratory rate >20; use of accessory muscles; cyanosis; inadequate ventilation; depressed level of consciousness
Maintain airway, provide oxygen and ventilatory support
Determine which causes best fit patient signs and symptoms, initiate treatment
Assure an advanced life support response

Acute Pulmonary Edema

Acute onset of respiratory difficulty, may have history of cardiac disease, rales, crackles, occasional wheezes.

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts. Ventilations may need adjunct support even if the patient is conscious.

3. Oxygen therapy - Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Position of comfort if conscious. If depressed level of consciousness, position on left side.

5. Consider:
   - $ Assist patient with his/her medications, if available.
   - $ Limit any physical exertion or movement the patient may be attempting.
   - $ Attempt to reduce patient anxiety.

Toxic Gas Inhalation r-9

PRIORITIES:
ABCs
Determine degree of physiologic distress
Maintain airway, oxygen therapy, ventilation support
Assure an advanced life support response

Toxic Gas Inhalation

RESPIRATORY EMERGENCIES

Respiratory distress caused by inhalation of toxic gasses by history. Suspect carbon monoxide with history of fire in an enclosed space, symptoms of headache, dizziness which may be associated with cherry-red coloration of mucous membranes (late sign).

1. Remove patient from toxic environment with attention to safety of rescue personnel.

2. Oxygen - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by nonrebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

PRIORITIES:

ABCs

PEDIATRIC CARDIAC EMERGENCIES
Cardiorespiratory Emergencies p-1

90% of pediatric arrests are respiratory - give special attention to the airway and breathing
Assure an advanced life support response
Transport as soon as possible

Pediatric Cardiopulmonary Arrest - Basic Therapy

No spontaneous pulses or respirations in a non-traumatic setting. SIDS is the sudden and unexpected death of a seemingly healthy infant, which remains unexplained sometimes even after autopsy. SIDS is the leading cause of death in infants between the ages of 2 weeks up to 2 years of age.

1. Basic CPR and airway management.

2. Considerations:
   - $ Ventilate patient with bag-valve-mask and 100% oxygen.
   - $ Do not hyperextend the neck when opening the airway of an infant or small child, as this may occlude the airway.

3. Keep patient warm.

PEDIATRIC EMERGENCIES
Pediatric Hypotension p-3

PRIORITIES:
- ABCs
- Assure an ALS response
- Identify signs of shock
- Determine if patient has shock with or without pulmonary edema

Listless infant or child, poor skin turgor, dry mucous membranes (i.e., dehydration), history of fever may indicate sepsis, meningitis, setting of trauma indicates hemorrhage.

Normal Vital Signs for Age

Age	Systolic B-P	Pulse	Resp. Rate
Newborn	50	120	40-60
Child	70-90	95-110	20-30
10-15 yrs	110-120	75-85	18-22

1. Ensure a patent airway.

2. Oxygen therapy as tolerated for age (mask vs. nasal cannula). Be prepared to support ventilations with appropriate airway adjuncts. Flow restricted oxygen devices are contraindicated in children (no demand valves).

PRIORITIES:
ABCs

3. Keep patient dry and warm.

4. Control any bleeding.

5. See SHOCK - NON TRAUMATIC (c-1).

Vaginal Hemorrhage With Shock o-1

Identify the signs of shock Determine stage (trimester) of pregnancy (if pregnant) Determine the degree of physiologic distress, estimate amount of blood loss Assure an advanced life support response

Shock/Impending Shock or Third Trimester Bleeding

Profuse vaginal bleeding, signs of shock or any bleeding in the third trimester.

1. Ensure a patent airway (suction as necessary).

2. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. If patient is pregnant, place patient on left side.

4. Monitor vital signs frequently.

5. See SHOCK - NON TRAUMATIC (c-1).

6. See IMMINENT DELIVERY (o-3).

7. Do not pack vagina.

8. Save and transport any tissue passed.

Vaginal Hemorrhage Without Shock o-2

PRIORITIES:
- ABCs
- Identify signs of shock
- Determine stage (trimester) of pregnancy (if pregnant)
- Determine the degree of physiologic distress, estimate amount of blood loss
- Assure an advanced life support response

Vaginal Bleeding Not in Shock

Abnormal (non-menstrual) vaginal bleeding, between menses, during pregnancy, postpartum or post operative.

1. Ensure a patent airway (suction as necessary)

2. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. If postpartum, perform gentle fundal massage, put baby to breast.

4. Monitor vital signs frequently.

Spontaneous Abortion

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Have patient place a sanitary napkin over vaginal opening.

