First Responder Protocols
Santa Rosa County Florida
2018

Kim Landry, MD, FACEP, FAAEM
Medical Director
# FIRST RESPONDER PROTOCOLS – Table of Contents

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First Responder Protocols
Reviewed and approved May 2018
To: All First Responders

From: Kim Landry, MD, Medical Director

RE: 2018 First Responder Treatment Protocols

Enclosed are the treatment protocols for use by First Responders/FRO when dispatched to assist EMS on medical calls. These protocols will serve as guidelines to help first responders in their scene size up, assessment and treatment of patients prior to the arrival of the advanced life support ambulance. First Responders will perform only those procedures they are credentialed and/or have been trained to perform, i.e. blood glucose check, CPR, splinting, etc. Upon arrival of EMS, the First Responder(s) will relinquish care to the EMS personnel and assist the EMS service as requested/instructed by EMS personnel.

I wish to specifically emphasize the following:

1. **Hazards on scene** are a priority for your safety as well as for the patient’s. Look over the scene; pay particular attention for downed power lines, chemical spills, placards, fumes, etc. **STOP, LOOK, LISTEN AND SMELL BEFORE YOU ENTER THE SCENE!**

2. **Universal precautions** should be used at all times to protect yourself and others from infectious hazards. See Appendix A.

3. **Ammonia ampules** are NOT to be used by first responders because of a potential risk of causing harm to patients.

4. **Spinal Immobilization** – Recent literature has been published that raises the concern of possible harm from back boarding patients. Cervical collars, immobilization devices and backboards should be applied judiciously - If unable to immobilize patient, do not move prior to the arrival of EMS unless absolutely necessary (e.g., to protect from hazards or to gain access for resuscitation). The spine should be manually immobilized promptly before any movement is attempted.

5. **Suction**: Use Yankuer suction only in the oropharynx and only as deeply as you can visualize. Do not probe blindly. Oxygenate before and after suctioning. Suction no longer than 15 seconds at a time.

6. **Cancellation of Ambulance:**

   **DO NOT CANCEL AMBULANCE WITHOUT COMMUNICATING WITH EMS**

   A. **Incapacitated Patients**: Patients may NOT have the capacity to refuse treatment/transport if:

      (1) Level of consciousness is impaired, or is potentially impaired for any
reason (such as intoxication, potential head injury, confusion due to injury or illness, low blood sugar, low blood pressure, etc.)

OR

(2) Patient is a minor with no legal guardian present.

B. **Competent patients:** If obvious or potentially serious illness or injury exists, and patient is refusing treatment or transport, the EMS crew must evaluate the patient prior to any cancellation of the call.

C. Use a caring, tactful and non-threatening supportive approach. First Responders should not physically restrain combative patients as that may lead to further injury of the patient or injury to the provider. Law enforcement officers may help calm hostile patients and should be the ones to restrain any violent persons.

7. **In order to operate by these protocols, the first responder must meet these qualifications:**

A. Must have a current (successfully completed within the past two years) DOT-Curricula First Responder training. In order to meet this requirement, if it has been longer than two years since your First Responder training, you may refresh by taking the DOT-Curricula First Responder refresher course or by completing the initial First Responder training again.

B. Must maintain current CPR “for the professional rescuer” certification (American Heart or American Red Cross or American Safety and Health Institute are acceptable.)

C. In lieu of DOT-Curricula First Responder training, First Responder personnel may be certified/trained in one of the following areas in order to take part in aspects of patient care:
   1. Current Florida certification as an EMT,
   2. National registered EMT or EMT-P
   3. Current Florida certification as a Paramedic

D. **Other Medical Professionals:**

Individuals who are licensed as LPN, RN, PA, DO or MD in the State of Florida must successfully complete and maintain current DOT First Responder certification in order to participate in organized first response. Any exceptions to this requirement must be made by the Medical Director in writing. Any medical professionals who act beyond the scope of these First Responder protocols do so under their own risk with the understanding that they assume full liability for any advanced care they provide. Further, they are reminded that treatment beyond
these protocols may not be protected under Good Samaritan Laws.

E. In order to utilize AED, the First Responder must meet the following qualifications:

   (1) Be a member of a local organized first response agency (fire dept., EMS, industrial emergency team, etc.)
   (2) Must attend an AED class every two years AND complete a proficiency review every six months. OR, the First Responder may maintain current certification in Advance Cardiac Life Support (ACLS).
   (3) Must meet all the preceding qualifications to be a first responder.

F. In order to use the King Airway the first responder must: (1) Complete the training provided by an approved instructor with Lifeguard, and (2) be certified by the Medical Director. See Appendix B for procedure.

Kim Landry, MD, FACEP, FAAEM
Medical Director

Date Signed: 5/3/2018
01- GENERAL SUPPORTIVE CARE
Reviewed and approved: 2018

This outline for general supportive care is to be used in all the following protocols. Any exceptions or special considerations will be noted in that particular protocol.

ASSESSMENT

Assessment-Based Care
A typical patient assessment contains four major components (Figure 12.2):

- **Scene size-up.** The scene size-up is an overview of the scene to identify any obvious or potential hazards.

- **Primary assessment.** This is a quick assessment of the patient's airway, breathing, circulation, and bleeding undertaken to detect and correct any immediate life-threatening problems.

- **Secondary assessment.** The secondary assessment is a more thorough assessment of the patient and has two subcomponents:
  - **History.** This includes all the information that you can gather regarding the patient's condition as well as any previous medical history.
  - **Physical exam.** This includes using your hands and eyes to inspect the patient for any signs of illness and/or injury.

- **Reassessment.** Monitoring the patient to detect any changes in his condition, this component repeats the primary assessment (usually done en route to the hospital), corrects any additional life-threatening problems, repeats vital signs, and evaluates and adjusts as needed any interventions performed, such as repositioning the patient or increasing supplemental oxygen. You will find that the condition of your patient will improve, stay the same, or get worse.
I. **Scene size-up. STOP, LOOK, LISTEN AND SMELL BEFORE YOU ENTER THE SCENE!**
   A. Scene safety is your 1st concern
   B. Number of patients and need for additional resources
   C. Determine the patient’s chief complaint
   D. Lift, move, or reposition the patient only when it is necessary
   E. Protect patient privacy and maintain confidentiality
   F. Be the patient’s advocate

II. **BSI Precautions:** Universal precautions should be used to protect yourself and others from infectious hazards (Gloves and Eye protection at a minimum).
A. Synthetic gloves
   i. Put on your gloves before you make contact
   ii. Put on a 2nd pair of gloves around sharp objects, such as broken glass and metal edges at a collision scene.
   iii. Wash hands and change gloves between patients
B. Face shield or mask
   i. where surgical-type masks for blood or fluid splatter
   ii. For fine particles of airborne droplets (coughing), wear a high-efficiency particulate air (HEPA) or N-95 respirator. In addition, a surgical-type mask can be placed on the patient.
C. Eye protection: use eyewear that protects from both the front and sides
D. Gowns: protect your clothing and bare skin when there is spurting blood, childbirth, or multiple injuries with heavy bleeding.

III. Initial (Primary) Assessment:

A. Airway:
   a. If patient unconscious, observe for trauma and guard C-Spine and Airway.
B. Breathing:
   a. Have suction available and ready in case of vomiting.
   b. Carefully assess for adequate Airway and Breathing using “Look, Listen, and Feel.” IF NOT MAINTAINING AIRWAY OR ADEQUATE BREATHING, GO IMMEDIATELY TO TREATMENT BELOW.
C. Circulation:
   a. Carefully assess pulse and perfusion. IF NO PULSE, IMMEDIATELY CALL FOR AED AND BEGIN CPR.
D. Disability:
   a. Assess mental status
E. Expose/Examine
   a. Obtain Vital Signs, including pulse, respiratory rate, blood pressure, temperature (if applicable)
   b. Look for obvious injury or area of tenderness
   c. Abnormal skin color/temperature

DO NOT PROCEED TO SECONDARY ASSESSMENT UNTILL ALL LIFE-THREATENING PROBLEMS IDENTIFIED IN THE PRIMARY SURVEY HAVE BEEN ADDRESSED!!

IV. Secondary Assessment: including

A. Patient history. Information relating to the patient’s current complaint or condition, as well as information about past medical and surgical problems that could be related.
   1. Location
   2. Onset
   3. Precipitating events
   4. Quality
5. Radiation
6. Severity
7. Modifying factors
8. Associated Symptoms
9. Prior history of same/similar
10. S-A-M-P-L-E
   i. Signs and symptoms
   ii. Allergies
   iii. Medications
   iv. Past history
   v. Last oral intake
   vi. Events
   a. (If available, name of private physician)

B. Rapid secondary assessment: a quick, less detailed head-to-toe assessment of the most critical patient
C. Focused secondary assessment: this is conducted on the stable patients. It focuses on the specific injury or medical complaint
D. Vital signs: BP, Pulse, Respiratory rate, skin signs, pupils
E. Physical Exam: Look for;
   1. Signs: these are what you see, feel, hear, and smell as you examine the patient, such as cool, clammy skin or unequal pupils. These are “Objective” findings.
   2. Symptoms: These are reported by the patient, such as chest pain, dizziness, and nausea are felt by the patient. These are “Subjective” findings

<table>
<thead>
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<th>TRAUMA PATIENT</th>
<th>MEDICAL PATIENT</th>
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<td>Unresponsive Medical Patient</td>
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<tr>
<td>• Perform a rapid secondary assessment.</td>
<td>• Perform a rapid secondary assessment.</td>
</tr>
<tr>
<td>• Take vital signs.</td>
<td>• Gather a patient history.</td>
</tr>
<tr>
<td>• Gather patient history.</td>
<td>• Take vital signs.</td>
</tr>
<tr>
<td>No Significant Mechanism of Injury</td>
<td>Responsive Medical Patient</td>
</tr>
<tr>
<td>• Perform a focused secondary assessment.</td>
<td>• Perform focused secondary assessment.</td>
</tr>
<tr>
<td>• Take vital signs.</td>
<td>• Gather a patient history.</td>
</tr>
<tr>
<td>• Gather patient history.</td>
<td>• Take vital signs.</td>
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Secondary exam for trauma patients with significant MOI:
   1) Check the head for bleeding and deformities. Take care not to move the head. Check the face for pain, deformities, or discoloration. Check for symmetry of
facial muscles by asking the patient to smile or show his teeth. Look for any fluids that may be leaking from the ears, nose, or mouth.

2) Examine the patient’s eyes for signs of injury. Check the pupils for size, equality, and reaction to light. Observed the inner surface of the eyelids (conjunctiva). The tissue should be pink and moist. A pale color may indicate poor perfusion.

3) Inspect the ears and nose for drainage, either clear or bloody. Clear or bloody fluids in the ears or nose are strong indications of a skull fracture. Also inspect the nose for singed nostrils, which may indicate the inhalation of toxic smoke. Flaring nostrils may be a sign of respiratory distress.

4) Inspect the mouth for foreign material, bleeding, and tissue damage. Look for broken teeth, bridges, dentures, and crowns. Check for chewing gum, food, vomit, and foreign objects.

5) Check the neck front and back for pain and deformity. Look for any medical identification jewelry. Also notice if the patient has a stoma, or evidence of the tracheal deviation. Observed for jugular vein distention (JVD) and accessory muscle use.

6) Use both hands to inspect the chest front and sides for pain and deformities. If necessary, bare the chest. Gently apply pressure to all sides of the chest with your hands. Observation equal expansion of both sides of the chest. Note any portion that appears to be floating or moving in opposite directions to the rest of the chest; this is called paradoxical movement. It could indicate an injury called a flail chest in which 2 or more ribs or fracture in 2 or more places. When baring the chest of female patients, provide them with as much privacy as possible.

7) Inspect the abdomen for any signs or symptoms of trauma such as pain, deformities, distention, rigidity, and guarding. Gently press on each quadrant of the abdomen with the palm side of the fingers, noting any areas that are rigid, swollen, or painful. As you press on the area, ask the patient if it hurts more when you press down or when you let go.

8) Inspect the pelvis for pain and deformity. Note any obvious injury to the genital region. Look for witness caused by incontinence or bleeding an impaled objects. Do not expose the area unless you suspect there is an injury. In male patients, check for priapism, the persistent erection of the penis, which may be a sign of spinal cord injury.

9) Feel the lower back for pain and deformity. Take care not to move the patient. Gently slide your gloved hands into the area of the lower back that is formed by the curve of the spine. If possible, roll the patient to inspect the entire back of pain and deformity.
10) Examine each leg and foot individually. Compare one limb to the other in terms of length, shade, or deformity.

11) Check for distal circulation, sensation, and motor function. Check the dorsalis pedis pulse which is located on top of the foot just lateral to the large tendon of the big toe.

12) Examine the upper extremities from the shoulders to the fingertips. Examine each limb separately for pain and deformities.

13) Check for distal circulation, sensation, and motor function in each hand. Note any weakness, numbness, or tingling. Observed for evidence of track marks or medical identification jewelry

**Secondary exam for trauma patients with NO significant MOI:** instead of examining the patient from head to toe, focus your assessment on just the areas of the patient tells you or painful or that you suspect may be injured because of the mechanism of injury. The assessment includes a physical exam, vital signs, and a patient history.

**Secondary exam for the unresponsive medical patient:**

1) Same as the trauma patient with significant mechanism of injury

2) Specifically for medical problems, look for:
   a. Neck. Look for Mac vein distention and medical identification jewelry
   b. Chest. Check presence and the quality of breath sounds
   c. Abdomen. Assess for distention, firmness, or rigidity.
   d. Pelvis. Check for incontinence of urine or feces
   e. Extremities. Check circulation, sensation, motor function, and for a medical identification jewelry

**Secondary exam on the responsive medical patient:**

A. The most important assessment information is obtained through the patient history and the taking of vital signs.

B. Focus the exam on the body part that the patient has a complained about.

C. Use mnemonic **OPQRST**:
   1. **O** – Onset. What were you doing when symptoms started?
   2. **P** – Provocation. What makes the pain worse or better?
   3. **Q** - Quality. Can you describe how your pain feels?
   4. **R**- Region and radiation. “Point to where it hurts the worst”, does it radiate to any part of your body?
   5. **S**- Severity. “on a scale of 1 to 10, with 10 being the worst pain you have ever felt, how would you rate your pain right now?”
   6. **T**- Time. “When did you first begin having pain today?” or “how long have you had this pain?”
TREATMENT: Focus on ABC’s of the primary exam

I. **AIRWAY**: If patient is not maintaining adequate airway without assistance, open and maintain the airway using the following BLS techniques:

   A. Maintain C-spine stabilization.
   B. Utilize jaw thrust/chin lift maneuver.
   C. Utilize head tilt chin lift maneuver ONLY if other techniques fail to maintain adequate airway.
   D. Keep airway clear of obstructions (suction as needed).
   E. An *oral airway* may be utilized if airway is still inadequate. *(See Appendix: airway procedures)*
   F. A *nasal airway* may be utilized if airway is still inadequate or if oral airway is not tolerated or is contraindicated. *(See airway procedures).*
   G. **In respiratory arrest or cardiac arrest patients.** Use BVM with oral and/or nasal pharyngeal airway to assist ventilations. King Airway device may be used by certified EMT and trained FirstResponders. *(See Appendix B: airway procedures).*

II. **BREATHING**: Assist respirations as needed with bag-valve-mask in preparation for the arrival of the advanced life support ambulance:

   F. If patient is conscious and appears mildly short of breath: □ O2 *via nasal cannula* at *2 LPM.*
   G. If patient unconscious AND breathing: □ O2 *via non-rebreather mask* at *5 LPM.*
   H. If patient is conscious AND has ANY of: (1) moderate to severe respiratory distress, (2) significant facial burn, or (3) is a **trauma patient**. □ O2 *via non-rebreather mask* at *15 LPM.*
   I. If patient is breathing AND respirations are inadequate (less than 8 per minute), or if patient is cyanotic: □ assist ventilations with Bag-Valve-Mask device at *100% O2* using approved airway devices as above at rate 14 per minute.
   J. If patient is unconscious AND NOT breathing: □ provide ventilations with Bag-Valve-Mask *(100% O2)* at *14 per minute* with oral or nasal airway in place OR ventilate using bag and King Airway if approved.

III. **CIRCULATION**:

   A. Assess for adequate pulse and blood pressure. If no pulse:
      - Provide chest compressions as indicated by CPR algorithms
      - Do not delay or pause compressions.
   B. Identify any source of bleeding.
C. Control bleeding with direct pressure or pressure points.
   - If bleeding not completely controlled, notify EMS Dispatch immediately!
   - Apply Tourniquet: (CAT Tourniquet pg. 125)
     1. Should be applied ONLY if ALL other efforts have failed.
     2. Notify EMS Dispatch immediately if tourniquet is applied.
     3. Should remain visible (Never cover with dressings, sheets, etc.)
     4. Note time of tourniquet in ink on a piece of tape easily visible.
     5. Once applied, DO NOT release tourniquet.

IV. Keep patient warm and protected from the elements.
V. If not contraindicated by specific injuries, place patient in position of comfort.
VI. If seizing, protect patient from further injury.
VII. If unconscious, protect airway, assess blood glucose, monitor with AED (with monitor) if available.
VIII. If patient is obviously pregnant, place on left side whenever possible to permit better blood return to the mother’s heart.
IX. Pt. should NOT be given anything by mouth or be allowed to take any medication unless specifically indicated in the following protocols.

REPORT - Reporting information to the EMS crew:

I. **On critical patients**, if possible, give the following information to EMS while the crew is still en-route.

   Critical patients defined as: unconscious, severe respiratory distress, severe chest pain, amputation, burns, active seizures, complications of childbirth, penetrating injuries, unstable vital signs, cardiac arrest, life safety hazard to crew, any serious conflicts with dispatch information..

II. Report should be brief and concise with pertinent information only. **If patient and scene are stable**, wait until crew arrives to report the following information:

   A. Age/Sex./Name (if you know it)
   B. Chief complaint/problem (briefly).
   C. Brief, problem-focused physical exam.
   D. A brief patient status:
      (1) Level of consciousness (either LOC X 3 or AVPU may be used)
         Level of Consciousness x1 Person x2 Place x3 Time

         Alert
         Voice - responds to voice
**Pain** - responds only to pain

**Unresponsive**

(2) Respiratory status.
(3) Vitals: pulse, respirations, B/P, skin temperature: hot, cold, normal,
   (If pertinent)
(4) Any treatment you have rendered.
(5) Any concerns.

III. On unsafe scenes, give the following information to EMS prior to crew arrival, if possible.
   Note: **DO NOT** place yourself at risk. Leave the scene if it is not safe.
   A. Specific scene hazard:
      1) Hazardous materials (type and amount, if known)
      2) Violent or potentially violent scenes (Be aware of your own safety!)
   B. Patient’s status as listed above (If you have been able to make patient contact)

**DOCUMENTATION**

I. The standard Fire Department or First Responder Treatment Form will be completed for all patients and a copy given to ALS Responders unless patient or scene conditions prevent immediate completion. If not completed on scene, the form MUST be completed and faxed to the EMS agency for attachment to the EMS patient care report.

II. Documentation will be reviewed by a Quality Assurance Team.
ASSESSMENT:
   A. Generalized Abdominal pain causes:
      1. Bleeding
      2. Infection
      3. Ulcers
      4. Indigestion
      5. Constipation
      6. Food poisoning
      7. Menstrual cramps
      8. Diabetic emergencies
      9. Kidney stones
     10. Gallstones
     11. Appendicitis
     12. Ectopic pregnancy
   B. Signs and symptoms of acute abdominal pain:
      1. Pain can be sharp, dull, localized or generalized
      2. Pain on palpation
      3. Rigid or tight abdomen
      4. Bloating or distention
      5. Nausea/vomiting
      6. Cramping
      7. Pain that radiates to other areas
      8. Guarding (protecting the abdomen)
      9. Vomiting bright red blood or coffee ground looking emesis
     10. Bright red blood in stool or dark tarry looking
   C. Assessing the patient with acute abdominal pain
      1. Take a good history
      2. When did the pain begin?
      3. Can you point with one finger where the pain is most?
      4. Did you experience any injury or trauma?
      5. When did you last eat or drink? What did you eat or drink?
      6. Are you experiencing nausea or vomiting?
      7. Does anything make the pain better or worse?
      8. Is there any chance you could be pregnant?
      9. When was you last menstrual period?
     10. Has there been any blood in your vomit or stool?
   D. Abdominal Injuries
      1. Signs and symptoms
         A. Deep cut or puncture wound to the abdomen, pelvis, or lower back
         B. Indications of blunt trauma to the abdomen or pelvic region
         C. Guarding (protecting the abdomen)
         D. Lying still with legs drawn up
E. Rapid, shallow breathing and a rapid pulse
F. Rigid, distended, and/or tender abdomen
G. Types:
   1) Eviscerations
   2) Contusions
   3) Penetrating injuries

E. Examination:
   1. Expose the abdomen and observe the skin color and condition. Observe for signs of injury such as bruising (seat belt),
   2. Palpate all four quadrants of the abdomen to determine the exact location of the pain. Note any area of tenderness (patient will tense up muscles over areas that hurt when you push)

TREATMENT:
A. Proper BSI precautions
B. Assure ABCs first
C. If there is no contra-indication, allow the patient to position themselves in position of comfort
D. If abdominal evisceration:
   1) Expose the wound and any organ that may have spilled out.
   2) Position the patient on his/her back. If no spinal injury is suspected, have the patient bend his knees. This will put less tension on the abdominal muscles.
   3) Open a large sterile trauma dressing and soak with sterile water or saline.
   4) Place the moist dressing over the spilled contents. Do your best to contain as much of the contents under the dressing as possible.
   5) Cover the moist dressing with plastic. This will help contain the moisture and keep the exposed tissue from drying out.
   6) Provide high flow oxygen
   7) Care for shock and initiate transport as soon as possible.
REPORT:

A. Is there any trauma involved?
B. Location of the pain (which quadrant)?
C. Any obvious injuries, open wounds, or evisceration?
D. Is patient on oxygen
E. What are the current vital signs?
F. Any dressings applied?
03- Altered Mental Status
Reviewed and approved: 2018

ASSESSMENT:
A. Take appropriate BSI
B. Perform primary Survey (See Protocol 01 – General Supportive Care, pg. 7, Focus on ABCs.)
C. Perform secondary survey, including patient history and physical exam
D. Complete appropriate reassessments
E. Comfort and reassure patient while waiting on EMS
F. Possible causes of altered mental status include:
a. Seizures 
b. Stroke 
c. Diabetic emergencies 
d. Poisonings and overdose 
e. Hypoxia 
f. Shock 
g. Infection 
h. Trauma 
i. Psychiatric condition 
j. Liver failure
G. Signs and Symptoms:
a. Confusion 
b. Seizures 
c. Inappropriate behavior (verbal, physical) 
d. Combativeness 
e. Syncope (collapse or fainting) 
f. Unresponsiveness
H. Assess for signs of a stroke:
a. Facial droop: have the patient look at you and smile. Observe if the facial muscles do not move symmetrically or if there is facial droop on one side 
b. Arm drift: Have the patient hold both arms straight out in front of him/her and close their eyes. Observe for arm drift, one arm drops down while the other remains up. 
c. Abnormal speech: Observe for slurred speech, inappropriate words, or inability to respond verbally.

TREATMENT:
A. Monitor the patient’s airway and breathing 
a. Have suction handy if needed to clear oral cavity 
b. Be prepared to position patient in recovery position to facility drainage of secretions/vomit. 
c. Be prepared to assist with patient’s ventilations if needed: oral or nasal pharyngeal airway, assist with BVM as needed, suction, etc.
B. Monitor vital signs
C. If patient or fire department has a glucometer, measure the patient’s blood sugar
D. Provide emotional support
E. Position the patient properly for comfort and protection
F. Do not administer anything by mouth, especially if there is a significant altered mental status, rather wait for EMS. If patient is only slightly confused but otherwise can sit up, swallow, and assist with taking oral glucose for glucose levels less than 60 mg/dl.

REPORT:
A. If patient is conscious or unconscious
B. If airway is compromised and assistance is being provided
C. If blood sugar was checked and if so, what was the reading?
D. Is patient seizing or not
E. Is there any evidence of a stroke and if so, what time did the symptoms start or when was the last time the patient was seen normal?
ASSESSMENT
A. ABC’s. (See 01- General Supportive Care Protocol, pg. 7)

B. Amputation above the ankle or wrist is considered a trauma alert. NOTIFY EMS.

TREATMENT
A. Control bleeding with direct pressure to the wound or pressure over nearest arterial pressure point. Apply tourniquet only if all other efforts fail (EMS Dispatch must be notified immediately.) See pg. 125 – Tourniquet Application.

B. Oxygen via nasal cannula @ 2LPM. IF major amputation (whole leg or arm) may consider non-rebreather mask at 15 LPM.

C. Keep patient warm, protected from the elements, elevate involved extremity.

D. Care of Amputated Part:

1. PRIMARY CONCERN SHOULD BE TREATMENT OF THE PATIENT, NOT RECOVERY OF AMPUTATED PARTS.
2. Do not rinse the amputated part.
3. Wrap amputated part in gauze moistened with saline solution.
4. Place in sealable bag (zip lock), then place bag inside container filled with water and several ice cubes or cold packs. Do not immerse amputated part. Label with name, date, and time. Do not allow tissue to freeze or come in contact with ice.

E. For partial amputations: If amputation is incomplete, splint in place, control bleeding, and elevate the extremity. Never complete a partial amputation.

REPORT
A. Report per 01- General Supportive Care Protocol, pg. 7.

B. Include the following information:

1. If amputation is complete or not.
2. Site of amputation
05- ANAPHYLAXIS/ALLERGIC REACTIONS
Reviewed and approved: 2018

ASSESSMENT

A. Assure ABC’s. (See 01 - General Supportive Care Protocol, pg. 7).
B. Pay particular attention to any evidence of airway edema.
   1. Lips or tongue swelling.
   2. Hoarseness or wheezing.
   3. Notify EMS Dispatch if patient has any of these findings
C. Signs and Symptoms:
   (1) Burning, itching, or breaking out of the skin (hives)
   (2) Breathing that is difficult and rapid
   (3) Altered mental status, fainting or unresponsiveness
   (4) Pulse that is rapid and weak
   (5) Cyanosis of the lips and nail beds
   (6) Swelling of the tongue and throat
   (7) Restlessness

TREATMENT

A. Take appropriate BSI precautions and perform a primary assessment.
B. Ensure a clear airway and adequate breathing
C. Oxygen via non-rebreather mask (15 LPM) as outlined in General Supportive Care Protocol.
D. If blood pressure normal: Advise EMS the patient is stable.
E. If hypotensive (systolic blood pressure <80) and patient has mild-moderate respiratory distress, elevate legs and advise EMS of critical patient.
F. Keep patient calm and place in position of comfort
G. If patient has prescribed medication (i.e. EPI pen, and/or inhaler) for allergic reaction, the first responder may assist administering the medication to the patient.
   a. For auto-injector Epinephrine
      i. Obtain patient’s prescribed auto-injector. Ensure the Rx is written for the patient having the allergic reaction.
      ii. Make sure medication is not expired or discolored
      iii. Remove cap from auto injector
      iv. Place tip of auto-injector against patient’s lateral thigh, midway between the hip and knee. (DO NOT PUT YOUR FINGER OVER THE TIP OF THE AUTO-INJECTOR. USE CAUTION NOT TO AUTO-INJECT YOURSELF WHILE HANDLING THE AUTO INJECTOR).
      v. Push the injector firmly against the thigh until the injector activates
      vi. Hold the injector in place until the medication is injected (at least 10
seconds)
vii. Record activity and time
viii. Dispose of the injector in a biohazard container.

REPORT

A. Report as previously stated in General Supportive Care Protocol

B. Include the following:

1. If reaction from bite, what bit patient.
2. If reaction from medication/other, what medication and container.
3. If reaction is generalized or local.
4. If symptoms are present.
5. Swelling of the face or airway, difficulty breathing wheezing or rash (hives).
6. If any medications were administered.
06- AUTOMATED EXTERNAL DEFIBRILLATION
Reviewed and approved: 2018

BACKGROUND:

The AED is designed to be used only on patients with no pulse who are suspected of being in full cardiac arrest. It will only allow you to shock certain cardiac dysrhythmias, but may not accurately interpret the condition if the patient has a pulse or spontaneous breathing. Therefore, the AED and “ANALYZE” mode should ONLY be used on unconscious patients with no pulse or breathing. If your AED has monitoring capabilities, the electrodes may be placed on the chest of a patient complaining of chest pain or who is unconscious, but only for the purposes of cardiac monitoring by a properly trained and experienced provider. Do not press the “ANALYZE” button or “CHARGE” or “SHOCK” on a conscious patient with AED being used for cardiac monitoring. NEVER shock a patient who is conscious, breathing, or has a pulse even if the machine advises “shock”. IMPORTANT: Even if your AED model has not been updated with the new 2010 ACLS protocols, ALWAYS follow the voice prompts on your particular unit (DO NOT turn unit off-and-on). It is recommended that you update your AED as soon as possible.

ASSESSMENT:

1. Establish unresponsiveness. Shake gently, shout, and stimulate.
2. If patient is a child less than 8 years old or less than 55 lbs., see below.
3. ABC’s per General Supportive Care Protocol, Pg.7.
4. If no pulse, **Notify EMS Dispatch immediately.**
5. Initiate CPR per protocol but **DO NOT DELAY placement of AED if the collapse is witnessed and AED is readily available.** In witnessed sudden cardiac arrest, the use of AED has priority over all other treatment.
6. Obtain as much history of the event as possible (Including circumstances, down time, patient history, bystander CPR prior to arrival, etc.).
7. Scene safety.

TREATMENT:

1. ABC’s per 01 - General Supportive Care Protocol, Pg 7.
2. CPR (with C-spine precautions when indicated) per AHA/Red Cross/ASHI algorithm.
3. Insure scene safety.
   -free of metallic objects, combustibles, pools of water.
   -safe for rescuers.
   -dry off the patient

WITNESSED COLLAPSE

1. Immediately open AED pads and place the appropriate size Adult or Pediatric pads on patient’s chest as shown in diagram.
2. Turn on AED.
3. Analyze rhythm.
- If shock advised: make sure patient is “clear” and rescuers are “clear” and deliver shock.
- If shock NOT advised: reassess patient and perform CPR as indicated per AHA/Red Cross/ASHI protocols
4. Follow voice prompts or instructions on screen.
5. Deliver one shock and Continue CPR for 5 cycles of 30-2.
6. Reassess condition of patient.
7. Continue CPR if still no pulse.– Don’t stop CPR for more than 20 sec. at a time.
8. Stop CPR to re-analyze rhythm and check pulse every 2-3 min.
    - Continue CPR as needed between defibrillation attempts.
9. Successful defibrillation will be indicated by return of a pulse.
    - Patients generally do not start breathing or wake up immediately but rarely, they might. However, do not expect patients to sit-up and thank you.
    - If patient has return of pulse, document time and number of shocks.
10. Provide 100 % oxygen and ventilation continuously via Bag-Valve-Mask but remember to remove the BVM during defibrillation.
11. If there is ever ANY doubt that the AED is working properly, turn it OFF and continue CPR without it.

UNWITNESSED COLLAPSE

1. Give about 5 cycles of CPR before using AED.
2. Turn on AED.
3. Analyze rhythm.
    - If shock advised: make sure patient is “clear” and rescuers are “clear” and deliver shock.
    - If shock NOT advised: reassess patient and perform CPR as indicated per AHA/Red Cross/ASHI protocols
4. Follow voice prompts or instructions on screen.
5. Deliver one shock and Continue CPR for 5 cycles of 30-2.
6. Reassess condition of patient.
7. Continue CPR if still pulseless.
    - Don’t stop CPR for more than 20 sec. at a time.
8. Stop CPR to re-analyze rhythm and check pulse every 1-3 min.
    - Continue CPR as needed between defibrillation attempts.
9. Successful defibrillation will be indicated by return of a pulse.
    - Patients generally do not start breathing or wake up immediately but rarely, they might. However, do not expect patients to sit-up and thank you.
    - If patient has return of pulse, document time and number of shocks.
10. Provide 100 % oxygen and ventilation continuously via Bag-Valve-Mask but remember to remove the BVM during defibrillation.
11. If there is ever ANY doubt that the AED is working properly, turn it OFF and continue CPR.

SPECIAL CONSIDERATIONS

1. **PEDIATRIC PATIENTS**: Defined as 8 y/o or less than 55 lbs.
a. The standard AED comes equipped only with adult pads.
b. Several new models of AED can be equipped with pediatric pads that must be purchased separately.
   - Pediatric pads are smaller, to fit any age child
   - Pediatric pads have a built in attenuator that steps down the amount of energy (joules) delivered in the shocks.
c. If no Pediatric pads are available Adult pads can be utilized on a child or infant. If pads overlap or come within 1 inch of touching use the anterior/posterior placement procedure.

2. PEDIATRIC AED PROTOCOL

   a. ASSESSMENT

      - Determine age less than 8 and wt. less than 55 lbs.
      - Otherwise same as adult.

   b. TREATMENT

      - ABC’s per 01 - General Supportive Care Protocol, pg.7.
      - Start CPR
      - Open AED, unplug adult pads from the AED unit, and plug in the pediatric pads (if available, if not utilize adult pads)
      - Place pads on child/infant chest as shown on the diagram.
      - AED functions the same as with adult patients.
      - Protocol otherwise the same as adults.

REPORT:

1. per 01 - General Supportive Care Protocol, pg. 7
2. Provide detailed history of down time, number of shocks, and results of therapy
07- Behavioral Emergencies
Reviewed and approved: 2018

ASSESSMENT:

A. Approach with caution and observe for signs of agitation or violence. Do not approach the patient if it is not safe!
B. Identify yourself and let the patient know you are there to help.
C. Inform the patient of what you were doing at all times.
D. Ask questions in a calm, reassuring voice.
E. Without being judgmental, allow the patient to tell what happened.
F. Show that you are listening by rephrasing or repeating part of what is said.
G. Be aware of your posture and body language and the message it may be sending to the patient.
H. Assess the patient’s mental status: appearance, activity, speech, and orientation to person, place, time, and event.
I. Always consider the need for law enforcement.

TREATMENT:

A. Perform a scene size up and consider the need for law enforcement.
B. Perform a primary assessment by observing the patient from a safe distance.
C. Acknowledge that the patient seems upset and restate that you are here to help.
D. Inform the patient of what you’re doing.
E. Ask questions in a calm, reassuring voice.
F. Encourage the patient to state what is troubling him/her.
G. Do not make quick moves.
H. Answer questions honestly.
I. Do not threaten, challenge, or argue with disturbed patients.
J. Do not “play along” with hallucinations or auditory disturbances.
K. Involve trusted family members or friends, if appropriate.
L. Be prepared for an extended scene time.
M. Avoid unnecessary physical contact.
N. Leave yourself a way out. Never let the potentially violent patient come between you and your exit.
O. If situation escalates and the patient becomes potentially violent, retreat to a safe location and wait for law enforcement to arrive on scene. Patient may need to be physically and or chemically restrained.
P. Notify EMS as soon as possible if law enforcement arrives on scene and proceeds to restrain patient in a hogged-tied (arms and legs tied behind patient’s back while face down) fashion as the risk for asphyxiation (stop breathing) is high.

REPORT:

A. Is patient continuing to present in a threatening manner?
B. Is law enforcement on scene or needed on scene?
C. Is the safety of bystanders/family being threatened?
D. If you are staging for law enforcement and if EMS needs to stage for law enforcement.
08 - Bleeding and Soft Tissue Injuries
Reviewed and approved: 2018

ASSESSMENT:
A. BSI precautions
B. Assess severity of blood loss based on patient’s signs and symptoms and an estimation of visible blood loss. If signs and symptoms of shock are present, bleeding should be considered serious.
C. Type of bleeding: Arterial, Venous, or Capillary?
   a. Arterial: spurting with each heartbeat. Color is bright red
   b. Venous: Steady flow of dark red blood
   c. Capillary: tiny blood vessels, slow oozing of bright red blood from tissue. Common with scrapes and abrasions.

TREATMENT: for BLEEDING

A. Direct Pressure:
   a. Place you gloved hand(s) directly over the wound and apply pressure
   b. Keep applying steady, firm pressure
   c. If dressing is immediately available:
i. Apply firm pressure using clean dressing or a clean cloth.

ii. Apply pressure until bleeding is controlled. In some cases this may take several minutes. RESIST the temptation to remove pressure repeatedly to determine if the bleeding has stopped. Assume it has stopped when you do not see bleeding through or around the dressing and bandage.

iii. Secure the dressing in place with a bandage to create a pressure bandage.

iv. Never remove or attempt to replace any dressing that is applied directly to the wound. To do so may interrupt clot formation and restart bleeding. If an outer dressing becomes soaked with blood, replace it with another dressing. Make sure you do not disturb the dressing that is immediately against the wound.

   d. The application of a pressure dressing:
      i. Place several layers of clean dressings directly on the wound. Maintain pressure with your gloved hand.
      ii. Use a roller bandage or cravat (folded triangular bandages) to secure the dressings in place. It should be wrapped firmly above the dressing and above and below the wound.
      iii. Wrap the bandage to produce enough pressure to control the bleeding.
      iv. Check for distal pulses to be certain that the pressure has not restricted circulation beyond the wound.

B. Elevation: may be used in combination with direct pressure when dealing with bleeding from an arm or leg. Do not elevate if you suspect fractures to the extremities or a possible spine injury.

   a. While maintaining direct pressure over the wound, elevate the injured extremity. When practical, raise it so that the wound is above the level of art.
   b. Continue to apply direct pressure to the site of bleeding
   c. Provide care for shock. Calm and reassure the patient, maintain normal body temperature, and administer oxygen as per general patient assessment protocol.

C. Tourniquet

   a. If bleeding persist despite direct pressure and elevation, apply tourniquet per Tourniquet Protocol, pg. 125.

D. The following rules apply to dressing a wound:

   a. a dressing and bandage or a little value if they do not help control bleeding. Continue to apply dressing material and pressure as needed to control bleeding.
   b. Use sterile or clean materials. Avoid touching dressings in the area that will come into contact with the wound.
c. Cover the entire surface of the wound and, if possible, the immediate area surrounding the wound.
d. Once a dressing is applied to the wound, it must remain in place. Add new dressing on top of blood-soaked dressings. When a dressing is removed from a wound, bleeding may restart or increase in rate.

E. The following rules apply to bandaging:
   a. Do not bandage too tightly. It should hold the dressing snuggly in place but not restrict blood flow to the distal extremity.
   b. Do not bandage too loosely. The dressing must not be allowed to slip from the wound or move while on the wound.
   c. Do not leave loose ends. Loose ends of tape, dressing, or cloth might get caught on objects when the patient is being moved.
   d. Do not cover the fingers and toes unless they are injured. These areas must be left exposed for you to watch for color changes that indicate a change in circulation. Blue skin, pale skin, and complaints of numbness, pain and tingling sensations all indicate that the bandage may be too tight.
   e. Wrap the bandage around the limb starting at its far (distal) end and working toward its origin or near (proximal) end. Taking such action will help reduce the chances of restricting circulation.
   f. Always check distal circulation, sensation, and motor function before and after bandaging.

OPEN WOUNDS:
   Abrasions
   Lacerations
   Punctures
   Avulsions
   Amputations
   Crush Injuries

TREATMENT:
   A. Expose the wound. Cut away clothing over and around an open wound.
   B. Remove superficial foreign matter from the surface of the wound with a sterile gauze pad.
   C. Control bleeding with direct pressure and elevation (see above). Do not elevate a limb if there is the possibility of a fracture. A tourniquet should be used if direct pressure and elevation do not control the bleeding. Administer oxygen and per general supportive care protocol.
   D. Prevent further contamination by using a sterile dressing or clean cloth to cover the wound. After the bleeding has been controlled, bandage the dressing in place.
E. Keep the patient lying still, as any activity will increase circulation. Keep the patient lying flat, using a blanket or other form of covering to provide protection from the elements.

F. Reassure the patient. This will reduce patient movement and may help lower the patient’s blood pressure toward a normal level.

G. Care for shock. This applies to all but the simplest of wounds.

H. When cutting away clothing to expose an open wound, avoid cutting directly through holes made by knives or bullets. They may serve as valuable evidence if the patient is a crime victim.

I. For Avulsions:
   a. Gently fold the skin back to its normal position prior to applying direct pressure.

J. For Protruding organs:
   a. Do not try to push protruding organs back into the body cavity.
   b. Place a plastic covering over the exposed organs. If possible, apply a thick dressing over the top of this covering to help conserve heat.
   c. Provide care for shock. Do not give the patient anything by mouth.