5. Monitor vital signs frequently.

6. See SHOCK - NON TRAUMATIC (c-1)

7. Do not pack vagina.

8. Save and transport any tissue passed.

Imminent Delivery (Normal) o-3

Identify the signs of shock Determine stage (trimester) of pregnancy Determine the degree of physiologic distress, estimate amount of blood loss Assure for an advanced life support response

Imminent Delivery, Normal Presentation

Regular contractions, bloody show, low back pain, feels like bearing down, crowning.

1. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

2. Prepare patient for home delivery. Reassure mother, instruct during delivery.
3. Wash hands, drape patient, prepare delivery kit, and put on gloves.
4. Prevent explosive delivery of head by directing mothers urge to push and apply slight counter pressure on the baby=s head.
5. When the head is delivered, check neck for umbilical cord and if present, remove it from around the neck. If the cord cannot be removed, clamp in two places and cut between the two clamps. Exercise extreme caution, blunt end scissors recommended for cutting cord.
6. Suction mouth and nose of the infant x 2.
7. Ease delivery of upper and lower shoulder by gentle directional traction.
8. Lay baby at or below level of mother until cord is clamped. Suction airway and dry infant. Keep the baby warm and dry, and be sure to wrap the head. Place the baby on the mother=s abdomen or breast. Allow the cord to stop pulsating. Double clamp the cord and cut 8 - 10 inches from the baby. Check carefully for bleeding. If bleeding occurs, reclamp or tie the cord closer to infant.
9. If the infant has a heart rate greater than 100 with regular respirations, oxygen should be given either via oxygen mask, or oxygen tube and cupped hand (blowby technique), at 5 L/min.
10. Placenta may deliver prior to transport. Do not pull on the cord. Place placenta in a plastic bag and retain for transport with patient.
11. Observe mother and infant frequently for complications. Fundal massage and/or allowing the child to nurse will cause the uterus to contract and decrease postpartum bleeding. Prepare mother and infant for transport. Keep infant warm.
12. If bleeding, see VAGINAL HEMORRHAGE WITHOUT SHOCK (o-2)
13. If delivery is premature (<36 weeks gestation), prepare for neonatal resuscitation.

PRIORITIES:
ABCs

OB-GYN EMERGENCIES
Imminent Delivery (Complications) o-4

PRIORITIES:
ABCs
Identify the signs of shock
Determine stage (trimester) of pregnancy
Determine the degree of physiologic distress, estimate amount of blood loss
Assure an advanced life support response
Transport at earliest opportunity

Breech Presentation

Presentation of buttocks or feet.

1. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

2. Allow delivery to proceed passively.
3. Use hand to prevent explosive delivery.
4. Rotate baby to face down position (do not pull).
5. If the head does not readily deliver in 4 - 6 minutes, insert a gloved hand into the vagina to create an air passage for the infant.
6. Monitor vital signs frequently.

Prolapsed Cord

Cord presents first and is compressed during delivery, compromising infant circulation.

1. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

2. Place mother in shock position with her hips elevated on pillows, or knee chest position.
3. Insert gloved hand into vagina and gently push presenting part of the infant off of the cord. Do not attempt to reposition the cord. Cover cord with saline soaked gauze.
4. Monitor vital signs frequently and keep mother and infant warm.

PRIORITIES:
ABCs

OB-GYN EMERGENCIES
Severe Pre-Eclampsia/Eclampsia o-5

Identify the signs of shock
Determine stage (trimester) of pregnancy
Determine the degree of physiologic distress, estimate amount of blood loss
Assure an advanced life support response

Severe Pre-Eclampsia/Eclampsia

Third trimester pregnancy with hypertension (BP systolic > 160, diastolic >110, mental status changes, visual disturbances, peripheral edema (pre-eclampsia), seizures and/or coma (eclampsia).

1. Ensure a patent airway for the mother (suction as necessary).

2. Oxygen therapy - Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Attempt to maintain a quiet environment, darken the room.

4. Monitor vital signs frequently.

5. Treat seizures, coma, and hypertension per COMA/SEIZURES/HYPERTENSIVE EMERGENCY guidelines.

NEONATAL RESUSCITATION
Neonatal Resuscitation p-4

PRIORITIES:

Vital signs (normal ranges - heart rate 120-190, respiratory rate >40)
APGAR rating
Assure an advanced life support response
All neonates need to be gently suctioned, (mouth first, then nose); dried and kept warm Initiate CPR for neonates in full arrest and neonates not initially responding to treatment

APGAR SCORE

Check APGAR at 1 minute, 5 minutes, and every 5 minutes thereafter.