K. For Scalp Injuries:
   a. Control bleeding with a dressing held in place with gentle pressure. Avoid exerting excessive pressure in the event there is an associated skull fracture.
   b. A roller bandage or gauze can be wrapped around the patient’s head to hold dressings in place once bleeding is controlled. If suspected neck or spine injurr, use caution to keep the patient’s head immobilized when applying the bandage.
   c. If there is no signs of skull fracture or injuries to the spine, neck or chest, you may position the patient so that the head and shoulders are elevated.

L. For Facial Wounds:
   a. Ensure an open and clear airway. Being careful to note and properly care for neck and spine injuries
   b. Control bleeding by direct pressure, being careful not to press too hard because many facial fractures are not obvious
   c. Apply a dressing and bandage.
   d. If object penetrated the cheek:
      i. Look into the mouth to see if the object has passed through the cheek wall.
      ii. If penetration, carefully pull or push the object out of the cheek wall, back in the direction from which the object entered. If the
object cannot be easily removed, stabilize it with dressings applied to the outer surface of the cheek.

iii. If you removed the object, place a dressing material between the wound and the patient’s teeth, leaving some of the dressing outside the mouth so it can be held to prevent swallowing it. Watch closely to be sure that the dressing does not work its way loose and into the airway.

iv. Position the patient so that blood will drain from the mouth. Use dressing material packed against the inside wound to control the flow of blood. If bleeding is difficult to control and you suspect neck or spine injuries, roll the patient while maintaining manual stabilization of the head and neck.

v. Dress and bandage the outside of the wound.

vi. Provide care for shock.

M. For **Open Neck Injuries**:

a. Immediately apply direct pressure to the wound, using the palm of your gloved hand.

b. Apply an occlusive dressing or some type of plastic over the wound. Use tape to seal this dressing on all sides. This will minimize the possibility that air can be drawn into the wound, causing an air embolism.

c. Care for shock and provide

Alternative method for securing a dressing to the neck is as follows.

d. Place a roll of gauze dressing or dressing materials over the occlusive dressing and continue to apply pressure.

e. While maintaining pressure, secure the entire dressing with a figure-eight wrap of roller bandage. This eliminates the problem of trying to make adhesive tape stick to a bloody surface.

f. Place the patient on his/her left side for transport, with the body slightly slanted in a head-down position.

g. Care for shock and provide oxygen if allowed.
Alternative to applying a dressing to an open wound on the neck
09. BURNS AND SMOKE INHALATION
Reviewed and approved: 2018

ASSESSMENT

A. Scene size up. Rescuer safety.

B. Stop the burning process.

C. Initial Assessment and treatment of life threatening events:

   (1) ABC’s
   (2) Determine type and location of burns.
   (3) Look for burns in or near mouth, nose, throat or airway.
   (4) Look for soot on tongue.
   (5) Look for singed nasal airs or soot in nose.

D. Determine type and location of burns:

   (1) Superficial (skin red, sunburn)
   (2) Partial Thickness (Blisters)
   (3) Full Thickness (skin charred, white and/or black)

If patient has partial thickness or full thickness burns of 15% or greater Body Surface Area (see chart below, rule of 9s), notify EMS immediately. IF PATIENT MEETS TRAUMA ALERT CRITERIA NOTIFY EMS IMMEDIATELY.

TREATMENT - Immediate Treatment

A. Remove patient from smoldering clothes, unless it has melted to the skin. Remove any constricting jewelry. (If jewelry removed have witnessed, document quantity and disposition.)

B. Maintain body warmth in the patient with extensive burns. Cover burned area with a sterile sheet, if possible.

   1. Tar: Cool tar with water or saline (do not attempt to remove tar)

   2. Chemical:
      i. Brush off dry chemicals unless otherwise indicated by information obtained.
      ii. Flush with copious amounts of water or normal saline. (Do not try to “neutralize” any suspected chemical exposure by using anything but water.)

   3. Electrical: Note any secondary fractures and exit wounds caused by current.
C. Cool by flushing with sterile water if area of the burn is smaller than the palm of the patient’s hand (area of patient’s palm = 1% of Body Surface Area). In larger burns, do not flush with water.

D. Oxygen via non-rebreather mask at 15 LPM if:
   1. Respirations labored, short of breath or coughing.
   2. Exposed to smoke for lengthy period of time
      Note: Via Bag-Valve-Mask device with 100% O2 if respirations inadequate
   3. If significant partial thickness or full thickness burn.

E. Reassess vitals every 3-5 minutes.

F. Perform detailed physical exam

G. When treating a patient with large surface area burns, prevent heat loss by covering with clean, dry blankets or sheets.

REPORT

A. As indicated in 01 - General Supportive Care Protocol, pg. 7.

B. Include the following additional information:
   - Age of patient
   - Location and degree of burns.
   - Was the patient in an enclosed space during the fire?
   - Did patient experience loss of consciousness during event?
Rule of nine for determining the percent body surface area burned
CARDIAC ARREST
Reviewed and approved: 2018

ASSESSMENT

A. Assess ABC’s with C-Spine protection.

B. **Notify EMS immediately** that patient is in cardiac arrest. Do not delay CPR.

D. Observe for signs of obvious death: (If these are present, **notify EMS immediately**.)
   1. R rigidity in extremities
   2. Pooling of blood in dependent areas (such as legs or back)
   3. Decapitation or massive head trauma
   4. Decomposition
   5. Massive, life-ending trauma

E. Determine physical status of the patient:
   1. Pupillary reaction.
   2. Skin temperature

F. Start CPR immediately while second responder obtains the following information:
   1. How long has the patient been unresponsive?
   2. When patient was last seen by family or others?
   3. Was arrest witnessed?
   4. Was adequate bystander CPR begun immediately?

TREATMENT

A. Begin CPR immediately with 30 compressions. High Quality CPR @ 100/min. Minimize interruptions. Follow up compressions with 2 breaths. Repeat 30:2 cycle.

B. Oxygenate the patient with 100% O2 via Bag-Valve-Mask device with C-spine precautions if indicated. If no gag reflex, insert an oral pharyngeal or nasal pharyngeal airway. Have suction available and suction oral cavity as needed.

C. If you and your department are authorized by the Medical Director to perform Automated External Defibrillation, proceed to the AED Protocol, pg.24.

D. Check pulses with - and without – CPR. -consider AUTO PULSE or LUCAS II if available (Appendix I)
E. Rotate positions every two minutes so one person is not overworked and continuously reassess patient.

F. Continue CPR except for pulse checks and defibrillation per AED protocol. Never pause compressions for more than 20 sec.

G. Notify EMS immediately on return of spontaneous circulation and reassess for adequate pulses and BP.

   (1) Continue 100% O2 via BVM if not breathing
   (2) Continue 100% O2 via NRB mask and support airway if spontaneous breathing returns.

SPECIAL CONSIDERATIONS

A. If family offers information regarding a current “Do Not Resuscitate (DNR) or No Code Orders”, obtain the written order on a state approved form and notify EMS. Advise dispatch ASAP if it is not current. Do not discontinue CPR without first informing EMS and obtaining their permission to do so.

   (1) If there is any doubt in your mind whether or not to resuscitate, begin resuscitation and contact EMS.

B. Observe the scene’s integrity for possible crime-scene investigation. Do not move or touch anything unless it is absolutely necessary to do so. If you must do so, make a mental note to tell the police.

REPORT

A. Provide history and further information to EMS Crew on their arrival.

B. Be prepared to report:

   (1) Down time
   (2) Treatment provided (including defibrillation attempts)

EXPECTED ORDERS

A. Continue CPR.
### Table 10.1 | Summary of CPR Techniques

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Adult</th>
<th>Child</th>
<th>Infant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compressions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>Heels of two hands</td>
<td>Heel of one or two hands</td>
<td>Two fingers or two thumbs with hands encircling chest</td>
</tr>
<tr>
<td>Depth</td>
<td>At least 2 inches (6 cm)</td>
<td>1/3 the diameter of the chest, or about 2 inches (5 cm)</td>
<td>1/3 the diameter of the chest, or about 1 1/2 inches (4 cm)</td>
</tr>
<tr>
<td>Rate</td>
<td>At least 100/minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ventilations (patient with a pulse)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>Barrier device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate</td>
<td>One breath every 5 to 6 seconds</td>
<td>One breath every 3 to 5 seconds</td>
<td>One breath every 3 to 5 seconds</td>
</tr>
<tr>
<td><strong>Ratio of Compressions to Breaths</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One rescuer</td>
<td>30:2</td>
<td>30:2</td>
<td>30:2</td>
</tr>
<tr>
<td>Two rescuers</td>
<td>30:2</td>
<td>15:2</td>
<td>15:2</td>
</tr>
<tr>
<td><strong>Counts</strong></td>
<td>1, 2, 3, 4, 5... 30 and breathe, breathe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**One Rescuer CPR**

10.2.1 | Establish unresponsiveness and activate EMS. Position the patient and yourself.

10.2.2 | Look for signs of breathing. If not breathing or only gasping call 911 and check for a pulse.

10.2.3 | Check for a pulse for at least 5 seconds but no more than 10 seconds.

10.2.4 | If no pulse, begin chest compressions.

10.2.5 | Provide 30 compressions at a depth of two inches and a rate of at least 100 per minute.

10.2.6 | After 30 compressions, open the airway and provide two ventilations. Each breath should be delivered over one second. Look for chest rise and fall.
10.3.1 | The first rescuer positions the patient, determines unresponsiveness, and looks for signs of breathing.

10.3.2 | If there are no signs of breathing, send someone to call 911 and get an AED. Then assess for a pulse for no more than 10 seconds.

10.3.3 | If no pulse, the second rescuer locates the compression site and begins compressions. Deliver 30 compressions at a rate of at least 100 per minute.

10.3.4 | After each set of 30 compressions the first rescuer provides two slow breaths. The second rescuer should pause compressions to allow for adequate ventilations.
10 - CERVICAL/SPINAL INJURY
Reviewed and approved: 2018

ASSESSMENT

A. ABC’s with C-Spine protection (see General Supportive Care Protocol)

B. Signs and symptoms of suspected spinal injury
   (1) pain over the spine
   (2) deformity over the spine
   (3) numbness, weakness, or tingling in the extremities
   (4) loss of sensation
   (5) paralysis
   (6) incontinence (bladder or bowel)
   (7) priapism (erection of the penis)

C. Secondary survey with documentation of level of sensation.
• Ask patient “does your arms or legs feel numb”?
• Can the patient feel you touch his hands and feet?
• Can the patient squeeze your hand or push your hand with his foot?
D. Carefully assess patient for other injuries. Keep in mind; pt. may have other serious injuries that they don’t feel due to spinal cord damage.
E. See Spinal Immobilization Decision Flowchart below to determine if patient will require spinal motion restriction. If in doubt, maintain manual c-spine immobilization until EMS arrival.

F. **NOTIFY DISPATCH OF POSSIBLE SPINAL CORD INJURY.**

**TREATMENT**

A. Primary survey to ensure ABC’s
   a. Assist respirations if necessary (per 01- General Supportive Care, pg. 7 and Appendix B; Airway Procedures [pg. 136]. (Breathing muscles may be paralyzed from injury.)
   b. Carefully maintain c-spine immobilization.
   c. If you must manage the airway, attempt the jaw thrust maneuver 1st before the head tilt/chin lift maneuver.

B. Treat other injuries per protocol.
   a. Attempt to control serious bleeding. Avoid moving the injured part of the patient and any of limbs when applying dressings.
   b. Do not attempt to splint long bone injuries if they are indications of spinal injuries until you have appropriate help.
   c. Never move a patient with suspected spinal injuries unless you must do so to provide CPR or assist ventilations, need to reach and control life-threatening bleeding, or must protect yourself and the patient from immediate danger at the scene.

C. Apply proper immobilization with proper equipment as described below (see fig 20.5). Immobilize in position found, if possible. (For example: DO NOT straighten out the neck to apply C-collars.)
   a. Those with altered mental status and those will appear intoxicated or not able to reliably report pain. Any injured person who appears intoxicated, has an altered mental status, or is found unresponsive with a significant mechanism of injury should be cared for as though they have a spinal injury.

D. Manual stabilization of the head and neck of the **supine person**
   a. Kneel at the top or side of the injured person’s head
   b. Introduce yourself and explain to the person what you are going to do.
   c. Grasp the person’s head by placing your hand on each side of the head, and hold firmly.
   d. Instruct the person to remain still and provide reassurance
   e. Monitor the ABCs by talking to the person and listening to how they respond.

E. Manual stabilization of the head and neck of a **seated person**
   a. Stand or sit directly behind the injured person
   b. Introduce yourself and explain to the person what you are going to do.
c. Grasp the person’s head by placing your hands on each side of the head, and hold firmly.
d. Instruct the person to remain still and provide reassurance.
e. Monitor the ABCs by talking to the person and listening to how they respond.

F. Reassess sensation to touch and document level.

G. Reassess vital signs **every 5 - 10 minutes.**

**REPORT** - Report to EMS Crew

A. As indicated in 01 - General Supportive Care Protocol (pg. 7)

B. Additional information

(1) Report any change in level of sensation.
(2) Report any new paralysis immediately to EMS.
(3) Report any other possible injury

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**Spinal Motion Restriction:**

**Clinical Indications:**
- Need for spinal motion restriction as determined by flowchart below

**Procedure:**
1. Determine if patient meets criteria for spinal motion restriction (see flow chart)
Spinal Immobilization Decision Flowchart

- **Neuro Exam: Any focal deficits or AMS?**
  - no
  - yes
  - **Significant Traumatic Mechanism or > 75 yr or < 5 yrs w/sig trauma**
    - no
    - yes
    - **Evidenced of Major Injury which may distract patient's awareness of pain**
      - no
      - yes
      - **Evidence of Intoxication or Mental impairment**
        - no
        - yes
        - **Pain to palpation of spinous process of cervical, thoracic or lumbo-sacral spine**
          - no
          - yes
          - **Neck pain to patient's range of motion**
            - no
            - yes
            - Spinal immobilization **NOT required**
          - Spinal immobilization **REQUIRED**
        - Spinal immobilization **REQUIRED**
    - Spinal immobilization **REQUIRED**
  - Spinal immobilization **REQUIRED**

**IF PATIENT MEETS CRITERIA:**

1. Gather a backboard, straps, C-collar appropriate for patient’s size.
2. Explain the procedure to the patient (if conscious).
3. Second rescuer should maintain the head in a neutral position using in line stabilization (not traction). Place the patient in an appropriately sized C-collar while maintaining inline stabilization of the C-spine.
4. Assess peripheral motor/sensory function and distal pulses (PMS).
5. Once the collar is secure, the second rescuer should continue to maintain

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stabilization.

6. Move patient to a long board using a technique appropriate for the patient position which maximizes maintenance of in-line spinal stability. (log roll, four man lift, rapid extrication, etc.).

7. Secure the body to the long board followed by the head using straps. Once the head is secured to the backboard, the second rescuer may release manual in-line stabilization.

8. Place padding in void spaces under and around patient, if time permits.

9. Assess peripheral motor/sensory function and distal pulses (PMS).

10. Some patients, due to size or age, will not be able to be immobilized through in-line stabilization with standard backboards and C-collars. Never force a patient into a position to immobilize them. Such situations may require a second rescuer to maintain manual stabilization throughout the transport to the hospital and continual assessment of distal PMS.

20.5.1 | When properly fitted, the sides of the collar should come very close to or slightly overlap the earlobe.

20.5.2 | A collar that is too big will extend way above the earlobes. Consider readjusting or selecting a smaller size collar.

20.5.3 | When properly fitted, the patient’s chin will fit completely and snugly within the saddle of the collar.

20.5.4 | A collar that is too big will extend well beyond the chin, allowing for excessive movement. Consider readjusting or selecting a smaller size collar.
Applying manual C-spine stabilization and C-collar on a seated patient

20.6.1 | Establish manual stabilization of the head while your partner selects a collar.

20.6.2 | Select an appropriately sized collar or adjust the collar based on the patient’s size. Follow the manufacturer’s guidelines for size and adjustment selection.

20.6.3 | Place the collar beneath the patient’s chin and firmly against the lower jaw. The chin should fit well within the chin saddle of the collar.

20.6.4 | Secure the collar in place by overlapping the Velcro closer at the side of the patient’s neck. Confirm fit by looking at ears and chin.
Applying manual C-spine immobilization and a C-collar on a supine patient.

20.7.1 | Slide the back portion of the cervical-spine immobilization collar behind the patient’s neck. Fold the loop Velcro inward on the foam padding.

20.7.2 | Position the collar so that the chin fits properly. Secure the collar by attaching the Velcro.

20.7.3 | An alternative method of applying the collar to a supine patient is to start by positioning the chin piece and then sliding the back portion of the collar behind the patient’s neck.

20.7.4 | Hold the collar in place by grasping the trachea hole. Attach the loop Velcro so it mates with (and is parallel to) the hook Velcro.
11- CHEST INJURY
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ASSESSMENT:

A. Mechanism of injury:
   a. Blunt trauma can result in: fractured ribs, fractured sternum, and rib cartilage, collapse lung, flail chest, contusion to the heart and lungs.
   b. Penetrating objects: bullets, knives, pieces of metal or glass, steel rods, pipes, etc.
   c. Compression: striking chest on steering column

B. Closed Chest Injuries - from blunt forces i.e. falls, contact sports, MVA, blast injuries, etc. Can result in:
   a. Fractured rib or ribs: Signs and symptoms
      i. Severe chest wall pain and tenderness
      ii. Shortness of breath
      iii. Shallow, painful breathing
      iv. Self-splinting by holding an arm tightly against the chest wall.
   b. Pneumothorax: Signs and symptoms
      i. Difficulty breathing
      ii. Sharp pain during inhalation
      iii. Rapid shallow respirations
      iv. Decreased breath sounds on one side
      v. Asymmetric movement of the chest wall during breathing
      vi. Possible bruising over the chest wall
      vii. Tenderness over chest wall
   c. Flail Chest: Signs and symptoms
      i. Two or more ribs are broken in two or more places
      ii. Soft spongy patch of the chest wall
      iii. Crepitus from broken ribs
      iv. Paradoxical chest wall movement (opposite movement of the chest wall during inspiration and expiration from the rest of the chest).
      v. Shortness of breath
      vi. Shallow, rapid breathing.
      vii. Significant pain on palpation of flail segment

C. Open Chest Injuries – from penetrating trauma, i.e. GSW, stabbing, etc.
   a. Open pneumothorax: signs and symptoms
i. Sucking chest wound. Air moving in and out of the hole in the chest wall during inspiration and expiration.
ii. Shortness of breath
iii. Difficulty breathing, air hunger

b. Tension pneumothorax
i. Ever increasing shortness of breath and difficulty breathing
ii. Diaphoretic
iii. Decreased or absent chest wall movement on the affected side, with breathing
iv. Distended neck veins
v. shift in the trachea to the opposite side (tracheal deviation)

TREATMENT:

E. Take appropriate BSI precautions
F. Focus on ABC’s and control major bleeding
G. Expose the chest for an examination.
H. Place on oxygen 15 lpm via Non-rebreather mask
I. If no cervical spine concern, allow patient to assume position of comfort
J. Palpate the chest for deformity. Press firmly across all areas of the chest wall. Palpate the anterior, posterior and lateral chest walls. Note any signs of bruising or discoloration.
K. Be prepared to assist ventilations with a BVM
   1) Provide positive pressure ventilations if breathing is not adequate
L. For suspected fractured ribs: splint the rib with a bulky dressing
M. For flail chest: splint the flail segment using bulky dressing or folded towels. Hold in place manually or with cravats.
N. For gunshot wound to chest: be sure to check for entrance and exit wounds
O. For open chest wounds: should be immediately sealed with an occlusive dressing. As a temporary measure, you can immediately cover the wound with your gloved hand. An occlusive dressing (sterile gauze that is saturated with petroleum jelly, or a plastic bag) is the best choice for open chest wounds.
   1) The occlusive dressing should extend 2 inches or more beyond the edges of the wound.
   2) It is helpful to place a gauze dressing or piece of plastic over the occlusive dressing because the tape will not stick well to the petroleum jelly. Tape 3 sides only.
   3) If blood or perspiration prevents the tape from sticking to the patient’s skin, you may have to hold the dressing in place with your hands.
4) You must monitor the patient’s breathing status very closely. It is possible that pressure will build up despite the wound being sealed from the outside.

5) If difficulty breathing continues to worsen, release the occlusive dressing momentarily to see if air will escape through the wound.

6) Provide high flow oxygen and care for shock

P. For impaled chest wounds:
   1) Perform a primary assessment and assured the ABCs or intact. Assist ventilations as appropriate.
   2) Immediately stabilize the object.
   3) Provide high flow oxygen.
   4) Provide care for shock
   5) Initiate immediate transport

---

**Figure 21.8** Place an occlusive dressing over an open chest wound and tape in either three or four sides. Follow local protocol.
REPORT:

A. Report any obvious chest injuries and location
B. Treatment provided
C. Vital signs

Figure 21.9 • Stabilize impaled objects using bulky dressings.
13- CHEST PAIN
Reviewed and approved: 2018

ASSESSMENT

A. ABC’S, per 01 - General Supportive Care Protocol, pg. 7.

B. Has the patient taken any medication within the past hour or two in an attempt to alleviate the problem?
   (1) If yes, what effect did it have?
   (2) What was the medication?
   (3) How much did the patient take?

C. Assessment of the pain:
   (1) Location of the pain
      (a) Jaw, neck, shoulder or arm pain can also indicate cardiac problems
      (b) Ask if pain radiates from one location to another (e.g., down arms)
   (2) Quality of pain:
      (a) Squeezing
      (b) Tightness
      (c) Crushing
   (3) Onset of pain
      (a) While at rest
      (b) While engaged in strenuous activity
      (c) Does it hurt to take a deep breath?

D. Assessment of Respiratory status:
   (1) Labored?
   (2) Audible wheezing?
   (3) Onset: sudden? How long?

E. Assess Skin condition:
   (1) Is skin cool, warm or hot? Clammy? Dry? Pale?

F. Obtain a set of vital signs.

TREATMENT

A. Oxygen as per 01- General Supportive Care Protocol, pg. 7, in preparation for the arrival of the advanced life support ambulance. Assist ventilations using Bag-Valve-Mask, if necessary, as per general supportive care protocol.
B. Monitor vital signs every 2 - 5 minutes.

C. Reassure patient. Try to keep patient and bystanders calm.

D. Place in most comfortable position (If nauseated or in respiratory distress, keep head elevated unless spinal precautions indicated)

F. If the patient does not have an allergy to aspirin, and has not had any recent GI bleeding (vomiting blood, passing blood in stool, dark tarry stool), patient may be administered four 81 mg baby aspirin by mouth. Patient should be asked if they have already taken aspirin prior to the First Responders arrival. If so, the First Responder should not administer additional aspirin.

G. If the patient’s blood pressure is over 100 systolic and the patient has Nitroglycerin prescribed to them, they may take one tablet (or spray) under the tongue. Reassess pain level and vital signs 5 minutes after administration of Nitroglycerin. If blood pressure remains greater than 100 systolic, you may assist in the administration of a second Nitro tablet (or spray). Maximum dose of 3 nitro tablets.

NOTE: If the patient has taken Viagra, Cialis or other erectile dysfunction Rx within the last 48 hrs. They should NOT take Nitroglycerin tablets

- Patient should not be allowed to take any other medications.

REPORT -  (Stable patient - report after arrival; unstable patient - report prior to EMS arrival):

A. Previous cardiac history?

B. Open heart surgery?

C. History of Congestive heart failure?

D. Irregular pulse - any history of it?

E. Medications, allergies, private physician.

F. Are they taking any blood thinners?

G. Have they had a bleeding problem?
14- CHILDBIRTH
Reviewed and approved: 2018

ASSESSMENT

A. ABC’s and vitals on mother, see 01- General Supportive Care Protocol, pg. 7

B. Current Medical History

1) What is patient’s due date?
2) Has she seen a doctor for this pregnancy?
3) Has her water broken? When? What did it look like?
4) How far apart are her contractions?
5) How many times has this patient been pregnant?
6) Has she had any problems with this pregnancy?
7) Has she had any problems with past pregnancies?
8) Has she had prenatal care?
9) Any drug or alcohol use with this pregnancy?

C. Secondary Survey

1) Is the baby’s head crowning?
2) Is there limb, or cord presentation of the infant?

(If so, notify EMS immediately).

TREATMENT

A. Take appropriate BSI precautions

B. Protect patient’s privacy; remove all unnecessary personnel and family, but consider someone acceptable to the patient as a chaperone.

1) Place patient in a semi-reclining position on left side, with clean towels or sheets under the patient.
2) Assist patient in removing underwear.
3) Time patient’s contractions from start to finish.
4) Time pause between the contractions and document.
B. If birth is imminent: (See fig 22.6)

1) **Notify EMS immediately**
2) Use gloves (sterile if possible) and PPE.
3) Drape patient’s legs and abdomen with clean or sterile sheets. If the amniotic fluid is not clear or is foul-smelling, notify EMS immediately. If amniotic sac is bulging at the vaginal entrance, do not rupture it.
4) Feel the abdomen for contractions when the patient says she is having labor pains. Explain what you are going to do and place the palm of your hand on her abdomen above the navel. It is not necessary to remove any of the patient’s clothing to feel for contractions.
5) If the infant’s scalp is visible, watch for evidence of further progression. Be prepared to place the palm of your hand slightly against the infant’s head to gently control the head as it delivers, but DO NOT PUSH on the head. Do not place hands inside the vagina except as directed by responding EMS Crew.

   (a) If any presenting part other than the head appears (particularly, an arm or umbilical cord), notify EMS immediately
   (b) If breach delivery occurs (foot or butt first), notify EMS immediately. The head usually gets stuck in the vagina so support the buttocks and torso with one hand, and place the index finger and forefinger of the other hand in the vagina to create an airway for the infant. DO NOT PULL ON INFANTS BODY to try and get it out.

6) Guide the infant’s head and body gently as delivery progresses. DO NOT PULL ON INFANT’S HEAD
7) Document the time of birth.
8) Use a bulb syringe. Expel air and contents away from the infant. Suction nose and mouth of any mucus, blood or other material.

9) Evaluate the infant’s condition: (SEE APGAR Scoring system below)
   a. ABC’s
   b. Vital signs
   c. Skin color
   d. Assist ventilations or provide CPR if indicated

10) Do not cut the umbilical cord unless advised to by EMS. If advised to do so:
    a. Wait 5 minutes following delivery and clamp or tie the umbilical cord.
    b. The first clamp should be placed approximately six inches from the baby’s abdomen.
    c. The second clamp should be placed approximately two to three inches away from the first (further from the baby).
    d. Then cut the cord between the clamps. If you do not have sterile equipment, do not cut the cord. Simply clamp it.

11) Dry the baby off. Wrap the infant in a warm blanket and cover the infant’s head to retain warmth. Give to mother to hold. It is very important to keep the newborn warm. Until the cord is clamped (6-10 inch clamps), infant should be kept at or below level of perineum/vagina to prevent blood from draining away from infant’s circulatory system.

12) Monitor infant and mother’s vital signs every 5 minutes and document.

13) Wait for delivery of the placenta. Gentle rubbing with the palm of hand on mother’s stomach is helpful at this time. If placenta delivers prior to the arrival of EMS, place it in a plastic bag and save it. (Do not pull on the cord to force placenta delivery).

14) Place a sanitary pad or clean towel over the vaginal opening. Do not place anything in the vagina.

15) Have the mother lower her legs and keep them together

16) Feel the mother’s abdomen until you find a grapefruit-size object. This is the uterus. Gently but firmly massage from the pubis bone at the front of the pelvis upward only and toward the naval. This will stimulate the uterus to contract and stop bleeding.

17) If the bleeding continues, provide oxygen and maintain normal body temperature. Continue to massage the uterus. If the mother wants to nurse, allow her to do so.

APGAR Scoring

The APGAR score is tool used to evaluate and document a newborn's physical condition. It is generally performed at 1 minute, and again at 5 minutes after birth.
APGAR scores

<table>
<thead>
<tr>
<th>Sign</th>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Appearance (Skin Color)</td>
<td>Blue-gray, pale all over</td>
<td>Pink except for extremities</td>
<td>Pink over entire body</td>
</tr>
<tr>
<td>P Pulse</td>
<td>Absent</td>
<td>&lt;100/min</td>
<td>&gt;100/min</td>
</tr>
<tr>
<td>G Grimace (Reflex Irritability)</td>
<td>No response to stimuli</td>
<td>Grimaces in response to stimuli</td>
<td>Sneezes, coughs, pulls away</td>
</tr>
<tr>
<td>A Activity (Muscle Tone)</td>
<td>Absent, flaccid</td>
<td>Arms and legs flexed</td>
<td>Active movement</td>
</tr>
<tr>
<td>R Respiration</td>
<td>Absent</td>
<td>Slow, irregular</td>
<td>Good, crying</td>
</tr>
</tbody>
</table>

APGAR scores should be assessed at 1 minute and again at 5 minutes after birth

Caring for the baby:

A. Clear the baby’s airway.
   1. Position the baby on his/her side with the head slightly lower than the body to allow for drainage.
   2. Keep the baby’s body at the level of the vagina until the cord is clamped.
3. Use a sterile gauze pad or a clean handkerchief to clear mucus and blood from around the baby’s nose and mouth. Throughout the rest of your care steps, be sure the baby’s nose remains clear.

4. If the baby is not breathing adequately or appears to be experiencing respiratory distress it may be helpful to suction the airway.
   A. Squeeze the bulb 1st
   B. Insert the tip about 1 inch into the baby’s nose or mouth
   C. Gently release the pressure to allow the bulb syringe to take up fluids
   D. Remove the tip of the filled bulb syringe from the baby and squeeze out any fluids onto a towel or gauze pad
   E. Repeat this process 2 or 3 times for the mouth and for each nostril

5. Make certain that the baby is breathing. Usually the baby will be breathing on his or her own by the time you clear the airway, which will take about 30 seconds.

6. **If the baby is not breathing,** vigorously but gently rub the baby’s back. If this fails to stimulate breathing, snap one of your index fingers against the souls of the baby’s feet.
   A. If the baby is not breathing you must provide rescue breaths.
   B. Begin with 2 gentle but adequate breaths using the mouth-to-barrier or bag-mask technique.
   C. Then assess breathing and heartbeat. To check the heartbeat of a newborn, listen at the chest with your stethoscope or feel for a pulse by lightly grasping the base of the umbilical cord.
   D. Do not use a bag mask device or airway adjuncts designed for older children or adults to resuscitate a newborn
   E. be careful not to hyper extend the head and neck of the baby which could close off the airway
   F. Provide ventilations if breaths or shallow, slow, or absent. Ventilate 40 to 60 breaths per minute (about 1 breath every second) watch for chest rise, which is the best indication of adequate ventilation.
   G. Check the baby’s heart rate.
      1) IF heart rate is 100/min or greater and the infant is breathing adequately, stop ventilations but continue to provide gentle stimulation
      2) If heart rate is < 100 /min and respirations are inadequate, continue to assist ventilations with a bag-mask device
      3) If hear rate is < 60/min, continue to assist ventilations and begin chest compressions.
         A. Perform CPR with either your fingertips or your thumbs with your hands encircling the chest
         B. Ratio of compressions/ventilations for the newborn is 3:1

7. **If the baby is breathing:**
   A. Perform a quick assessment. APGAR
      1) Note skin color (blue, normal, pale),
      2) Any deformities?
      3) Strength of his/her cry (strong or weak)
      4) Whether he/she moves on his/her own or just lies still.
B. Clamp or tie off the umbilical cord
C. Keep the baby warm. Dry the baby and discard the wet material in a biohazard bag.
D. Wrap the baby in a clean, dry towel, sheet or baby blanket and place him/her on the mother’s abdomen. Keep the baby’s head covered to help reduce heat loss.
E. The mother may want to nurse the baby. Allow this. It will help contract the uterus and control any bleeding.

REPORT - Report to EMS

A. As indicated in 01 - General Supportive Care Protocol, and include the information obtained above regarding mother’s history and delivery of infant.
Figure 22.6 - Emergency care algorithm for an imminent delivery.
ASSESSMENT:
A. Complications include:
   1. Abnormal bleeding
   2. Miscarriage
   3. Ectopic pregnancy
   4. Breech delivery
   5. Premature delivery
   6. Multiple births
   7. Stillborn births
B. Risk factors that contribute to complications:
   1. Younger than 18 or older than 35 yrs of age
   2. First pregnancy or more than five pregnancies
   3. Swollen face, feet, or abdomen from water retention
   4. High or low blood pressure
   5. Diabetes
   6. Illicit drug use during pregnancy
   7. History of seizures
   8. Predeelivery bleeding
   9. Infections
   10. Alcohol dependency
   11. Injuries from trauma
   12. Premature rupture of membranes (water broke more than a few hours before delivery)
C. Obtain a good history from the patient

TREATMENT:
A. For Pre-birth Bleeding/Miscarriage:
   1. Make certain that an ambulance is on the way.
   2. Take appropriate BSI precautions if you have not done so already
   3. Place patient on her left side, but do not hold her legs together
   4. Take a baseline set of vital signs. Then continue to take vitals every few minutes thereafter
   5. Provide care for shock, monitor the patient’s airway, and administer oxygen (2 liters should be fine unless patient is in shock)
   6. Place a sanitary pad or bulky dressings over the vaginal opening.
   7. Replace pads or dressings as they become soaked. DO NOT place anything in the vagina.
8. Save all blood-soaked pads and dressings, as well as any tissue that the mother passes. Place them in a biohazard bag for transport to the hospital and examination by a physician.
9. Monitor and reassure the patient while you wait for EMS.
10. Provide emotional support.

B. For **Ectopic pregnancy** (pregnancy is outside the uterus):
1. Patient may be experiencing severe pain in the lower abdomen. Allow position of comfort. Make note if the pain is more on one side or the other
2. Monitor vital signs
3. Provide oxygen
4. Patient will need urgent transport to the hospital

C. For **Meconium staining** (green or brownish-yellow discoloration of the amniotic fluid).
1. If the fluid is stained when the baby is born, be prepared to wipe the baby’s mouth and nose and to suction.

D. For **Breech Birth** (buttocks or feet present first):
1. As the buttocks and trunk deliver together, place one hand and forearm under the baby for support. Be sure to support the head as it delivers.
2. If the baby’s head does not deliver within three minutes after the buttocks and trunk, you must immediately notify dispatch to alert responding EMS.
3. Place the mother on a high concentration of oxygen
4. Create an airway for the baby because the umbilical cord will be compressed between the infant and the vaginal wall, shutting off blood flow. Tell the mother what you must do and why. Insert you gloved hand into the vagina, with your palm towards the baby’s face. Form a V by placing one finger on each side of the baby’s nose (see fig 2.18). Push the wall of the birth canal away from the baby’s face. If you cannot complete this process, then try to place one fingertip into the infant’s mouth and push away the birth canal wall with your other finger.
5. Maintain the airway. Once you have created an airway for the baby, keep the airway open. Do not pull on the baby. Allow deliver to take place while you continue to support the baby’s body and head.

6. If the head does not deliver in three minutes after you have created an airway, it is necessary to have the mother and infant transported to a medical facility immediately. Maintain the airway throughout all stages of care until higher-level EMS personnel relieve you.

E. For **Limb presentation**:
   1. Patient needs transport immediately
   2. Do not pull on the limb or try to place your gloved hand into the birth canal
   3. Do not try to place the limb back into the vagina
   4. Place the mother in a knee-chest position (fig. 22.19) to help reduce pressure on the fetus and the umbilical cord.
may find the umbilical cord is compressed and the umbilical cord will be compressed between the infant and the vaginal wall, shutting off blood flow. Tell the mother what you must do and why. Insert your gloved hand into the vagina, with your palm towards the baby’s face. Form a V by placing one finger on each side of the baby’s nose. Push the wall of the birth canal away from the baby’s face. If you cannot complete this process, then try to place one fingertip into the infant’s mouth and push away the birth canal wall with your other finger.

2. Do not try to push the cord back into the birth canal
3. Place mother in a knee-chest position to reduce pressure on the cord.
4. Try to maintain a pulse in the cord.
5. Place a wet dressing (use sterile water or saline if available) over the cord to keep it moist.
6. Wrap the cord in a towel or dressing to keep it warm.
7. Provide the mother with high flow oxygen
8. Monitor vital signs and arrange for immediate transport.

G. For Multiple Births:
1. Not necessarily an abnormality but sometimes involve premature delivery
2. If the umbilical cord has stopped pulsating, you will tie or clamp the cord of the first baby before the second baby is born.

3. Once the babies are delivered and are breathing, assess each one, noting skin color (blue, normal, pale), any deformities, strength of their cries, and whether they move on their own or just lie still.

4. If necessary, perform resuscitation.

H. For **Premature births** (baby weighing less than 5.5 lbs. or any baby born before the thirty-seventh week (prior to the ninth month) of pregnancy):
   1. In addition to normal birthing procedures, you must take special steps to keep a premature baby warm.
   2. Dry the baby
   3. Wrap him/her in a blanket, sheet, or towel.
   4. A blanket covered with foil is ideal (fold the edges of the foil to avoid cutting the baby).
   5. Cover the baby’s head, but keep the face uncovered.
   6. Transfer the baby to a warm environment (90°F to 100°F [32°C to 37°C]), but do not place a heat source too close to the baby.
   7. Ventilate a premature baby who needs resuscitation using a mouth to mask technique or an appropriately sized bag-mask device.
   8. Wipe or suction blood and mucus from the mouth and nose first before ventilating.

I. For **Stillborn Deliveries** (fetus is delivered dead)
   1. If the infant shows no signs of life at birth (no attempts to breathe and move) or goes into respiratory or cardiac arrest, provide resuscitation.
   2. Do not stop resuscitation until the baby regains respirations and a heartbeat, other emergency care providers relieve you, or you are too exhausted to continue.
   3. Do not attempt to resuscitate a stillborn that has large blisters and a strong unpleasant odor.
   4. Other indications the infant died earlier: very soft head, swollen body parts, or obvious deformities.

J. For **supine hypotensive syndrome**: caused when the pregnant mother lies flat and weight of the fetus and other organs press on the mothers vena cava, the large vessel in the abdomen that returns blood back to the heart. The pressure on the vena cava restricts blood flow back to the heart, causing signs of shock such as low blood pressure, increased pulse, pale skin, and in some cases altered mental status.
   1. Reposition the patient to either a seated position (semi-fowlers) or having her lie on her left side. The weight of the fetus will shift to the left and off the vena cava, allowing better blood flow (venous return) to the heart.
K. For **pre-eclampsia and eclampsia**: Signs and symptoms; Pre-eclampsia = abnormally high blood pressure, fluid retention causing swelling of the arms, hands, and face, headache, nausea. Eclampsia = seizures, coma and eventual death of mother and fetus
   1. The only treatment for preeclampsia is the delivery of the baby.
   2. Rapid transport to the hospital is essential
   3. Support ABCs
   4. High flow oxygen
   5. Have suction ready and be prepared for seizures.

L. For **trauma in pregnancy**:
   1. Do not mistake the high pulse rate and low blood pressure for signs of shock in the normal pregnancy
   2. In trauma, the larger blood volume allows her to body to compensate for the blood loss and therefore may not show early signs of shock.
   3. Always suspect internal bleeding in any pregnant trauma patient, even if she seems to be initially unharmed and shows normal vital signs for a pregnant woman.
   4. Even if the mother is not injured, the fetus may be injured in an advanced pregnancy.
   5. During scene size up, look carefully at the environment, the patient, and the mechanism of injury (blunt force vs penetrating trauma).
   6. Ensure open airway and adequate breathing
   7. Provide high flow oxygen
   8. Control external bleeding
   9. Keep the patient warm but do not overheat
   10. Monitor vitals frequently, treat for shock.

M. For **Vaginal Bleeding in pregnancy**:
   1. Get a baseline set of vital signs and monitor frequently
   2. Place patient on high flow oxygen
   3. Keep patient warm
   4. Place sanitary pad or bulky dressing over the vaginal opening
   5. Replace pads or dressings as they become soaked.
   6. Do not place anything in the vagina.
   7. Save all blood-soaked pads and dressings and place them in a biohazard bag for transport to the hospital and examination by a physician.