APGAR CHART

	0	1	2
Appearance	Blue-Pale	Body Pink Limbs Blue	Pink All Over
Pulse	Absent	<100	> 100
Grimace	No Response	Grimace	Cough, Cry, Sneeze
Activity	Flaccid	Some Flexion	Active Movement
Respiratory Effort	Absent	Slow, Irregular	Strongly Crying

APGAR 7-10

1. Suction with bulb syringe.
2. Keep dry and warm (skin to skin with mother and blanket).

APGAR 4-6

1. Suction with bulb syringe.
2. Ventilate 30-40 breaths/min with bag-valve mask with 100% oxygen.
3. Keep dry and warm.

APGAR 0-3

1. Suction with bulb syringe.
2. Support ventilation 30-40 breaths/min with bag-valve-mask with 100% OXYGEN, bag and mask.
3. If heart rate <80/minute, begin cardiac compressions.

PRIORITIES:

ABCs

4. Keep dry and warm.

ENVIRONMENTAL EMERGENCIES
Heat Illness/Hyperthermia e-1

Remove from offending environment and initiate immediate cooling as appropriate
Assure an advanced life support response
Determine degree of physiologic distress, identify nature of illness or injury If patient is in extremis, begin therapeutic modalities prior to conducting secondary evaluation

Heat Cramps/Heat Exhaustion

Cramping of the most exercised muscles may be worsened by replacement of exertion-induced fluid losses (sweating) with water. Exhaustion, vague, flu-like symptoms, normal/slightly elevated body temperature, normal mental status.

1. Ensure a patent airway (suction as necessary).
2. Oxygen therapy - Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.
3. Move patient to a cool environment.
4. Suspect heat stroke.

Heat Stroke

Triad of exposure to heat stress, altered level of consciousness and elevated body temperature (usually 104□F or 40□C) often associated with tachycardia and hypotension.

1. Ensure a patent airway, suction as necessary.
2. Oygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

PRIORITIES:

If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Move to cool environment and begin rapid cooling measures: - Remove clothing and splash/sponge with water.
   - Place cool packs on neck and in axilla and inguinal areas.
   - Promote cooling by fanning. - Apply cool, wet sheets.
4. Be prepared for possible seizures.

PRIORITIES:

Hypothermia/Frostbite e-2

ABCs
Remove from offending environment
Assure an advanced life support response
Determine degree of physiologic distress, identify nature of illness or injury If patient is in extremis, begin therapeutic modalities prior to conducting secondary evaluation

Moderate Hypothermia

Body temperature 90 - 95° F (32 - 35° C), patient is conscious or shivering but often sleepy; skin pale and cold.

1. Ensure a patent airway, suction as necessary
2. Be prepared to support ventilations with appropriate airway adjuncts.
3. Oxygen therapy - Administer warm, humidified oxygen at 15 liters/minute with nonrebreather mask. Start at 2 liters/minute by cannula if patient has a history of COPD. Be prepared to support ventilations with appropriate airway adjuncts. DO NOT withhold oxygen from a patient in respiratory distress because of a history of COPD.
4. Gently move to sheltered area minimizing physical exertion or movement of the patient.
5. Cut away wet clothing and cover patient with warm, dry sheets or blankets.
6. Monitor vital signs frequently.

Severe Hypothermia

Body temperature <90° F (<32° C), patient has altered level of consciousness or comatose; dilated pupils; hypotensive, slow pulse to pulseless; slow to absent respirations.

1. Handle gently but ensure a patent airway, suction as necessary.
2. Oxygen therapy - Administer warm, humidified oxygen at 15 liters/minute with nonrebreather mask. DO NOT withhold oxygen from a patient in cardiorespiratory distress because of a history of COPD.
3. Cut away all wet clothing and cover patient with warm, dry blankets.
4. Move gently. Rough handling may precipitate cardiac arrest.
5. NOTE: Severe hypothermia patients may appear dead. When in doubt, do CPR.

ENVIRONMENTAL EMERGENCIES
Hypothermia/Frostbite e-2 (cont=d.)

Frostbite

Areas of skin that are white, numb, or burning; soft to touch but do not recolor with touch.

1. Evaluate and treat HYPOTHERMIA

2. Move to warm environment and wrap affected extremity with thick blankets or clothing. DO NOT rub or otherwise attempt active rewarming.

3. Monitor vital signs frequently

4. Consider:
   - $ Protect injured areas from pressure, trauma, and friction.
   - $ Do not rub or break blisters.
   - $ Do not allow to refreeze.
   - $ Restrict movement of extremities. Do not allow patient to walk if feet involved.
   - $ Keep patient warm, but not overheated.

PRIORITIES:
- ABCs
- Keep patient calm; determine degree of physiologic distress
- Do not apply ice
- Accurate description of snake, spider, insect, etc.
- Assure an advanced life support response
- Attempt to initiate prompt transport when available

Poisonous Bites and Stings - Basic Therapy

1. Ensure a patent airway (suction as necessary).
2. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

3. Identify cause. If feasible and safe to do so, have animal transported for identification purposes.
4. Monitor vital signs frequently.
5. Remove rings, bracelets, or other constricting items on the bitten extremity.
6. If exhibiting signs of allergic reaction or shock, treat per ANAPHYLAXIS (m-5)
7. Keep affected area below the level of the heart.

Bees/Wasps

1. Remove stinger.
2. Apply cold packs.
3. If exhibiting signs of allergic reaction or shock, treat per ANAPHYLAXIS (m-5).

Snake Bites

1. Avoid excessive movement of the affected extremity, keeping it in neutral position relative to the heart.
2. Circle any swelling around bite marks, and note time. Additionally, measure the extremity proximal to the bite and note time. This measurement can be used as a baseline for determining the progress of swelling.
3. Do **NOT** incise skin or apply any cooling measure.
4. Monitor distal pulses.

Spider Bites/Scorpion Stings

1. Remove stinger.
2. Apply cold pack to affected area.
3. Avoid excessive movement, keeping the affected extremity dependent.

4. See ANAPHYLAXIS (m-5).

ENVIRONMENTAL EMERGENCIES
Burns e-4

PRIORITIES:
- ABCs
- Assume airway/respiratory involvement in chemical burns and fires in closed spaces
- Stop the burning process
- Assure an advanced life support response

Burns

Damage to the skin caused by contact with caustic material (chemical burns), electricity, fire or heat source. Burns involving ~~20%~~ ***greater than 15%*** *of the body surface area, or those associated with respiratory involvement are considered major burns.*

1. Move patient to a safe environment, if necessary.
2. Chemical Burns: Brush off dry chemicals and flush with copious amounts of water. Consult container label for decontamination instructions and transport label with patient.

   Tar Burns: Cool with water and transport; do not attempt to remove tar.

   Thermal Burns: Cool with water for up to 5 minutes to stop the burning process. Avoid prolonged cool water usage due to risks of hypothermia and local cold injury.

3. Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.

4. Dress Burns.

   ~~Thermal Burns with >20% body surface area, c~~*C*over with dry dressing and keep patient warm.

   ~~Thermal Burns with <20% body surface area, cool with saline soaks.~~

PRIORITIES:
- ABCs
- Treat hypoxia
- Assure an advanced life support response
- Protect C-Spine, if neck injury suspected
- Full arrest should be stabilized at scene

Drowning

Loss of consciousness in water, now in full arrest.

1. Treat as CARDIOPULMONARY ARREST, with considerations for hypothermia and spinal precautions. In a cold water drowning, start CPR.

Near Drowning

Loss of consciousness in water, not in full arrest.

1. Ensure a patent airway (suction as necessary).
2. Oxygen therapy - Administer oxygen at 15 liters/minute with non-rebreather mask. Start at 2 liters by cannula if patient has a history of COPD. Be prepared to support ventilations with appropriate airway adjuncts. DO NOT withhold oxygen from a patient in cardiorespiratory distress because of history of COPD.
3. Protect the cervical spine, if neck injury suspected.
4. Anticipate vomiting. Take precautions against aspiration, be prepared for suctioning.
5. Remove wet clothing; keep patient warm and dry.
6. Monitor vital signs frequently.

BEHAVIORAL EMERGENCIES
Crisis b-1

PRIORITIES:
- ABCs
- Assure an advanced life support response
- Determine causes of the reactions and attempt to rule out physiological reasons for patient=s behavior, e.g., depression, diabetes, fever, drug use, daily medications, etc.
- Record physiological and psychological findings

Acute Stress Reaction

Unruly, irrational behavior that may be caused by a stressful event.

1. Protect yourself and others. Never try to subdue a patient forcibly without adequate help (at least four people, from law enforcement, other rescuers, etc.)

2. One rescuer must assume control of the situation to minimize confusion on the part of patients and rescuers alike.

3. Speak in a calm but firm voice, moving slowly when approaching and caring for the patient.

4. Assess and treat life-threatening illnesses and injuries, per specific treatment guidelines. If patient refuses care and transport, consider obtaining 5150 hold per local procedure.

PRIORITIES:
ABCs
Assess and treat as a trauma victim first; ensure a patent airway taking appropriate spinal precautions
Assure an advanced life support response
Provide emotional support for both the victim and family or friends present

Child Abuse/Sexual Assault

Minor victim of physical abuse or victim (adult or child) of nonconsensual sexual activity.