N. For **sexual assault** patients:
   1. Provide care for injuries, including spinal immobilization if applicable, extremity splinting, and wound dressing
   2. Provide emotional support
   3. Do not clean the vaginal area
4. Do not let the patient wash
5. Do not let the patient go to the bathroom
6. If she insist on cleaning herself and changing her clothes, you cannot stop her.
7. Advise her that the hospital personnel may be able to collect evidence from her that will help with the investigation.
8. If you should collect clothing and any items that were used during the assault, place them in a paper bag or wrap them in a towel. DO NOT place the items in a plastic bag. DO not let others handle the bag or towel until you hand it yourself to law enforcement personnel or EMS (should law enforcement not be on scene). There needs to be a chain of custody involving as few people as possible.
16- Choking – Airway Obstruction
Reviewed and approved: 2018

Assessment:
1. Airway obstruction caused by the tongue or foreign objects are potentially treatable by the 1st responder.
2. Obstructions caused by tissue damage, allergic reactions, or infections may not be treatable by the 1st responder, however you must still attempt to assist ventilations.
3. Assess for signs of a partial airway obstruction: listen for abnormal breathing such as snoring, gurgling, crowing, wheezing and/or stridor.
4. If patient is awake, they may show signs of fear, panic, or agitation.
5. If patient is unable to speak, breeds, or cough, the patient often will to grasp his/her neck and opened his/her mouth (the universal sign of choking)
6. The unresponsive patient may already be lying on the ground with no chest movement and no palpable air exchange felt.

Treatment:
1. If a responsive patient is experiencing a partial airway obstruction, encourage him/her to cough.
2. If patient has a forceful cough, do not interfere with patient’s own efforts to clear the airway
3. If patient has a very weak cough or is unable to cough begin care as if there is a complete airway obstruction.
4. For the responsive adult or child:
   a. Confirm that there is complete obstruction or a partial obstruction with poor air exchange. Ask, “are you choking?” or “can you speak?”
   b. Look and listen for signs of complete obstruction or poor air exchange.
   c. Position yourself behind the patient, and with the index finger of one hand, locate the naval.
   d. Make a fist with the other hand and place it against the abdomen, thumb side in, just above the naval.
   e. Grasp the fist with the first-hand and give up to 5 abdominal thrust in rapid succession. Watch and listen for evidence that the object has been removed. The patient will begin to cough or speak if the object is removed.
5. For the unresponsive adult or child:
   a. Take the appropriate BSI precautions
   b. Establish unresponsiveness, if unresponsive, report this to 911
   c. Open the airway using the most appropriate maneuver prior to attempting ventilation. Look for and if possible, remove any obvious foreign body in the oral cavity a finger sweep, being careful not to
push further down the airway. Consider using an oral airway as an adjunct.

d. Attempt to ventilate.
   i. **If you are able** to ventilate the patient, check for pulse. If pulse present continue to ventilate. If no pulse present initiate CPR.
   ii. **If you are unable** to ventilate, attempt to reopen the airway and try again. If still unsuccessful, continue with CPR compressions.

6. **For the Responsive Infant:**
   a. take appropriate BSI precautions
   b. Pick up the infant and support him between the forearms of both arms.
      Support the infant’s head as you place him face down on your forearm.
      Use your thigh to support your forearm. Remember to keep the infant’s head lower than the trunk.
   c. Rapidly deliver 5 back blows between the shoulder blades. If this fails to expel the object, proceed to the next step.
   d. While supporting the infant between your arms, turn him over onto his back, again keeping the head lower than the trunk. Remember to support the infant’s neck. Use your thigh to support your forearm.
   e. Locate the compression site and deliver 5 chest thrusts with the tips of 2 or 3 fingers along the midline of the breastbone.
   f. Continue the sequence of back slaps and chest thrusts until the object is expelled or the infant loses responsiveness.
   g. If the infant becomes unresponsive before you can expel the object, begin CPR.

7. **For the unresponsive infant:**
   a. Take appropriate BSI precautions
   b. With the infant lying face up (supine), tap and shout to assess responsiveness.
   c. If the infant is unresponsive, notify 911 and begin CPR with chest compressions.
   d. After each set of 30 compressions, open the airway and check for evidence of a foreign object. Remove it if it is visible.
   e. Attempt to rescue breaths. If brats do not go in, continue CPR with chest compressions

8. **For obese and pregnant patients:**
   a. For these 2 responsive patients, attempt to provide chest thrusts as an alternative to abdominal thrust
   b. an alternative for the obese patient is to have him/her stand against a sturdy wall, and attempt abdominal thrust from the front.
   c. Determine that there is complete obstruction or a partial obstruction with poor air exchange. Ask, “are you choking?” Or “can you speak?” Tell the patient you will help.
d. Position yourself behind the patient in place the thumb side of one fist on the center of the breastbone.
e. Grasp the fist with the other hand and give up to 5 chest thrusts in rapid succession. Watch and listen for evidence that the object has been removed. If it has, the patient will begin to call or speak.
f. If the patient’s airway remains obstructed, repeat the thrust until the airway is clear or until the patient loses responsiveness.
g. If patient becomes unresponsive before you are able to clear the airway obstruction, notify 911 and begin CPR.

Report:
1. Report to EMS the following:
   a. If airway obstruction was partial or complete.
   b. If patient was able to remove obstruction without assistance.
   c. Did the 1st responder have any success in removing the obstruction?
   d. Is there still evidence of obstruction?
   e. Do you know what the patient may have choked on?
17- COLD-RELATED INJURY
Reviewed and approved: 2018

ASSESSMENT/TREATMENT

I. **Hypothermia** (Decreased body temperature)

   A. Symptoms:

   (1) Skin cold; may or may not be shivering
   (2) Vague, slow, slurred, and thick speech
   (3) Disorientation and mental confusion
   (4) Unconsciousness, deep coma with severe hypothermia
   (5) Vital signs may appear to be absent: Don’t assume a patient is dead until they are warm and dead!!

   B. Treatment:

   (1) Take appropriate BSI precautions.

   (2) Move patient to a warm, draft-free environment. Maintain horizontal position. Handle gently!! Sudden movement may cause lethal cardiac rhythms.

   (3) Protect the patient from further heat loss

   (4) ABC’s: Assist respirations as indicated in 01 - General Supportive Care Protocol, pg. 7. Assist gently!!

   (5) Continue gentle warming efforts until EMS arrives. Cover with warm blankets and allow patient to re-warm slowly. Remove wet garments if patient can be sheltered from cold.

   (6) Monitor vital signs.

   C. Report to EMS crew as indicated in general supportive care protocol.

   D. Do NOT cancel ambulance or declare patient dead until after patient is re-warmed to body temp.

II. **Frostbite** (Skin or deep tissues frozen)

   A. Symptoms:

   (1) Skin: cold, firm, white and waxy in appearance; may also appear mottled or blotchy. Swelling may be present. Blisters may be present.
   (2) May experience numbness or tingling in hands, feet.
(3) May also have hypothermia.

B. Treatment:

(1) Appropriate BSI precautions
(2) Perform a primary assessment and ensure adequate breathing.
(3) Remove patient from the cold environment and protect from further cold exposure.

(4) Warm carefully - don’t rub!!! (May cause injury to skin and underlying soft tissue). If clothing is frozen to the skin, leave it alone - remove after thawing. Remove any constricting clothing or jewelry. Do not begin re-warming until you are sure patient is safely out of the freezing environment. (Thawing followed by refreezing increases damage).

(5) Hands and feet may be submerged in warm, not hot, water to aid in warming; water should be just above normal body temperature. Never use dry heat. If feet are involved, do not allow patient to walk.

C. Report to crew as indicated in 01 - General Supportive Care Protocol, pg.7.
18- DIABETIC EMERGENCIES/HYPOGLYCEMIA
Reviewed and approved: 2018

ASSESSMENT

A. ABC’s (See 01 - General Supportive Care Protocol, pg.7)

B. Initial Assessment (See 01 - General Supportive Care Protocol, pg.7)

C. Past Medical History: SAMPLE (see 01 - General Supportive Care Protocol, pg.7)

D. Determine:
   (1) When did patient last take his/her diabetic medication?
   (2) Has patient eaten? When?
   (3) Has patient had a change in their normal level of consciousness?
   (4) Has this happened before?

TREATMENT

A. Oxygen as per general supportive care protocol in preparation for the arrival of the advanced life support unit.

B. Place in position of comfort and safety.

C. Observe carefully, patient can have seizures or appear as if they’ve had a stroke when hypoglycemic.

D. If patient has history of diabetes and/or an altered mental status the first responder should utilize Glucose monitor (if available [can use patient’s]) to check blood sugar levels. If level is below 60 mg/dl or signs/symptoms indicate low blood sugar (see below) and patient is still conscious and is able to swallow:
   a. First responder may assist patient in self-administering a sugar source.
      (Orange juice with sugar or oral glucose [~15 grams], etc.). May repeat x 1 in 15 minutes
      (1) Avoid oral intake if there appears to be risk of aspiration due to depressed level of consciousness.
      (2) Never put anything in an unconscious patient’s mouth.

E. If patient unconscious, notify EMS immediately, maintain open airway, monitor ABC’s.

F. Vital signs every 3 - 5 minutes

G. If patient found to have markedly elevated blood sugar (> 300) and an altered mental status, monitor airway, position patient to allow oral secretions to drain from mouth.
H. If patient has altered mental status but is alert (able to sit up and swallow or handle secretions) and no blood glucose can be obtained, assist the patient with taking oral glucose (sugar, candy or orange juice or a soft drink [not diet])

**REPORT** - Report to EMS Crew

A. Report as indicated in general supportive care (See General Supportive Care Protocol)
B. Report glucose level (if obtained) and any treatment provided.
C. Additional information listed above regarding taking of medicines and ingestion of food.

**NOTE**: Signs and Symptoms of abnormal low glucose level (Hypoglycemia):
- Decreased mental status
- Change in mental status from patient’s baseline
- Bizarre behavior (combative, confused, disoriented)
- Skin: Cold, Diaphoretic
- Possible seizure activity

Signs and Symptoms of abnormally high glucose level (Hyperglycemia)
- Skin: Warm, dry or diaphoretic
- Fruity odor on breath
- Deep, rapid breathing (Kussmal respirations)
- Altered level of consciousness
19- DO NOT RESUSCITATE (DNR) ORDERS
Reviewed and approved: 2018

The following patients should NOT receive resuscitative efforts:
  • Decapitation
  • Incineration
  • Obvious mortal wounds (severe trauma with obvious signs of organ destruction)
  • Obvious rigor mortis
  • Evidence of decomposition
  • Dependent lividity
  • Fully executed state DNR Order on state approved form
  • Patient with suspected traumatic mechanism found pulseless and apneic by first responder on scene with no respiratory effort after basic airway maneuvers and lack of organized electrical activity on EKG
  • Fetal death with a fetus < 20 weeks by best age determination available at scene
  • In the presence of Asystole and downtime of > 20 minutes with no pre-arrival instructions being performed

If there is ANY doubt, begin resuscitation and wait for arrival of EMS

EMS MUST BE CONTACTED FOR ALL PATIENTS WHO WILL BE DECLARED DEAD AT THE SCENE.
I. **Lightning Injuries**

A. **ASSESSMENT**

1. Often, little external evidence of injury
   - Relatively small entrance and exit wounds
   - Extensive internal injuries including deep tissue burns, solid organ injury, tissue swelling.
2. Explosive injuries: fractures, internal injuries, etc. may be present.
3. Confusion and changes in level of consciousness.
4. Cardiac dysrhythmias, sudden cardiac arrest.
5. Respiratory arrest: keep in mind, after a lightning strike, the patient’s heart may start beating again shortly after the strike, due to the inherent electrical generating nature of some of the cardiac cells. The respiratory muscles may take longer to recover from a lightning strike than the heart muscle, therefore, if the patient is in complete arrest (no pulse and not breathing), the heartbeat may return before the patient starts to breath on his/her own. If you feel the return of a pulse but patient is still not breathing, provide ventilation support with a BVM.

B. **TREATMENT**

1. Scene Safety. Stay in vehicles until lightning is well clear of the area.
2. Remove patient from exposure to further lightning injury. Remember to maintain c-spine precautions.
3. If unconscious, apply AED (if you are authorized to do so by the Medical Director) and check pulse.
4. “Treat the dead first”. This is one exception to traditional triage. There are numerous reports of lightning strike victims who were thought to be dead initially, but who responded well to resuscitation.
5. ABC’s: Assist respirations as indicated in general supportive care protocol; provide CPR and cardiac arrest protocol if indicated.
6. Follow AED protocols.
7. Treat for shock if indicated.

C. **REPORT**

1. Report to crew as indicated in General Supportive Care Protocol, pg.7.
2. Number of victims

II. **Electric Shock**

A. **ASSESSMENT**
(1) **Scene safety.** Ensure power is off before contacting patient.
(2) Burns may be significant.
(3) Cardiac dysrhythmias and cardiac arrest.

**B. TREATMENT**

(1) Move patient to safe area when able to do so safely.
(2) ABC’s per 01 - General Supportive Care Protocol
(3) Cardiac Arrest and AED protocols as indicated.
(4) Burn Protocol as indicated.
21- EYE INJURIES involving chemicals
Reviewed and approved: 2018

ASSESSMENT

A. Assure ABCs; see 01 - General Supportive Care Protocol.
B. Determine chemical exposure and degree to which patient was exposed (i.e. May have chemical on clothing, etc.).
C. Rescuer safety. DO NOT EXPOSE YOUSELF TO SAME CHEMICALS.
D. Is there significant vision loss? Can patient see clear enough to count your fingers if you hold your hand up in front of their face?
E. Is there any possible eye trauma from foreign objects? If patient’s eye is swollen shut, do not force it open.

TREATMENT

A. Initial Assessment.
B. Remove contaminated clothing and decontaminate patient as needed.
C. If chemical injury, flush immediately and continuously with eyewash or sterile water. Continue to flush eye/eyes until EMS arrives
D. Give chemical container or name of chemical to EMS.

REPORT - Report to EMS Crew

A. Report as indicated in General Supportive Care Protocol
22. **EYE INJURIES involving foreign object trauma**
Reviewed and approved: 2018

**ASSESSMENT**

A. Assure ABCs; see 01 - General Supportive Care Protocol, pg. 7.

B. C-spine precautions if significant head trauma per 07 - C-spine protocol, pg. 43

C. Determine mechanism of injury.

**TREATMENT**

A. Keep patient calm!

B. Do not attempt to put a dislodged eye back into its socket.

C. Do not touch or apply any pressure to involved eye.

D. If patient’s own tears do not wash away a foreign object, use running water to remove it.

E. For **Impaled Objects**: Stabilize the foreign object so that it does not move or cause further injury. Do not remove the object or allow it to fall out. First Responders may use the following techniques provided the patient is calm, cooperative and will not cause further injury:

   1. Protect the eye from any contact or movement of impaled objects
   2. Use several layers of dressings or small rolls of gauze to make thick pads. Place them on the sides of the object.
   3. Fit a disposable cardboard drinking cup or paper cone with a hole cut in the bottom over the impaled object and on top of the gauze padding. This will serve as a protective shield.
   4. Rest the cup or cone onto the thick dressing pad, but do not allowed this protective shield to come into contact with the impaled object.
   5. Hold the pad and the protective shield in place with a roller bandage or with a wrapping of gauze or other cloth material. Wrap gauze around the pad and protective shield to secure to head.

F. If the patient is cooperative, also cover the uninjured eye to minimize eye movement. (Patients may panic if completely blinded by dressings; do not force them to cover both eyes.)

G. Stabilize and treat any other injuries per protocol.

**REPORT** - Report to EMS Crew
A. Report as indicated in 01 - General Supportive Care Protocol, pg.7.

Stabilizing a FB in the eye.
23- Extremity Injuries and splinting
Reviewed and approved: 2018

ASSESSMENT:
A. Appropriate BSI precautions and scene size up
B. Focus initially on the ABCs, stabilizing life-threatening injuries, and consider C-Spine precautions.
C. Types: fracture, dislocation, sprain, and strain
D. Signs and symptoms:
   a. Pain
   b. Swelling
   c. Discoloration
   d. Deformity
   e. Inability to move a joint or limb
   f. Numbness or tingling sensation
   g. Loss of distal pulse
   h. Slow capillary refill
   i. Grating
   j. Sound of breaking at the time injury
   k. Exposed bone due to an open fracture
E. All injured extremities should be assessed for adequate circulation, sensation, and motor function before and after immobilization.
F. Check circulation by assessing distal pulses and capillary refill. Check for capillary refill time by pressing the nail bed or pad of the finger or toe of the injured extremity between your finger and thumb. When you press the skin, it forces the blood out of the tissues causing them to blanch, or turned white. When you release pressure, the blood should flow back into the tissue in less than 2 seconds. If it takes longer than 2 seconds for the tissues to reveal with blood, it may be a sign of compromise circulation to the extremity. If possible, compare the injured side to the uninjured site.
G. To assess for normal sensation of the distal extremity, squeeze the fingers or toes of the injured extremity and pass the patient to tell you if he can feel your touch and where you are touching.
   a. Ask patient if the touch feels normal or if it feels numb or tingling.
   b. Gently squeeze just one finger or go and ask the patient if he can tell which finger or toe you are squeezing.
H. To assess motor function, as the patient wiggled his fingers or toes. Assess strength by placing your thumbs. In each hand of the patient and asking him to squeeze. For the feet, place your hands at the bottom of his feet and asked him to press down on your hands.
TREATMENT:
A. Always take proper BSI precautions and perform a primary assessment before focusing on a particular injury.
   a. Assess and provide support for the ABCs
   b. manage life-threatening problems 1st
   c. prioritize and manage other injuries 2nd
B. Carefully cut away clothing to expose the injured site. Control bleeding if there is an open wound. Check for distal circulation, sensation, and motor function in the affected extremity.
C. Immobilize the extremity using manual stabilization or splints, if available.
   a. Immobilize the suspected fracture site.
   b. Immobilize the joints above and below the suspected fracture site. Use a sling and swathe for an arm to keep it elevated across the chest. Splendid, immobilize legs may be propped up on a folded blanket or pillow if there is no indication of spine injury.
   c. Recheck distal circulation, sensation, and motor function often.
D. Apply a cold pack or ice pack to the injury site to help reduce the pain and swelling. Never put a cold pack directly on the skin. Wrap it in gauze or a towel 1st. Then place it gently over the injury site. If the patient experiences pain from this extra pressure on the injury, place a cold pack just above the site.
E. Administer oxygen if applicable. 2 L by nasal cannula should be sufficient for most incidents unless evidence of shock exist, in which case 15 L by non-rebreather mask is appropriate.
F. Assess patient’s vital signs. Maintain a comfortable body temperature to help minimize the effects of shock.
G. Offer emotional support to the patient. He will or will
H. GENERAL RULES FOR SPLINTING: (Fig 19.2)
   a. Assess and reassure the patient, explain what you plan to do.
   b. Expose the injured site. Cut away clothing if you cannot be easily removed or folded back. Remove jewelry from the injured limb if it can be done without using force, causing pain, or repositioning the patient or the limb.
   c. Control all major bleeding. If necessary, use direct pressure, avoid applying pressure directly over exposed bone begins. To control bleeding, use bulky dressings secured snugly with the bandage
   d. Dress open wounds. Do not push bone ends back into the wound. Do not try to pick bone fragments from the wound. If the bone ends withdraw into the wound as you care for it, report this to the personnel who take over patient care so they can take steps to prevent infection in the patient.
   e. Check distal circulation, sensation, and motor function before and after splinting.
f. Splint injuries before moving the patient. Move the patient before splinting only if another injury or the environment is life-threatening.
g. Have all materials ready at hand before splinting. Use padded splints for patient comfort and improved contact between limb and splint. Wrap unpadded splints in dressing before applying them.
h. **If distal circulation is absent, gently attempt to re-aligned and angulated limb in the anatomical position before splinting.** Attempt to reposition the limb to regain a pulse if the limb is cold, blue, and has no pulse.
i. Immobilize the suspected fracture site and the joints above and below the injury site. Secure upper extremities to the torso with a sling and swathe. Secure the lower extremities to each other.
j. Secure splints with cravats or roller gauze, starting at the distal end of the extremity. Leave fingertips and toes exposed to you can monitor circulation, sensation, and motor function.
k. Elevate the extremity. For an arm, use a sling and swathe. For a leg, prop it on a pillow or rolled blanket if there is no indication of spine injury. If there is an indication of a spine injury, leave the patient lying flat (supine).
l. Minimize the effects of shock by maintaining body temperature in providing oxygen if applicable.
19.2.1 | After controlling bleeding, dress and bandage open wounds to the injured extremity.

19.2.2 | Check distal circulation, sensation, and motor function before splinting.

19.2.3 | Select an appropriate size splint for the injury and pad the splint thoroughly.

19.2.4 | Firmly secure the splint, leaving fingertips (or toes) exposed so you can monitor circulation.

19.2.5 | After immobilization, reassess distal circulation, sensation, and motor function.