1. Assess and treat as a trauma victim first; ensure a patent airway, taking spinal precautions, if appropriate.

2. Oxygen therapy, if indicated.

3. Assess for and treat any associated injuries or illnesses per specific treatment guidelines.

4. Provide reassurance and emotional support.

5. Encourage patient to be transported to designated sexual assault treatment center, if condition allows. In cooperation with law enforcement, discourage bathing, washing, urination/defecation, or changing clothes.

6. Report incident as required by law.

TRAUMATIC EMERGENCIES
Traumatic Shock t-1

PRIORITIES: LOAD AND GO PROCEDURE
Assure an advanced life support response
Ensure a patent airway, taking appropriate spinal precautions
Details of the mechanism of injury and Trauma Score should be noted

Traumatic Shock

Signs and symptoms of shock due to traumatic injury.

1. Airway management/support with spinal immobilization/precautions:
   - Simplest effective method (basic airway management) with in-line cervical immobilization. DO NOT APPLY TRACTION.

$ Immobilization of the cervical/thoracic/lumbar spine with the body secured to the backboard.

2. Oxygen therapy - Administer oxygen at 15 liters/minute by non-rebreather mask. DO NOT withhold oxygen from a patient in respiratory distress because of a history of COPD.

3. Apply dressing and pressure to active bleeding sites.

4. Lay patient flat.

5. Keep patient warm, not overheated.

6. Place splints.

7. Reassess patient vital signs.

8. Give nothing by mouth.

9. Monitor vital signs frequently.

TRAUMATIC EMERGENCIES
Traumatic Arrest t-2

PRIORITIES:
Begin CPR
Assure a patent airway
Take appropriate spinal precautions
Assure an advanced life support response

Cardiopulmonary Arrest Due to Traumatic Injury

1. Basic CPR.

2. Airway management/support with spinal immobilization/precautions:
   - $ Simplest effective method (basic airway management) with in-line cervical immobilization.
   - $ Immobilization of the cervical spine and body secured to the backboard.

3. Ventilate with bag-valve-mask with 100% oxygen.

4. Place splints, apply dressings and pressure to injuries, as time allows.

TRAUMATIC EMERGENCIES
Head and Neck Trauma t-3

PRIORITIES:

ABCs
Identify airway compromise/obstruction, respiratory insufficiency/arrest, active bleeding, shock, altered mental status, and initiate appropriate management
Protect the cervical spine - regardless of neurologic status or patient mobility
Assure an advanced life support response

Head Trauma

1. Airway management must include in-line cervical immobilization of the neck.
2. Support ventilations with appropriate airway adjuncts and oxygen therapy.
3. C-spine precautions include placing the patient supine with the head in the midline. It is not appropriate to leave a potential cervical neck-injured patient Aas he lies.@
4. Consider:
   - $ Control face and head bleeding with direct pressure. Utilize extreme caution with potential skull fractures.
   - $ Check the oropharynx for teeth and dentures.
   - $ Frequent airway suctioning is needed to prevent aspiration of blood, etc.
   - $ Avoid applying direct pressure to an injured eye. Do not attempt to replace the partially torn globe - stabilize it in place with a saline-soaked gauze.
   - $ DO NOT assume alcohol intoxication as primary cause. All persons with altered level of consciousness associated with trauma require treatment and transport at a medical facility where the patient can receive a complete medical examination.

Neck Trauma

1. Because of the severe consequences of inadequately immobilized bluntmechanism spinal injuries, all patients with signs or symptoms of spine injury must be appropriately immobilized.

2. However, because of the clear dangers of spinal immobilization to all patients, those patients without suspicious signs or symptoms of spine injury MUST NOT be immobilized. The greatest danger to all patients in spinal immobilization is inability to protect their airway in the event of vomiting. Increasing pain from the immobilization device is almost universal for all patients, as well. Pressure necrosis of skin, especially of elderly patients or those in shock, does occur. Adverse impact on respiration and venous return to the heart also happens,

especially to the elderly. Improperly-sized immobilizers, when applied to obese patients and children, may actually increase risk to the spinal cord or airway.

3. Full spinal immobilization for suspected cervical or upper thoracic spine injury

after blunt trauma must include the following equipment and techniques:

a. Full-length spine board or vacuum immobilization mattress. Device must meet OSHA requirements. It may be of break-away design.
b. Rigid extrication-type cervical collar, of proper size, that provides full occipital and mandibular support.

TRAUMATIC EMERGENCIES Head and Neck Trauma t-3 (cont=d.)

c. Lateral head support that prevents head rotation by stabilizing the temples. May be of foam or cardboard. ATowel roll@ type improvised supports are not acceptable
d. Forehead and chin attachment may be made with adhesive or duct-type tape, and must prevent head rotation. Do not tape facial hair or eyebrows. **Do not** apply tape directly to skin. Padding must always be placed between the skin and tape.
e. The primary method of securing a patient to an immobilization device should be with independently detachable straps. The straps must securely attach the torso and pelvis to the immobilization device, so that no motion occurs during log-rolling maneuvers. One must be able to independently detach torso or pelvic straps for exam or procedures, without loosening all straps. One must be able to detach and reattach straps with the patient supine on the immobilization device. Fasteners for the strap ends must not meet over the torso or pelvis. If scene conditions or patient size do not allow for the use of independently detachable straps, the use of D-ring straps with supplemental adhesive or duct-type tape is allowed. **Do not** apply tape directly to skin. Padding must always be placed between the skin and tape. One-piece threaded Aseat belt@ type straps are not acceptable. Duct tape or other tape is not acceptable on the torso, even as Areinforcement@ for straps.
f. Thigh and leg straps may be used to prevent extremity motion from shifting the pelvis. D-Ring straps may be used in a figure 8 pattern to secure the pelvis. Adhesive or duct-type tape may be used to stabilize the thigh and leg. **Do not** apply tape directly to skin. Padding must always be placed between the skin and tape.
g. Padding under joints and voids. These increase comfort (and hence decrease voluntary motion) and prevent loss of normal spinal curvature. In particular, padding under flexed knees dramatically decreases low back pain and lumbar movement.

4. If a patient is suspected of having only lumbar and lower thoracic spine injuries, they MUST NOT have immobilization of the cervical spine. It is necessary to immobilize only the thorax, pelvis, and lower extremities (omit steps b, c, and d, above).

5. Mechanical injuries of the lower back, such as occur with lifting or bending, virtually never cause instability of spinal supporting structures. Immobilization of any kind is not indicated. Transport these patients in a position of comfort, even if they have lower extremity nerve symptoms (sciatica).

6. Management of penetrating spine injuries remains controversial. Penetrating injuries of the spinal cord occur at the time of projectile impact only. Supporting spine structures remain intact and prevent further injury from the normal minor movement associated with extrication and resuscitation. Especially in neck and thorax penetrations, the risks of uncontrollable internal bleeding and unmanageable airway compromise outweigh the risk of further spinal cord injury. Hence, patients with penetrating trauma to the neck, back, chest, and abdomen, who do not have clear evidence of spinal cord injury or who are not comatose, should be transported without full spinal immobilization, if those immobilization steps would prolong on-scene time.

TRAUMATIC EMERGENCIES Head and Neck Trauma t-3 (cont=d.)

7. Approximately 1/3 to 2 of all trauma patients can be determined in the field to have very low risk of spinal injury. These patients must be identified, and spinal immobilization must NOT be applied. Always immobilize only those blunt trauma patients or suspected trauma patients who have:

    a. Posterior spine pain, tenderness with palpation, distal numbness, tingling, weakness, or paralysis.
    b. Anterior blunt trauma to the neck, obscuring posterior pain assessment.
    c. Altered consciousness or poor communication, so that their pain perception or neurologic exam cannot be trusted. These patients include those with:

        1. Altered level of consciousness.
        2. Intoxication by alcohol, drugs, or medications.
        3. Psychosis.
        4. Pre-verbal or very frightened children.
        5. Significant distracting pain (ex: other major fractures or significant abrasions).
        6. A primary language other than English with an unclear history as to the mechanism of injury.

8. A fully awake and oriented patient, without other significant distracting pain and no evidence of significant intoxication, and who does not have spinal pain or tenderness or distal signs of spinal nerve injury, MUST NOT be immobilized.

TRAUMATIC EMERGENCIES
Chest Trauma t-4

PRIORITIES:
ABCs
Assume the most serious consequence until proven otherwise
Assure an advanced life support response

General Treatment Guidelines

1. Oxygen therapy - Administer oxygen at 15 liters/minute by non-rebreather mask. DO NOT withhold oxygen from a patient in respiratory distress because of a history of COPD.

Impaled Object

1. Attempt to stabilize the object with bulky dressings. Do not remove unless object interferes with CPR (consult Base Hospital physician or ALS unit staff as soon as possible).

Flail Chest

Blunt trauma to the chest with paradoxical chest wall movement during respirations.

1. Consider mechanism of injury. Encourage the patient to take deep breaths.

2. Immobilize flail chest with thick dressing. DO NOT use ace wraps around the chest.

3. Be prepared to support ventilations with appropriate airway adjuncts.

4. Observe for progression to tension pneumothorax.

Open Chest Wound

Penetrating wound to the chest wall which actively communicates with pleural cavity.