19.2.6 | Elevate the extremity. For an arm, use the sling to immobilize it against the chest. For a leg, prop it on a pillow or rolled blanket (if there is no indication of spine injury).
I. Managing **Angulated Injures**
   a. If you find no distal pulse, and the skin in the distal extremity is pale or blue and cold, take action immediately to minimize potential permanent damage.
   b. Gently align the limb in an attempt to restore a distal pulse. DO NOT force the limb if you meet resistance or if the patient complains of too much pain.
      i. Carefully explain to the patient what you plan to do and why.
      ii. Support the extremity with both hands to minimize movement of the injury site. Use additional rescuers if needed
      iii. While supporting the limb, gently pull traction from the distal end as you carefully straighten the extremity.
      iv. Move slowly until you bring the extremity into a natural position similar to the uninjured limb.
      v. Reassure the patient as best you can.
   c. Apply a soft splint and elevate the limb by propping it on a blanket roll or pillow.
   d. If you are unable to straighten an angulated limb, immobilize the limb in the position found.

J. **Shoulder injury**: (Fig 19.3)
   a. It is not practical to use a rigid splint for injuries to the collarbone, shoulder blade, or shoulder joint.
   b. Place padding between the patient’s injured form and chest, use a cravat to secure the padding in place and use a sling and swathe to secure the arm to the chest. Remember to check for distal circulation, sensation, and motor function before and after splinting.
   c. If there is no pulse, attempt to reposition to regain a pulse, but do not force the arm. Do not attempt to straighten injuries that involved a joint. Joint injuries should be immobilized in the position in which they are found.
K. **Upper arm** injuries: (try to work with a partner)
   a. Check for distal circulation, sensation, and motor function.
   b. Select a padded splint long enough for the area between shoulder and elbow.
   c. Apply manual stabilization to the injured extremity. If there is angulation or no distal pulse, gently read the line and recheck for pulse.
   d. Place the splint against the injured extremity.
   e. Secure the splint to the patient with a roller bandage, handkerchiefs, cravats, or cloth strips. Begin securing at the distal end of the splint.
   f. Maintain the hand in the position of function, and apply a sling and swathe. Recheck distal circulation, sensation, and motor function.
   g. Use a soft splint (sling and spa) or a rigid splint to immobilize an upper arm injury. If you use a sling and swathe on an injury that seems
very close to the elbow, modified the full sling to minimize pressure on the elbow.

h. If the upper arm is angulated, check for a distal pulse.
   i. If pulse is present and the patient can tolerate movement, gently move the arm to the splinting position (bend the elbow with the hand elevated above the level of the elbow) and splint it. Do not force the arm to this position, and do not try to straighten the angulation. Recheck distal pulse.
   ii. If you do not feel a pulse, attempt to straighten the angulation in the upper arm bone. Do not force the arm. You should attempt to straighten the angulation only wants and stop if there is resistance or severe pain. If straightening the limb fails to restore a distal pulse, arrange a transport as soon as possible.

i. If you use a rigid splint, secure it to the lateral (outside) part of the arm with roller gauze or cravats. Next, apply a sling and swathe. The swathe will secure the injured arm to the body and immobilize the joints above and below the injury site.

L. Injuries to the **elbow**:
   a. If the elbow is found in a flexed (bent) position natural for the joint, rigid splinting is preferred. However, a simple sling and swathe may be affected.
   b. If the elbow is found in the straight position and cannot be placed in the neutral flexed position, immobilize it in the straight position. Rigid splinting is preferred, but body splinting is effective. This is done by tying the injured arm along the side of the patient’s torso. If you use a rigid splint, select splint that will extend from the patient’s armpit past the fingertips. Place a roll of dressing in the patient’s hand to maintain it in the position of function and secure the splint with all the cause starting at the distal end of the arm (fingertips).
   c. If the elbow appears to be dislocated and is in an unnatural or awkward position and cannot be reposition, place padding around the arm and between the arm and chest if necessary. If possible, secure the arm to the body with a sling and swathe.

M. Injuries to the **form, wrist, and hand**:
   a. The most effective splint for an injured arm, wrist, or hand is a rigid one.
      i. Select a padded rigid splint that extends from beyond the elbow to pass the fingertips. Roll newspapers, magazines, and increased core board make effective rigid splints for injuries to the forearm or wrist, but they still should be padded.
      ii. Place a roll of dressing in the patient’s hand to maintain the hand in position of function
b. However, the patient can be made comfortable with a pillow splint and
a sling and swathe. A sling and swathe of used alone is also effective
44.
c. Check distal circulation sensation and motor function before and after
splinting.
19.5.1 | **Shoulder.** Apply a sling and swathe. Elevate the wrist above the elbow and support it with the swathe.

19.5.2 | **Upper arm.** Immobilize with a rigid splint from the shoulder to the elbow. Apply a sling and swathe that will elevate and support the limb.

19.5.3 | **Elbow (bent).** Apply a sling and swathe to elevate and support the limb.

19.5.4 | **Elbow (straight).** Pad the armpit. Splint should extend from the armpit beyond the fingertips. Use roller bandages to secure the splint to the arm starting at the distal end. Secure the arm to the body with cravats.

19.5.5 | **Forearm, wrist, hand.** The splint should extend from the elbow to beyond the fingertips. Use a sling and swathe for elevation and support.

19.5.6 | **Finger.** Use a tongue depressor as a splint or tape the finger to an uninjured finger.
Patients with Elbow injury

19.6.1 | Check circulation, sensation, and motor function (CSM) prior to splinting.

19.6.2 | Secure a rigid splint to the arm.

19.6.3 | Apply a sling and swath.

19.6.4 | Recheck circulation, sensation, and motor function (CSM).

19.6.5 | Ensure the hand is in the position of function.
Figure 19.14 • Splinting an injured elbow in a straight position.

Figure 19.15 • Soft splint for wrist and hand injuries.
N. Injuries to the pelvic girdle:

First Responder Protocols
Reviewed and approved May 2018
a. Place patient on 2 L of oxygen by nasal cannula unless patient demonstrates signs of shock, low blood pressure and elevated heart rate in which case administer 15 L by non-rebreather mask.
b. Maintain body temperature to delayed onset of shock.
c. If you suspect spine injury, do not attempt to move the patient until the EMTs arrived with additional help. In the meantime, stabilize the patient’s head and neck and continue to reassure him/her.
d. Complete a thorough assessment of the injury site.
e. Assess circulation, sensation, and motor function in both distal extremities.
f. Provide oxygen to the patient as soon as possible (2 L per nasal cannula).
g. Place a folded blanket, large towel, or other thick padding material between the patient’s legs from groin to feet.
h. Prepare for cravats (folder triangular bandages) or other scraps of material.
i. Use a short splint or coat hanger and drape the ends of all four cravats over the splint or hanger. Slide them under the space behind the knees.
j. Gently slide 2 cravats above the knees and to below the knees
k. Starting at the feet (distal end), tie one cravat at the ankles, one just above the knees, one just below the knees, and one just below the hips. Do not tie a cravat over or too near the injury site.

O. Hip dislocations:
   a. Anterior hip dislocation: delayed is rotated overly (laterally) farther than the uninjured side. Leg rotation may also be an indication of a hip fracture.
   b. Posterior hip dislocation (most common): The leg is rotated inward (medially) and the knee is usually bent.
   c. If you suspect a hip dislocation, wait for more advanced care to arrive.
   d. You can immobilize the injured leg by placing and securing pillows or folded blankets or towels around the injured leg, which will support the leg and provide comfort to the patient.

P. Injury to the upper leg:
   a. Consider the use of a rigid splint or a traction splint for injuries to the femur. Traction splints should be considered only for suspected isolated mid-shaft femur fractures when the injury does not involve the knee or the head/pelvis. They should also not be used if there are injuries to the lower leg or ankle.
   b. Alternatively use a long rigid splint that extends from the patient’s buttocks to past the foot. Use cravats to secure the splint. Usually splint or coat hanger to push the cravats under the patient’s trunk and legs at the natural void (lower back and knees). Do not place a tie over
the injury site, but instead place one time above and one time below the injury.

Q. Injury to the knee:
   a. Immobilize an injured knee in the position in which it was found. Do not attempt to reposition or straighten the injured knee.
   b. Rigid splinting is the most effective method to use for immobilization of an injured knee, but you can provide support to the leg and comfort to the patient with soft splints.
   c. Place and secure pillows or folded blankets around the knee, especially if it is found in the bent position. Do not reposition or move the patient’s leg to place or secure pillows or blankets.
   d. If the knee is found in the straight position, you can effectively immobilize with a blanket placed between both legs and secure the cravats just as you would for a femur fracture.
   e. To immobilize an injured knee in the straight position, secure a long splint behind the leg from the patient’s buttocks to beyond the foot.
   f. In cases where the patient’s leg will remain flexed at the knee, you may secure one or 2 shorter splints at an angle across the thigh and lower leg.

R. Injuries to the lower leg:
   a. Use rigid or soft splints
   b. A blanket rolled between the legs is an effective soft splint. Secure it with cravats.
   c. Immobilize the joint above (knee) and the joint below (ankle).
   d. If you use a rigid splint, you will need assistance. One person must maintain manual stabilization while the other applies the splint.
   e. Be sure to remember to check for distal circulation, sensation, and motor function before and after splinting.

S. Injury to the ankle or foot:
   a. Rigid splints may be used. Must extend from above the knee to beyond the foot.
   b. Soft splints probably the most comfortable.
   c. Immobilize it in the position found with a pillow or folded blanket.
   d. Secure the soft splint around the foot and ankle with several cravats or roller gauze and then elevate it by propping it on a blanket roll or pillow.
19.8.1 | Assess distal circulation, sensation, and motor function (CSM).

19.8.2 | Place rigid splint below the limb.

19.8.3 | Pad the voids.

19.8.4 | Secure the splint to the limb and recheck circulation, sensation, and motor function (CSM).
19.9.1 | Assess distal circulation, sensation, and motor function (CSM).

19.9.2 | Stabilize the knee above and below the injury site.

19.9.3 | Place the padded side of the splints next to the injured extremity. Note that they should be equal in length and extend 6–12 inches beyond the midthigh and midcalf.

19.9.4 | Secure splints at both ends, using cravats or similar material.

19.9.5 | Using a figure-eight configuration, secure one cravat to the ankle and the boards and the second cravat to the thigh and the boards. Reassess distal circulation, sensation, and motor function (CSM).
19.10.1 | Access circulation, sensation, and motor function (CSM) prior to splinting the extremity.

19.10.2 | Choose a splint that extends from the heel to well above the knee.

19.10.3 | Secure the splint above and below the knee and at the ankle.

19.10.4 | Reassess circulation, sensation, and motor function after the splint is secure.

Figure 19.21
Immobilization of the lower leg using a towel.
24- HEAT-RELATED INJURIES
Reviewed and approved: 2018

ASSESSMENT

A. ABC’s (See: 01 - General Supportive Care Protocol, pg.7)

B. Initial Assessment
   (1) Body temperature
   (2) Skin
      (a) Hot and dry?
      (b) Hot and moist?
      (c) Cool and clammy?
   (3) Level of consciousness
   (4) Vitals

TREATMENT - Type of Heat-related injury:

A. Heat Cramps
   (1) Causes: Hot weather, prolonged sun exposure, strenuous exercise
   (2) Symptoms: Muscle cramps (common to legs and abdomen)
   (3) Treatment:
      (a) Move patient to cool surroundings, out of sun
      (b) If patient is conscious and able to swallow, and wishes to self-administer fluids provide oral fluids. DO NOT give salt tablets or any form of salt. Do not give anything by mouth if patient is nauseated or does not have an intact gag reflex.

B. Heat Exhaustion
   (1) Symptoms: moist clammy skin (mild to moderate preparation), weakness/dizziness, headaches, nausea and vomiting, fainting, normal or subnormal temperature, skin color may be normal to pale, muscle cramps (usually in legs), rapid weak pulse, rapid shallow breathing, altered mental status (extreme cases).
   (2) Give patient oxygen as indicated in the general supportive care protocol in preparation for the arrival of the advanced life support ambulance.
      (a) Take appropriate BSI precautions
      (b) Move patient out of sun, or hot area.
      (c) ABC’s per: 01 - General Supportive Care Protocol, pg.7
      (d) Loosen all clothing.
      (e) Cool patient as rapidly as possible with rotating wrapped ice packs to the chest wall, neck, armpits, and groin. Also, mist with cold water and use fanning to promote evaporative cooling.
      (f) Monitor patient’s vitals and level of consciousness. Note any changes.
      (g) Treat Seizures per protocol, pg. 122.
C. **Heat Stroke**

(1) Symptoms: hot, rapid shallow breathing, weakness, altered mental status, skin may be dry or moist, rapid pulse, nausea, vomiting, convulsions. This is the most serious heat-related injury.

(2) Give patient oxygen as indicated in the general supportive care protocol in preparation for the arrival of the advanced life support ambulance.
   (a) Move patient out of sun, or hot area.
   (b) ABC’s per General Supportive Care Protocol, pg.7
   (c) Loosen all clothing or remove excess clothing.
   (d) Cool patient as rapidly as possible with rotating wrapped ice packs to the chest wall, neck, armpits, and groin. Also, mist with cold water and use fanning to promote evaporative cooling.
   (e) Monitor patient’s vitals and level of consciousness. Note any changes.
   (f) Treat Seizures per protocol, pg. 122.
   (g) Place patient in a recovery position

(3) Patient will need to be transported to hospital.

**REPORT**
   A. Report to crew as indicated in general supportive care protocols.
25- IMPALED OBJECTS
Reviewed and approved: 2018

1. See: 01 - General Supportive Care Protocol, pg. 7.

2. Impaled objects in the head, neck, chest, abdomen, or extremities are NEVER to be removed.

3. Objects that obstruct the airway may be removed in order to provide adequate respiration or ventilation.

4. Take BSI precautions

5. Expose the wound, without disturbing the impaled object

6. Control bleeding.

7. Stabilize the impaled object by using bulky dressings. An alternative approach is to cut a hole in the center of a bulky dressing, making the cut slightly larger than the impaled object. Gently press the dressing over the object. Bandaging these dressings in place will improve stability.

8. Keep the patient at rest and provide care for shock

9. You may find adhesive tape does not stick to the skin around an impaled object wound site, due to blood and sweat. Cravats can be sued instead to tie the dressings in place. The cravats should be made from folded triangular bandages. Once folded, the cravats should be at least two inches wide. If the object is impaled in the chest or abdomen, a thin splint or coat hanger can be used to push the cravats under the small of the back so the cravat can be tied around the patient’s trunk.
26- MCI / MULTIPLE TRAUMA
Reviewed and approved: 2018

ASSESSMENT

A. Scene safety

B. Determine approximate number of patients and notify EMS immediately
   (1) If more than 6 patients, use START triage system see below and declare a
       Multiple Casualty Incident

C. Establish ICS (Incident Command System)
   (1) The first paramedic on the scene will become the scene director for EMS and
       others arriving later will follow his or her lead until a formal Incident
       Command System is in place.
   (2) The first arriving first responders may be dedicated to making the scene safe
       and keeping bystanders from getting injured. Other duties of the first
       responder on an MCI incident may include:
       • Assisting with triage of patients
       • Treatment of patients
       • Assisting with transporting of patients to appropriate facilities
       • Setting up a landing zone for medical helicopters

D. Note any hazards (chemical spills, downed power lines, etc.)

TREATMENT

A. ABC’s

B. START triage system (see below)

C. Perform a rapid, abbreviated full-body assessment in order to identify any major
   injuries.

D. If patient is severely injured, with systolic blood pressure < 100 mm hg in adults, or
   children with capillary refill time >2 seconds:
      • Airway with cervical spine control
      • Breathing
      • Circulation/perfusion with hemorrhage control
      • Disability determination (AVPU, motor, posturing)
      • Exposure

E. If extrication required, perform quickly with spinal motion restriction if indicated.

F. Transport to the treatment area on scene (after properly immobilized).
SPECIAL CONSIDERATIONS

1. Notify dispatch of the need for more help when the estimated number of injured can be determined.

2. Note any hazards (chemical spills, downed power lines, etc.)

3. In airplane crashes, be sure to leave a marker noting the position of the patient before removing them from the scene.

4. Establish triage area in safe location with easy access to arriving EMS units. Notify EMS dispatch of triage area and access points.

5. Establish staging area for “walking wounded” and ask all casualties capable of walking to go there tag as minor.

Triage and Tagging: the S.T.A.R.T. Method

START is an acronym for Simple Triage and Rapid Treatment, a method of triaging and treating patients that was developed in Newport Beach, California, in the early ‘80's. The START method has proved to be an excellent and rapid approach to triaging large numbers of patients, and only limited medical training is required to use the method effectively. Under the START concept, the first rescuers to a scene clear it of any walking wounded, simply with a verbal instruction to all mobile survivors that they should walk to a described location. These patients are then moved out of the wreckage area and told to stay put. Later, arriving rescuers will further assess these patients and treat any injuries. Survivors must always be thoroughly assessed when time and resources become available, as they may have hidden serious injuries. Once the walking wounded is out of the way, rescuers should continue their rapid triage. Patients will be triage tagged at the completion of each assessment. Each patient’s triage assessment should be completed in less than 60 seconds. The three areas to be assessed are ventilation, perfusion and pulses, and neurological.

First Assessment

Establish staging area for “walking wounded” and ask all casualties capable of walking go there tag as minor.

Second Assessment

The second assessment evaluates ventilation. If it is adequate, the rescuer goes to the next item. If ventilation is inadequate, basic attempts to clear the airway, such as debris removal or repositioning the head, will be taken. Depending on the results of these corrective actions, the patient is classified as one of the following:

* No respiratory effort: triaged as dead/non-salvageable
* Respiration above 30 or patient requires assistance maintaining airway: triaged as critical/immediate
* Respirations below 30: go to next assessment

Third Assessment

The third assessment evaluates perfusion. The rescuer should check the patient’s radial pulse. If it is detected, the patient most likely has a systolic blood pressure of 80 mmHg. (It should be noted that only the presence of a radial pulse is tested at this point. Pulse rates are not considered at this point.) Each patient falls into one of the following categories:
* No radial pulse: Triaged as critical/immediate
* Palpable radial pulse: go to next assessment

Fourth Assessment

The forth assessment evaluates the neurological status of the patient. Based on this assessment, the patient is placed in one of the following categories:
* Unconscious: critical/immediate
* Altered level of consciousness: critical/immediate
* Altered mental process: critical/immediate
* Normal mental responses: delayed
START TRIAGE
(Simple Triage and Rapid Treatment)

All Walking Wounded
MINOR

RESPIRATIONS

YES

Over 30/min
IMMEDIATE

Under 30/min

PERFUSION
Radial Pulse Present
Radial Pulse Absent
Capillary Refill

OVER 2 Seconds
Control Bleeding
IMMEDIATE

Under 2 Seconds

RESPIRATION

Position Airway

YES

IMMEDIATE

NO

DECEASED

PERFUSION

Respiration 30
Perfusion 2
Mental Status CAN DO

CONTROL BLEEDING

IMMEDIATE

MENTAL STATUS

Can’t Follow Simple Commands
IMMEDIATE

Can Follow Simple Commands
DELAYED

START Program developed by HOAG Memorial Hospital and Newport Beach Fire Dept.
It should be pointed out that the first assessment that produces a “critical/immediate” category stops further triage assessment of the remaining areas. The patient is tagged “critical/immediate” at that time. Only correction of life-threatening problems, such as airway blockage or severe hemorrhaging, would be undertaken before moving to the next patient.

The START process permits a few rescuers to very rapidly triage a large number of patients. Little specialized medical training is required to make these initial triage decisions. After patients are moved to the treatment area, paramedics can conduct more detailed assessments.

JUMP START TRIAGE

Children from 1 to 8 years of age. If patient looks like a young adult use START TRIAGE.

First Assessment

Establish staging area for “walking wounded” and ask all casualties capable of walking go there tag as minor.

Second Assessment

1. If there is breathing, assess the respiratory rate if less than 15 or faster than 45 tag immediate.
   a. open the airway of any patient not breathing.
   b. if breathing with an open airway, tag as immediate.
2. If not breathing after you open the airway.
   a. if no pulse tag as deceased.
   b. if a pulse is present ventilate five times
   c. if still no pulse tag as deceased.
   d. if breathing spontaneously tag as immediate.

Third Assessment

The third assessment evaluates perfusion. The rescuer should check the patient’s radial pulse. If it is detected, the patient most likely has a systolic blood pressure of 80 mmHg. (It should be noted that only the presence of a radial pulse is tested at this point. Pulse rates are not considered at this point.) Each patient falls into one of the following categories:

* No radial pulse: Triaged as critical/immediate
* Palpable radial pulse: go to next assessment

Fourth Assessment

The forth assessment evaluates the neurological status of the patient. Based on this assessment, the patient is placed in one of the following categories:
* Unconscious: critical/immediate
* Altered level of consciousness: critical/immediate
* Altered mental process: critical/immediate
* Normal mental responses: delayed
JUMP START Triage

Able to Walk?
- Yes → Minor → Perform → Secondary Triage*
- No → Breathing?