1. Cover (do not stuff) the wound with occlusive dressing such as vaseline gauze and tape on three sides.

2. Continuously evaluate for the development of tension pneumothorax. If signs of increased difficulty occur, remove dressing to allow air to escape. Before the next inspiration, reapply dressing.

PRIORITIES:
ABCs
Any penetrating injury - handle as if abdominal cavity penetrated
Check for exit wounds
Assure patent airway, taking appropriate spinal precautions
Assure an advanced life support response

General Treatment Guidelines

1. Ensure a patent airway (suction as necessary).

2. Be prepared to support ventilations with appropriate airway adjuncts.

3. Oxygen therapy rate as indicated. If patient is unconscious or has focal neurologic deficit, administer 15 liters/minute via non-rebreather mask - DO NOT withhold oxygen from a patient in respiratory distress because of a history of COPD.

4. Give nothing by mouth.

5. Do not allow the patient to move.

6. Anticipate vomiting and shock.

Impaled Object

1. Attempt to stabilize the object with bulky dressings. Do not remove unless object interferes with CPR (consult Base Hospital physician or ALS unit staff as soon as possible).

Eviscerating Trauma:

1. Cover eviscerated organs with sterile, saline-soaked dressings.

2. Do not replace organs into abdominal cavity.

Genital Injury

1. Cover genitals with sterile, saline-soaked gauze.

2. Treat amputated parts per EXTREMITY AMPUTATIONS (t-6).

3. Apply direct pressure to control bleeding.

TRAUMATIC EMERGENCIES
Extremity Trauma t-6

PRIORITIES:
ABCs
Assure patent airway, taking appropriate spinal precautions
Check distal pulse, movement, sensation before applying splints
Assure an advanced life support response

Extremity Trauma General Guidelines

2. Assure patent airway, taking appropriate spinal precautions, suction as necessary
3. Oxygen therapy - Oxygen therapy - Nasal cannula oxygen at 1-6 L/min. Patients in extremis need oxygen by non-rebreather mask at 15L/min.

   If a patient is on home oxygen, start with only 1L/min more than the same amount of oxygen that they use routinely.
3. Control bleeding with direct pressure.
4. Return extremity to anatomic position, if possible, as resistance/pain allows.
5. Apply splints and recheck neurovascular status and distal pulses after each manipulation.
6. Cover open fractures with sterile, saline-soaked gauze, followed by dry dressings.
7. Splint all dislocations (joint injuries) in position found.

Amputations

1. Care of the amputated extremity
2. If partial amputation, splint in anatomic position and elevate the extremity.
3. If the part is completely amputated, wrap the amputated part in dry gauze and place in sterile, dry container or bag. Seal the bag. Place in a second container or bag. Place on ice, if available. DO NOT place part directly on ice or in water. Elevate the extremity involved and dress in dry gauze.

Hand and Wrist

1. Splint to include wrist.
2. Assess distal function (pulse, color, sensation, and motion) before and after splinting.

Lower Arm

1. Splint adjacent joints.
2. Assess distal function (pulse, color, sensation, and motion) before and after splinting.

Elbow Dislocation

1. Splint in position found.
2. Assess distal function (pulse, color, sensation, and motion) before and after splinting.

Upper Arm

1. Sling and swathe arm.
2. Assess distal function (pulse, color, sensation, and motion) before and after splinting.

Shoulder Fracture and Dislocations

1. Splint in position of comfort, sling and swathe, as warranted.
2. Assess distal function (pulse, color, sensation, and motion) before and after splinting.

Clavicle

1. Sling and swathe arm.

Scapula

1. Sling for arm.
2. Assess respiratory status.

Ribs

1. Assess respiratory status.
2. Flail chest assessment (see CHEST TRAUMA t-4).

Pelvis

1. Place on long board immobilization device.
2. Do not roll patient.

3. Treat for shock, if present.
4. Splint legs together, padding under knees for comfort.

Femur

1. Splint using an appropriate traction device or fixation splint, if not accompanied with a pelvis and/or lower leg fracture.
2. Assess distal pulses and neuro status before and after splinting.
3. Treat for shock, if present

Fibula-Tibia

1. Splint adjacent joints.
. 2. Assess distal pulses and neuro status before and after splinting.
3. Treat for shock, if present.

Hip Fracture or Dislocations

1. Stabilize in position of comfort. DO NOT apply a traction splint.
2 Assess distal pulses and neuro status before and after splinting.
3. Treat for shock, if present.