Breathing?
- No → Postion Upper Airway → Breathing → Immediate
  - Apneic → Palpable Pulse
    - No → Deceased
    - Yes → Apneic → Deceased
    - 5 Rescue Breaths → Breathing → Immediate

Respiratory Rate?
- <15 or >45 → Immediate
- 15-45
  - Palpable Pulse?
    - No → Immediate
    - Yes
      - AVPU
        - "P" (Inappropriate), Posturing or "U" → Immediate
        - "A", "V", or "P" (Appropriate) → Delayed

*Evaluate infants first in secondary triage using the entire JS algorithms
27- MCI/Domestic Terrorism (non-trauma)
Reviewed and approved: 2018

ASSESSMENT

A. Try to determine number of patients
   (1) If more than 6 pts, **notify EMS immediately.**

B. Scene safety is CRITICAL
   (1) First responders have frequently become the first casualties in
       previous cases of domestic terrorism
   (2) Liberal use of SCBA and HAZMAT protective clothing is
       recommended

C. Cause of MCI may not be immediately apparent

D. Chemical Weapons
   (1) Nerve Agents (Sarin)
       (a) Signs/Symptoms: Salivation, Tearing, Urination, Defecation,
           GI symptoms, loss of consciousness.
       (b) Patients nearest the point of release will usually be dead
           immediately
       (c) Means of delivery: Gas or liquid. Some agents can be toxic
           by contact with the skin. Others require inhalation. Gases are
           usually colorless and odorless
       (d) Treatment: Atropine (may need massive doses); 2PAM auto
           injectors.
   (2) Vescicants and Irritant gases (Mustard gas, chlorine, tear gas)
       (a) Signs/Symptoms: Coughing, wheezing, burning eyes and
           throat, frothy sputum, blistering of skin. Some symptoms may
           be delayed by hours or days.
       (b) Means of delivery: gas
       (c) Treatment: symptomatic

E. Biological Weapons
   (1) Infectious agents
       (a) Anthrax
           1. remains active as dry spores in form of white powder
           2. Signs/Symptoms -malaise, fever, fatigue, cough, chest
              pain
           3. Inhalation anthrax most dangerous
           4. Treatment: Antibiotics
       (b) Others (Influenza, Tularemia, Q fever, Small Pox, etc.)
   (2) Biological toxins
(a) Botulinum toxin
1. Neurotoxin which causes paralysis of muscles.
2. Derived from bacteria.
3. Not absorbed through skin.
4. High lethality if not given ventilatory support.
5. May need to be on ventilator for long time.

(b) Ricin
1. Toxin derived from castor beans
2. Very high lethality
3. Weakness, cough, respiratory distress and death from hypoxemia.

F. Radiological Weapons
(1) Nuclear weapons
(a) Nuclear explosion- Heat and Blast Pressure Injuries predominate.
   - Radioactive fallout causes later effects.
(b) Dirty bombs/Accidental Radioactive release.
   - Radioactivity kills fast growing cells (eg. Skin, blood tissues, GI)

(2) Signs and symptoms of Radiological Exposure
(a) Acute Radiation Syndrome (ARS)
   1. Early Transient Incapacitation: very high doses of radiation; temporary inability to perform physically or cognitively difficult tasks.
   2. Bone marrow suppression leads to risk of infection
   3. GI bleeding
   4. Permanent CNS effects

(b) Symptoms are dose dependent

(3) Protective clothing or lead barrier is only effective protection. Different types of ionizing radiation have different penetration capabilities but the first responders will not know what type of radiation risk there is.

(4) Treatment: Decontamination, fluid and cardiovascular support. High-dose exposures are 100% fatal.

TREATMENT

A. ABCs

B. Decontamination and personal protection
C. Early Notification of EMS
ASSESSMENT and TREATMENT:

Infants

Birth to One Year

• In your primary assessment, establish your general impression from a distance.
• Ensure an adequate airway. If needed, provide ventilations.
• Protect the head and spine.
• Control your emotions and facial expressions to help reduce the child's fear.
• Provide care to prevent shock. (A small amount of blood loss can cause shock.)

Establishing Responsiveness: The infant should move or cry when gently tapped or shaken. Is he/she alert, responsive to voice or to pain stimulus, or unresponsive?

Opening the Airway: Use slight head-tilt/chin-lift. (Use the jaw-thrust for possible spine injury.)

Evaluating Breathing: If the infant is responsive but cyanotic and struggling to breathe, or has inadequate breathing, assist ventilations and arrange for immediate transport. If the infant is unresponsive, check for a pulse. If there is no breathing and no pulse, begin CPR.

Rescue Breaths: If the infant has a pulse but is not breathing normally, ventilate once every three to five seconds while watching for chest rise and fall. Ventilate with the mouth-to-barrier technique, using an appropriate pediatric-size barrier, mask or a pediatric bag mask. If there is evidence of airway obstruction, clear the airway.

Clearing the Airway

• Make certain that you have not overextended or under-extended the neck. Place a folded towel under the shoulders to keep the head in a neutral position. If this does not open the airway, then:
• For a responsive child, place the infant over the length of your arm face down with the head lower than the trunk. Support the head with your hand placed around the jaw. Support your forearm by placing it on your thigh.
• Deliver five back blows between the shoulder blades with the heel of your free hand.
• Place your free arm on the infant's back and support the back of his head with that hand. Sandwich him between your arms and hands and turn him
• Support your arm on your thigh. Keep the head lower than the trunk and deliver five chest thrusts. If the airway remains obstructed, but the patient is responsive, continue back blows and chest thrusts.
• If the airway remains obstructed and the patient is unresponsive, open the mouth to look for an obstruction.
• Do not attempt blind finger sweeps. You must see the object before you sweep the mouth with your little finger.
• Even if you did not see or dislodge an obstruction, attempt to ventilate. If unable to ventilate, begin chest compressions. After 30 compressions, look for and remove visible obstructions, and attempt to ventilate again. Repeat sequence of compressions and ventilations until the object is removed or EMS arrives.

**Continuing Rescue Breathing**
• If patient is still not breathing but you gave two successful breaths, begin CPR.

**Performing CPR**
• If the patient is unresponsive and not breathing normally, assess for a pulse for no more than 10 seconds. If there is no obvious pulse, start compressions. For the infant, the compression site is one finger-width below an imaginary line drawn across the nipples. Compress with the tips of two or three fingers approximately one-third the depth of the chest at a rate of at least 100 per minute. For two rescuers, use overlapping or side-by-side thumbs and compress on the middle third of the sternum just below the nipple line. The remaining fingers encircle the chest and support the back.
• For a single rescuer, deliver two ventilations following each set of 30 compressions. For two rescuers, deliver two breaths every 15 compressions.

**Controlling Bleeding**
• Use direct pressure as a primary method to control bleeding.
• If bleeding is not controlled, use elevation combined with direct pressure. If bleeding is still not controlled, apply a tourniquet.
• A small amount of blood loss (25 milliliters) is serious. Care for shock.

**Children**

*One year to the onset of puberty*
• Perform a primary assessment, establish your general impression from a distance.
• Ensure an adequate airway. If needed, provide ventilations as you watch for the chest to rise.
• Protect the head and spine.
• Control your emotions and facial expressions to help reduce the child's fear.
• Evaluate blood loss. Provide care to prevent shock.
Establishing Responsiveness: The child should move or cry when gently tapped or shaken.

Opening the Airway: Use slight head-tilt/chin-lift or jaw-thrust maneuver, as appropriate.

Evaluating Breathing: If the child is responsive but cyanotic or struggling and failing to breathe, assist ventilations and arrange for immediate transport. If the child is in respiratory arrest, open the airway and provide rescue breaths.

Rescue Breaths: If the child has a pulse but is not breathing normally, ventilate once every three to five seconds while watching for chest rise and fall. Ventilate with the mouth-to-mask technique, using an appropriate pediatric-size mask or a pediatric bag mask.

Clearing the Airway
- Make certain that you have the proper head tilt for an unresponsive child. Place a folded towel under shoulders to keep the head in a neutral position. If this does not open the airway, then:
  - If the airway remains obstructed and the patient is responsive, perform abdominal thrusts.
  - If the airway remains obstructed and the child is unresponsive, begin CPR.
- Do not attempt blind finger sweeps. You must see the object before you sweep the mouth. Use your little finger.
- Even if you did not see or dislodge an obstruction, begin chest compressions. After 30 compressions, look for and remove visible obstructions and attempt to ventilate again. Repeat sequence of compressions and ventilations until the object is removed or EMS arrives.

Performing CPR
- If the patient is unresponsive and not breathing normally, assess for a pulse for no more than 10 seconds.
- Have someone call 911. If you are alone, do CPR for two minutes before calling.
- If there is no obvious pulse, start compressions. For the child, the compression site is on the center of the chest between the nipples. Compress with the heel of one hand approximately one-third the depth of the chest at a rate of at least 100 per minute. Deliver two ventilations every 30 compressions.

Controlling Bleeding
- Use direct pressure as a primary method to control bleeding.
- If bleeding is not controlled, use elevation combined with direct pressure. If bleeding is still not controlled, apply a tourniquet.
- A blood loss of one-half liter (about one pint) is serious. Care for shock.

SIDS (Sudden infant death syndrome)
A. Rescuers may withhold CPR if any of the following signs of obvious death are present. (EMS should be notified before withholding CPR; and Ambulance should NEVER be cancelled):
   (1) Obvious rigor mortis
   (2) Severe lividity
   (3) Early tissue breakdown / decomposition
   (4) Massive trauma
B. If there is ever any doubt about whether to resuscitate, the rescuer should start CPR immediately. If the rescuer feels that the patient’s family will not accept or tolerate withholding resuscitation, the rescuer should start CPR.
C. Note the condition of the child and the surroundings in which the child was found.
D. Obtain a brief medical history from the parents or guardians.
E. Use extreme tact and professionalism.

Secure the entire scene. Do not allow the removal of anything.
29- POISONING/OVERDOSE
Reviewed and approved: 2018

ASSESSMENT

H. ABC’s (See 01 - General Supportive Care Protocol, pg. 7)

I. Scene safety is paramount. Do not become exposed yourself

J. Determine substances ingested, inhaled, absorbed, or injected
   (1) Obtain container(s) if possible
   (2) Determine amount in container prior to current ingestion
   (3) Were other substances also ingested? Alcohol?
   (4) How poisoned (ingested, inhaled, injected, surface contamination)
   (5) Has patient vomited? If so, when?
   (6) Pre-existing medical problems

K. Determine approximate time of ingestion/inhalation/absorption/injection

L. Optional: Have dispatch call poison control 1-800-222-1222

M. Initial Assessment.
   1. Ingestion:
      i. burns or stains around the patient’s mouth
      ii. unusual breath orders, body odors, or odors on the patient’s clothing or at the scene
      iii. abnormal breathing
      iv. abnormal pulse rate and rhythm
      v. sweating
      vi. dilated or constricted pupils
      vii. excessive saliva formation or foaming at the mouth
      viii. burning in the mouth or throat or painful swallowing
      ix. abdominal pain
      x. upset stomach or nausea, vomiting, diarrhea
      xi. convulsions
      xii. altered mental status, including unresponsiveness
   2. Inhaled Poisons:
      i. Shortness of breath
      ii. Wheezing
      iii. Coughing
      iv. Pulse rate fast or slow
      v. Eyes appear irritated.
vi. May have excessive drooling

3. Absorbed (skin contact)
   i. Skin reactions, ranging from mild irritations to severe burns
   ii. Hives
   iii. Itching
   iv. Eye irritation
   v. Headache
   vi. Increased skin temperature

4. Injected poisons:
   i. Noticeable stings or bites to the skin (puncture wound)
   ii. Pain at or around the wound site
   iii. Itching
   iv. Weakness, dizziness, collapse
   v. Difficulty breathing and abnormal pulse rate
   vi. Headache
   vii. Nausea
   viii. Anaphylactic shock

**TREATMENT**

A. Assist ventilations if needed (as indicated in general supportive care protocol)
B. If poison control was contacted, follow their instructions to the best of your ability. Use caution with any instructions to give patient anything by mouth. Be sure patient can cooperate and swallow.
C. Treat for shock if indicated
   a. Elevate feet
   b. Keep warm
D. Vomiting: Keep suction at ready in case patient vomits. Position patient on his/her left side if needed to prevent aspiration. DO NOT induce vomiting. If possible, save some of the vomit for analysis at the hospital.
E. If Seizing:

   *Go to Seizure Protocol, pg. 123*

F. If inhaled poison:

   * Assure personal safety
   * Remove patient to fresh air
   * Administer 100% oxygen via non-rebreather mask at 15 LPM
   * If patient is awake and cooperative, let him/her assume a position of comfort for breathing.
G. If skin or eye contamination:

* Assure personal safety
* Decontaminate patient. If dry powder, dust off as much as possible first
* Remove contaminated clothing
* Irrigate with water or normal saline

H. If Bite or Sting:

* If sting involved: scrape away bee and wasp stingers and venom sacs. Do not pull out stingers. A plastic credit card works well as a scraper.
* Place a cold pack over the bitten or stung area.
* **IF SNAKE BITE:**
  □ Locate the fang marks and clean with soap and water
  □ Remove from the bitten extremity any rings, bracelets, and other constricting items.
  □ Keep the extremity immobilized at or below the level of the heart
  □ Provide care for shock, and monitor vital signs.

I. If systolic blood pressure < 90, and/or if respirations > 10 and/or >29 possible narcotic overdoses:

* Administer 100% oxygen via non-rebreather mask at 15 LPM
* Assist ventilations as needed

**REPORT** - Report to EMS crew

1. Information as indicated in general supportive care protocol.
2. Information regarding the substance(s) ingested and the approximate time of ingestion
3. If the known source of the poisoning is identified
30- SEIZURES
Reviewed and approved: 2018

ASSESSMENT
N. Assure ABC’s; see 01- General Supportive Care Protocol, pg. 7.
O. If family or friends present, ask if patient has history of seizures or is a diabetic or if there was recent ingestion/consumption/use of any drugs?
P. If child…any recent fever or illness? Any access to family member medications?
Q. Assess if there is any findings that might suggest trauma related cause of seizure?
R. Any evidence of toxic exposure?
S. Possible causes: Epilepsy, Ingestion of drugs, alcohol, or poisons, Alcohol withdrawal, brain tumors, infections (high fever), diabetic problems. Stroke, heat stroke, head injury
T. Possible findings:
   • Sudden loss of responsiveness
   • Pt may report bright light, bright colors, or sensation of strong odor
   • Convulsions
   • Loss of bladder and/or bowel control
   • Labored breathing and there may be frothing at the mouth
   • Pt may complain of headache prior to or following seizure
   • Following the seizure the patient’s body completely relaxes.

TREATMENT
A. Oxygen via;
   1. Non-rebreather mask at 15 LPM if unconscious.
   2. Nasal Cannula @ 2LPM if conscious
B. If actively seizing:
   1. Protect patient from injury.
      i. Remove objects from patient’s surroundings to prevent injury to arms and legs during seizure
   2. Do not attempt to force anything between the teeth.
   3. Suction PRN but do not cause trauma.
   4. Position patient on side if feasible to allow secretions to drain from mouth (recovery position)
   5. Place small padding (folded towel) under head to prevent head trauma while seizing
   6. Oxygen as above
B. If not actively seizing:
   1. Open airway and suction PRN
   2. Proceed with secondary survey
   3. Obtain history
4. Oxygen as above  

E. If recent seizure and patient is post-ictal:  
   1. Place in recovery position  
   2. Suction PRN  
   3. Oxygen as above 

F. If patient is a child, and actively seizing:  
   1. Protect patient from injury  
   2. Contact responding EMS unit  
   3. Is the patient febrile?  
   4. Cool the patient if febrile (remove clothing, blankets, etc.)  
   5. Oxygen as above 

**REPORTING**  
A. Information as indicated in 01 - General supportive Care Protocol, pg. 7.  
B. If patient has Hx of seizures, diabetes, recent drug use or suspicion of trauma.
31- Shortness of Breath
Reviewed and approved: 2018

ASSESSMENT:
A. Assure ABC’s; see 01- General Supportive Care Protocol, pg. 6.
B. Scene safety: be cautious of an exposure that may have triggered the shortness of breath.
C. Ask if patient has a history of Asthma or COPD?
D. Is patient on home oxygen? If so, is there oxygen in the tank and is the patient using the oxygen? Note he flow rate and notify EMS of how many liters/min of oxygen is being delivered.
E. Do not allow patient to smoke cigarettes
F. Find out if patient is on medication for breathing problems (steroids, inhalers, etc.) and have a list or the actual medication bottles available when EMS arrives
G. Was there an exposure that caused the shortness of breath?
   a. Remove patient from source to fresh air
H. If patient has an altered mental status, make sure there is nothing in the airway that caused the shortness of breath.

TREATMENT:
A. Remove patient from any hazardous exposure
B. If patient is mildly short of breath
   a. Allow to assume position of comfort
   b. Place on 2 liters of oxygen by nasal cannula
   c. Do not let anyone smoke around the patient
C. If patient is moderately to severely short of breath (unable to speak between breaths, using assessor muscles to help breath, sweaty)
   a. Place on 15 liters of oxygen by non-rebreather mask
   b. May help patient use their prescribed inhaler or nebulizer
D. If significant altered mental status
   a. Keep airway open with jaw thrust or chin lift (see Appendix B: Airway procedures).
   b. If breathing appears ineffective (cyanotic around lips and fingertips and not blowing much air with each breath), you may need to assist with a bag valve mask

REPORT:
A. How much oxygen the patient is on
B. If the patient is in severe distress or not
C. What medications has the patient taken for this episode
32- Tourniquet Protocol
Reviewed and approved: 2018

**Purpose:** This protocol is to be used by First Responders, EMTs or Paramedics to control life threatening hemorrhaging and prevent exsanguinations in situations where there is a serious injury to an extremity with severe bleeding and direct pressure fails to control the bleeding.

**Indications for tourniquet use:**
1. To stop bleeding when;
   a. Life-threatening limb hemorrhage is not controlled with direct pressure or other simple measures, as may occur with a mangled extremity.
   b. Traumatic amputation has occurred.

**Procedure:** Application of Combat Application Tourniquet (CAT)
1. Placement
   a. Expose the extremity by removing clothing in proximity to the injury.
   b. Place directly over exposed skin at least 5 cm proximal to the injury.
   c. Route the self-adhering band around the extremity.
   d. Pass the band through the outside slit of the buckle.
   e. Pull the self-adhering band tight.
   f. Twist the rod until bright red bleeding stops.
   g. Lock the rod in place with the clip.
   h. Record the date/time of application on the tourniquet.
2. Evaluation
   a. The tourniquet is effectively applied when there is cessation of bleeding from the injured extremity, indicating total occlusion of arterial blood flow.
   b. Any preexisting distal pulse should be absent at that time as well.
3. Tourniquet time and removal
   a. Tourniquets should be removed as soon as possible under conditions where the hemorrhage can be directly controlled.
   b. Tourniquet placement must be communicated in patient reports for all pre-hospital to hospital and inter-hospital transfers.
   c. Tourniquet time > 6 hours is associated with distal tissue loss

**Training:** Appropriate tourniquet use requires initial and annual renewal training with skill demonstration.
Instructions for Use: Two-handed Application

To prepare for use, store the C-A-T® in its one-handed configuration.

1. Apply tourniquet proximal to the bleeding site. Route the band around the limb and pass the tip through the outside slit of the buckle. Pull the band tight.

2. Pass the tip through the outside slit of the buckle. The friction buckle will lock the band in place.

3. Pull the band very tight and securely fasten the band back on itself.

4. Twist the rod until bright red bleeding has stopped and the distal pulse is eliminated.

5. Place the rod inside the clip; locking it in place. Check for bleeding and distal pulse. If bleeding is not controlled, consider additional tightening or applying a second tourniquet proximal side by side to the first and reassess.