Knee Fractures and Dislocations

1. Splint in position found.
2. Assess distal pulses and neuro status before and after splinting.

TRAUMATIC EMERGENCIES Extremity Trauma t-6 (cont=d.)

Foot and Ankle Fractures

1. Splint but do not apply traction splint.
2. Assess distal pulses and neuro status before and after splinting.

Jaw (Maxillo-Facial Trauma)

1. Maintain airway.
2. Suction as necessary.
3. Consider c-spine immobilization.
4. Position patient to maintain airway.
5. Collect avulsed teeth and place in moist, sterile gauze and plastic bag.

TRAUMATIC EMERGENCIES
Soft Tissue Trauma t-7

PRIORITIES:

ABCs
Treat life threatening injuries first
Determine base line sensory and motor function/deficits prior to dressing
Look for underlying injuries
Assure an advanced life support response

Soft Tissue Injuries

1. Stop bleeding
   a. Direct pressure
   b. Elevate injury
   c. Pressure points
   d. Use tourniquets ONLY as a last resort, and then only to control hemorrhage.

2. Apply sterile dressing to open wounds.

3. Bandage.

4. Treat for shock, as indicated.

5. Assess function (pulse, color, sensation, and motion) distal to injuries.

6. Consider c-spine immobilization in all injuries above the clavicle.

7. Do not remove impaled objects.

TRAUMATIC EMERGENCIES
Eye Injuries t-8

PRIORITIES:

ABCs
Treat life threatening injuries first
Look for underlying injuries

Chemical Burns (Acid or Alkali)

1. Immediately irrigate profusely with water or normal saline on all chemical injuries (check for and remove contacts).

2. Assess and monitor respiratory status for possible inhalation exposure of noxious fumes or chemicals.

3. Avoid contaminating the other eye.

4. Care should be taken to avoid self-contamination.

Eye Trauma

1. Cover both eyes loosely with no pressure to the globe.

2. Position patient sitting up, if comfortable.

3. Impaled objects should be stabilized and NOT removed.

4. If foreign bodies are embedded in the eye, cover both eyes.

5. Assess for potential head and/or c-spine injury if mechanism or injury exists.

DISASTER INCIDENTS
Multiple Casualty (Triage Guidelines) d-1

PRIORITIES:
- Establish order
- Summon additional resources, as appropriate
- Alert the Disaster Control Facility to assess hospital statuses
- Patient triage
- Patient treatment
- Transport of the most critically ill
- Reassessment of remaining patients

1. ESTABLISH ORDER

   a. Overall scene management is under the direction of the Incident Commander. Medical scene management is typically under the direction of the Medical Group Supervisor.

   b. Ensure the safety of the scene, rescuers, and bystanders.

   c. Identify a Triage Unit Leader and begin triage.

   d. Alert the Control Facility to assess hospital statuses.

2. TRIAGE

   a. Perform a Primary Survey on all patients using the S.T.A.R.T. method of triage. Treatment during this process shall be confined to opening the airway and controlling serious hemorrhage.

b. Based on the initial triage, prioritize casualties:

$ IMMEDIATE
These patients are of the highest priority and are removed and treated first. They are the ones that may die within an hour if not treated rapidly. These patients have respirations greater than 30/min, no radial pulses, or are unable to follow simple commands.

$ DELAYED
The patients falling into this category are those whose injuries are such that they may die after an hour, if not treated. These injuries are serious and need attention; however, treatment and removal may be delayed until the Immediate patients have been stabilized. Examples may include burns, major fractures, and spinal injuries.

DISASTER INCIDENTS Multiple Casualty (Triage Guidelines) d-1 (cont=d.)

$ MINOR
These patients are able to walk. The types of injuries in this category may have treatment delayed and may be transported by some means other than ambulance. Examples may include minor fractures, lacerations with minimal blood loss, rib fractures without breathing difficulty, and minor burns.

$ DECEASED
These patients are the already dead or so severely injured that death is certain within a short time, regardless of treatment given.

c. Tag patients according to priority and, if needed, gather into treatment areas by priority.

3. TREATMENT
Begin treatment of casualties, Immediate patients first, Delayed second and so on, in accordance with specific treatment guidelines.

4. ADDITIONAL RESOURCES

a. As the need for additional resources becomes evident, that need should be communicated to the Incident Commander.

b. Local hospitals should be notified as to the nature and extent of the disaster.

5. TRANSPORT the most critically ill first, and others as indicated by severity, available equipment, and resources.

6. REASSESSMENT OF REMAINING PATIENTS

As patients are triaged, treated, and transported, reassessment of those who remain is carried out. It may be necessary to change a triage status based upon a reassessment of the patient.