6. Secure the rod inside the clip with the strap. Prepare the patient for transport and reassess. Record the time of application.
33- TRAUMA
Reviewed and approved: 2018

ASSESSMENT

A. Scene safety.
B. Determine mechanism of injury.
C. Perform rapid initial assessment to identify immediately life threatening injuries.
D. If multiple trauma patients, see Appendix F - MCI Protocol.
E. During the secondary assessment, remember DCAP-BTLS to help remember what to look for during the physical exam.
   - D Deformity
   - C Contusion
   - A Abrasions
   - P Puncture or penetration
   - B Burns
   - T Tenderness
   - L Lacerations
   - S Swelling

TREATMENT: ABC’s

A. ABC’s per 01 - General Supportive Care Protocol, pg. 6.
B. Maintain Cervical Immobilization if patient has numbness or tingling of extremities or has neck pain and has a mechanism that suggest a possible c-spine injury. (Utilize C-collar, CID, and backboard). See protocol 07 – Cervical/Spinal Injury (Spinal Immobilization), pg. 19
C. Control Bleeding. – Notify EMS immediately if unable to control bleeding or if Tourniquet placed.
   (1) Direct Pressure
   (2) Direct Pressure with Elevation
   (3) Pressure Point
   (4) Tourniquet (ONLY if all else fails) per 23- Tourniquet protocol, pg 50.
      Example of injury that may require a tourniquet:
      a. Amputation of an arm or leg.
      b. Deep laceration of the arm or leg with major arterial bleeding
      c. Open fracture of the arm or leg with major bleeding
D. Oxygen via non-rebreather mask at 15 LPM.
   - Assist ventilation with BVM as needed.
E. Assess vital signs. Notify EMS immediately for any of the following:
   (1) Systolic BP less than 90.
   (2) Heart rate more than 120.
   (3) Gunshot wounds or stab wounds to the chest or abdomen.
   (4) Unconscious patient.
   (5) Assisting ventilations.
   (6) Age less than 16 or greater than 55.
   (7) No pulse felt in any extremity.

F. Immobilize fractures or deformities
   (1) Attempt to splint in position found.
      a. Assess and document pulses, sensation, and motor function prior to placement of the splint. If no pulses are present and a fracture is suspected, consider single attempt at re-alignment of the fracture prior to placement of the splint.
      b. Remove all clothing and jewelry from the extremity.
      c. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed. In the case of suspected fracture the splint should immobilize the joint above and the joint below the injury whenever possible. If a joint is involved, the splint needs to immobilize the bone(s) above and the bone(s) below the injured joint.
      d. Do not secure the splint directly over the injury.
      e. Place the splint and secure with straps or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
      f. Document pulses, sensation, and motor function after placement of the splint. If there has been deterioration in any of these 3 parameters, remove the splint and reassess.
      g. Document the time, type of splint, and the pre and post assessment of
pulse, sensation, and motor function in the patient care report (PCR).

(3) Notify EMS immediately if any extremity does not have pulse.

(4) If you are called upon to assist EMS with applying a Hare Traction Splint or similar traction device and you have been trained/credentialed to do so, the following steps are key:
   a. Patient should be supine.
   b. Check distal circulation, sensation, and motion.
   c. Apply the ankle hitch tightly, slightly above the ankle bone. Begin and continue manual traction. Manual traction is only discontinued when mechanical traction has been applied. Assure that genitalia is clear of strap.
   d. Apply proximal strap (ischial) and secure tightly, but not so much that is cuts off circulation.
   e. Attaches ankle hitch to device and starts to apply mechanical traction.
      Snap out traction pole making sure that each joint of the pole is securely seated.
   f. Once adequate mechanical traction has been applied, use velcro straps attached to splint to secure patients leg to the device. Typically 1-2 straps above the knee and 1-2 straps below the knee. Do not place straps directly over the knee or the fracture site.
   g. Patient comfort will be the primary objective. Traction should be applied smoothly.
   h. Reassess distal circulation, sensation, and motion. 9. Secure to long spine board, scoop, etc.

E. Reassess vital signs every 2 - 5 minutes.

F. If time, perform secondary survey and obtain further history:
   - Include SAMPLE per 01- General Supportive Care Protocol, pg.6.

SPECIAL CONSIDERATIONS Obvious death (Signal 7):

A. Resuscitation may be withheld in the following trauma cases only if EMS agrees:
   1. No pulse or respiratory effort
      AND
   1. Massive head trauma
   2. Decapitation
   3. Obvious non-survivable massive trauma.

B. All other trauma patients (even in cardiac arrest) must get full resuscitative efforts.

C. Notify EMS immediately of possible signal 7. The ALS unit must continue to the scene to confirm signal 7 even if resuscitation is withheld.

D. If any doubt, proceed with resuscitation.

REPORT - Obtain the following information. Report to the crew on their arrival unless otherwise indicated in the protocol. Report any above critical information via radio.

A. Name/Age
B. Mechanism of injury and time of injury.
C. List major/obvious injuries.
D. Level of consciousness on arrival and prior to arrival.
E. Vital signs.
F. Treatment rendered.
   (1) Bleeding control.
   (2) Tourniquet.
   (3) Splinting or repositioning.
APPENDIX A

UNIVERSAL PRECAUTIONS AND EXPOSURE TO BODY FLUIDS
Reviewed and approved: 2018

BACKGROUND

These guidelines are intended to prevent or minimize exposure to the transmission of bloodborne infectious diseases, particularly HIV, viral hepatitis, tuberculosis and meningitis to first responders whose duties put them at risk. All emergency medical services organizations should ensure full implementation of universal precautions and body substance isolation (BSI) techniques, and require immunization of all employees who are identified as being at risk.

PROCEDURE:

Personal Protective Equipment (PPE)

PPE is designed to stop the transmission chain of an infectious agent by preventing potentially infectious microorganisms from contaminating a Provider's skin, mucous membrane, or clothing, and subsequently being transmitted to others. While PPE reduces the risk, it does not completely eliminate the possibility of infection, and is only effective if chosen and used correctly. Remember, PPE should always be readily available, not just carried in the vehicle for those “surprise” circumstances where the possibility of exposure exists. There are instances that the selection of appropriate PPE should be obvious and regarded by all Providers as standard practice. These include:

☐ Anytime patient contact is made, gloves are to be worn.

☐ During any type of airway management procedure, or other situation that fluid splash contact with the Provider’s face is a possibility, the protection of mucous membrane is crucial. Effective mucous membrane protection may be afforded by use of the combination eye shield and mask apparatus, or N95 mask in conjunction with department issued or approved eyewear (goggles).

☐ Whenever the possibility exists that a patient’s bodily fluids could be splashed onto a Provider, gowns should be utilized.

☐ When multiple patients are encountered, remove current pair of gloves and replace with a fresh pair.

☐ When picking up a piece of equipment, visually inspect gloves for contaminants and replace if contaminants are present.

There are times when the selection of proper PPE, especially respiratory protection, is not so obvious and must be made based on how a disease is spread. In these situations, the difficulty in determining the appropriate level of protection
is that a truly informed decision usually can’t be made until a patient assessment is completed and/or a history is obtained. By then, it’s too late! For that reason, a patient exhibiting any of the following signs or symptoms should be a signal to Providers, that in addition to gloves and, possibly a gown, some level of respiratory protection is required:

- Productive cough (with or without blood)
- Fever and chills with coughing
- Night sweats
- Dramatic (>10%) unexplained weight loss
- Fatigue (in the presence of other symptoms)
- Hemoptysis (coughing up blood)
- Nuchal rigidity (stiff neck)
- Chest and upper torso rash

In determining the type of respiratory protection needed, remember that only the N95 mask will afford protection against disease spread via airborne particles (i.e., tuberculosis), while the combination eye shield and mask apparatus is appropriate protection against disease spread through larger droplets (i.e., meningitis). In either case, protection is only afforded if the mask is worn properly.

- For a patient exhibiting signs and/or symptoms of a disease spread via airborne particles, the N95 mask should be donned prior to entering an enclosed area that the patient may have contaminated
- When caring for a patient with signs and symptoms of a disease spread through larger droplets, the N95 mask or combination eye shield and mask should be donned as soon as possible, and worn anytime the Provider is within six (6) feet of the patient.
- When airborne or droplet precautions are appropriate, the additional step of placing a non-rebreather mask with supplemental oxygen on the patient should be employed. This will limit the amount of aerosolized agent emitted.
- Provide surgical masks to all patients with symptoms of a respiratory illness who can tolerate its placement. Provide instructions on the proper use and disposal of masks.
- For patients who cannot wear a surgical mask in addition to any medical treatment being provided, provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them, and the importance of hand hygiene after handling these materials.
- Continue to use droplet precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond standard precautions.
• When in doubt, maximal rather than minimal PPE should be selected.

**Sharps Hazards**

• The greatest risk for an occupational exposure to blood occurs with the use of needles and other sharp utensils. The most common occupational blood exposure occurs when needles are recapped. Needles that have contact with human tissue should not be recapped, re-sheathed, bent, broken, or separated from disposable syringes.

• Used needles and other sharps shall be disposed of in approved sharps containers.

• Providers should ensure that no sharp is used in a manner inconsistent with its intended purpose or attempt to circumvent the safety features of the device.

**If Exposure Occurs:**

The purpose of PPE, and always using sound infection Prevention practices, is to reduce or eliminate the potential for infection. On occasion, a Provider is exposed to blood, bodily fluids, or airborne particles, and appropriate action must be taken. Many of these actions are time dependent so it’s important to initiate the reporting and follow up process as soon as possible. Besides adherence to sound infection Prevention practices, the most important thing you can do to ensure your health and well-being is to educate yourself. Become knowledgeable about infectious diseases, and the exposure reporting and follow-up process for your organization. Knowledge of the process specific to your organization ensures the right people are notified in a timely manner should post-exposure testing, follow-up, and documentation be required. Following are general guidelines to be followed should you experience, or suspect that you have experienced, an exposure to blood or other infectious material:

1. If you believe you've been exposed ('exposure') to a patient;
   A. Immediately stop exposure, protect yourself.
   B. Cleanse the exposure site ASAP with disinfectant soap and water.
   C. Report the incident to your Immediate Supervisor and or Medical Control for guidance.
   D. Document the incident on an incident form

2. NEEDLE STICKS
   A. Immediately wash the area with soap and water or alcohol-based skin sanitizer.
   B. Notify your chain-of-command immediately.
   C. Note the following information:
      1) Type of injury (was it a needle, knife, glass).
      2) Was needle or blade contaminated with blood?
      3) Did it break the skin or make you bleed?
      4) Patient’s name, if known.
      5) Destination of patient.
D. Complete needle stick protocol at ER of choice. (Note: it may be preferable to go to the same ER as the patient since that may facilitate the timely testing of the source patient.)
E. Follow all department procedures regarding body fluid exposure.
F. Remember the importance of follow-up after the initial ER visit.

3. EYE SPLASH/MOUTH SPLASH
   A. Rinse eyes with eye wash or cool water.
   B. Rinse mouth with water.
   C. Note the following information:
      a. Type of fluid splashed.
      b. Patient’s name, if known.
      c. Patient’s destination.
   D. Notify chain of command immediately.
   E. Complete appropriate reports.
   F. Go to ER for evaluation as directed by your supervisor or department policy.

4. SKIN SPLASH
   A. Wash skin with soap and water or alcohol-based skin sanitizer.
   B. If skin intact, no further treatment or evaluation required.

**Exposure Follow-up**

Exposures require immediate intervention. Report any suspected exposure to communicable diseases to the appropriate designated individual in your department as quickly as possible. Questions and consultation regarding post exposure actions should be immediately directed to the County Health Department, your personal physician, or the CDC (Centers for Disease Control) at www.cdc.gov Consultation may reveal that medical evaluation of the exposure, testing, follow-up, and/or additional documentation is necessary. In the case of a blood exposure due to needle stick (or other sharps), spray to mucous membrane, or patient blood contacting non-intact skin, the Provider should immediately travel, or be transported to, the closest appropriate facility for evaluation.

**Engineering and Work Practice Controls**

1. Hand Washing - All personnel who perform a task where there is a risk of exposure to blood or body fluids shall wash their hands as soon as feasible, after removing Personal Protective Equipment (gloves, mask/shield, etc.). When it is not feasible to wash hands, personnel are to use antiseptic hand cleaner. Hands should be washed with warm water and soap at the earliest convenience.
2. Eating/Grooming-Personnel shall not eat, drink, smoke, apply cosmetics or lip balm, or handle contact lenses until hands are washed. Even though hands are washed following patient contact, personnel shall also wash their hands following cleaning of the emergency vehicle and its equipment.
3. Sharps Handling- Needles or any other types of sharps shall not be bent, sheared, or recapped. All sharps shall be placed in the appropriate sharps container provided in the work area. The containers shall be kept in all patient care areas, or in "kits" that carry portable equipment that is intended to provide this procedure at the location of the patient. Sharps shall be disposed of according to the GRMC's procedures.

4. Restricted Activity in the Work Area-No eating, drinking, smoking, applying cosmetics, or handling of contact lenses will be permitted in potentially contaminated or designated dirty utility areas.

5. Transport of Contaminates - All blood samples, avulsed, amputated or expelled tissue removed and transported to a hospital will be placed in a container and appropriately labeled. The container must be leak-proof, puncture-resistant, and sealed to prevent spillage.

SPECIAL CONSIDERATIONS/NOTES/PRECAUTIONS:

Cleaning and Disinfection of Equipment and Work Areas

Remember how important it is to keep all medical equipment clean and free from infectious agents. The essential part of cleaning and disinfecting equipment is ensuring the removal of all accumulated organic material. Failure to remove organic material provides a continuing breeding ground for organisms. After the removal of the organic material, disinfecting can take place. When cleaning equipment or unit, use a bleach water mixture (or equivalent) with at least 1:10 concentration (bleach: water). For cleansing of suspected TB infected equipment, one should use a 1:1 mixture. Be thorough with your cleaning and consider using your PPE eyewear if you need to do heavy cleaning that may result in splashing. Remember to clean any surface that your gloved hand may have contacted. After applying your disinfectant, permit the equipment to air dry. Wiping dry the wet disinfected surface will negate the effects of the agent and render it useless. Upon completion of the cleaning, make sure you wash your hands.
APPENDIX B
AIRWAY PROCEDURES
Reviewed and approved: 2018

A. Head Tilt/Chin Lift
   a. INDICATIONS
      i. Unconscious or otherwise unable to support airway.
   b. CONTRAINDICATIONS
      i. Suspected C-spine trauma
   c. PROCEDURE
      i. Tilt head back
         ii. Use fingers to gently lift chin

B. Jaw Thrust
   a. INDICATIONS
      i. Unconscious or otherwise unable to support airway.
         ii. Suspected C-spine trauma
   b. CONTRAINDICATIONS
      i. None
   c. PROCEDURE

Head Tilt–Chin Lift

- Kneel beside patient’s head.
- Place one hand on forehead.
- Apply backward pressure.
- Place tips of finger under lower jaw.
- Lift chin.
i. Rest hands on cheeks
ii. Put fingers behind angle of jaw on both sides and lift jaw forward.

C. Oral Airway
   a. INDICATIONS
      i. Unconscious and unable to support airway.
   b. CONTRAINDICATIONS
      i. Gag reflex present
         ii. Airway foreign body
   c. PROCEDURE
      i. Pick proper size. May use the distance from lips to ear lobe.
      ii. Use tongue depressor to lift tongue and slide the airway into place
         OR
         Insert the airway upside down until it reaches the soft palate and rotate the airway into place.
         If patient coughs or gags, remove the airway immediately.
D. Nasal Airway
   a. INDICATIONS
      i. Unable to support airway (may be used in conscious patient)
   b. CONTRAINDICATIONS
      i. Facial Trauma
   c. PROCEDURE
      i. Pick the nare which seems largest
      ii. Use water-soluble gel (Like KY) to lubricate tube
      iii. Pick diameter tube which looks like it is the largest that will fit. Size of
            the patient’s pinky finger is a good approximation.
      iv. Insert the tube straight back (not up) gently. If meets resistance, stop.
E. KING Airway – May be used only with training and Medical Director Certification.
   a. PROCEDURE-
      i. Dr. Landry must approve training and check off of Skills
Skill 23-5 King Airway Placement

1. Grasp tongue and jaw, lifting toward ceiling. Place tip of tube toward oropharynx, approaching from the patient’s right.

2. Rotate the airway counterclockwise as it is advanced.

3. Advance until the orogastric port is at the level of the teeth.

4. Inflate balloon, bag-ventilate the patient, and auscultate breath sounds.

5. Slowly withdraw while listening until breath sounds are the loudest.

6. Confirm placement and secure airway.
F. Bag-Valve-Mask:
   a. INDICATIONS:
      i. Patient is not breathing or is in severe respiratory distress.
   b. CONTRAINDICATIONS:
      i. None
   c. PROCEDURE:
      i. Use proper size Bag-Valve-Mask to help ventilate patients who are not breathing (adult, child, and infant).
      ii. Connect the oxygen tubing to an oxygen tank and turn the flow meter all the way up in order to inflate the reservoir bag on the BVM.
      iii. Select the proper size mask with inflated rim to ensure secure fit over mouth and nose.
      iv. Best performed if two persons working together. One holds the mask firmly to patient’s face (over face and nose) and the second squeezes the bag.
Appendix C:
Mass Casualty Treatment & Transportation Guidelines
Reviewed and approved: 2018

**Purpose:**

This plan is designed to assist emergency medical personnel with managing multiple patient incidents. The goal is to provide the best possible care for the most patients in a timely and efficient manner. It is understood that each situation is unique, and EMS providers are encouraged to always make decisions that are in the best interest of patient care.

EMS providers will continually face challenges in these instances when they are forced to make split-second choices, under adverse conditions with limited resources. It is the goal of each multiple patient incident that all patients be transported to the appropriate hospital as quickly as possible. The primary focus should be to eliminate any situations that cause an increase of the ambulance on-scene time.

**Plan Overview:**

During all incidents in which there are 10 or more significantly injured or ill patients involved, the use of the incident command system and triage tags will be utilized. This includes but is not limited to both medical and traumatic events. It is the responsibility of the first arriving paramedic to establish the incident command system. The primary focus of this EMS provider is to provide scene management.

**General Principals:**

1. Regardless of the number of patients or number of vehicles involved, an initial scene size up will be reported to EMS dispatch by the first arriving ambulance.
   
   For example: “920 on location, two cars involved head-on with major damage, appears to be 6 patients”

2. This entire plan shall be used for all incidents which involve 10 or more patients.

3. Clear and effective communication shall be provided to EMS dispatch, hospitals, first responders and other on-scene agencies.

4. Early notification of the extent and nature of the incident shall be provided to EMS dispatch as soon as possible.

5. The first arriving paramedic shall function as the incident medical commander until relieved of duty. He or she may relinquish this responsibility upon arrival of additional EMS personnel. It will be at the discretion of the Regional Director to assume control upon arrival at the scene.

6. The 2nd provider on the first arriving ambulance shall be responsible for performing primary triage.

7. EMS dispatch will notify the EMS incident commander via radio after each 10 minutes of elapsed time.
   
   For example: “930 you are 10 minutes into the incident,” & “930 you are 20 minutes into the incident” etc...
Mass Casualty Treatment & Transportation Guidelines

Initial Scene Size-Up: Upon arrival of the first ambulance at any motor vehicle accident or multiple patient incidents, a brief size up will be given to EMS dispatch. At this time request any additional resources you will need and be specific.

1. Establish Command: The first arriving lead paramedic will assume control as the medical incident commander until a Supervisor or Regional Director arrives and Command can be transferred. Give your name and then Communications will give you a Command Title (e.g.: I-20 Command, Mall Command, Hwy 79 Command).

2. Obtain Report: The medical incident commander will immediately make contact and receive a report from any on-scene first responders. Every attempt should be made to contact with the on-scene commander. If there is not one present then your unit becomes the Command Post until other responders arrive.

3. TAC Channel: ASK Communications for a TAC channel if needed. They will assign one to you that they know is clear.

4. Primary Triage: The second person on the first in unit, EMT or Paramedic, shall perform triage in a timely and organized manner. No time consuming treatments should be provided during this process that delays or hinders the treatment and/or transportation of other patients. Triage tags will be applied to each patient.

5. Inform EMS Dispatch: The medical incident commander will then give a report to EMS dispatch indicating the total number of patients and initial triage results.
   For example: “920 has a total of 6 patients, 3 green, 1 yellow and 2 red”

6. Hospital Contact: The EMS dispatcher will contact the appropriate hospital(s) to notify them as to the extent and number of patients. Hospital capacities will be relayed back to the medical incident commander by EMS dispatch.

7. Resource Management: The medical incident commander is responsible for notifying incoming EMS units. They should at a minimum advice responding ambulances as to the number and severity of patients that they will be treating/transporting.

8. Transport & Treatment: As a general rule, treatment on scene should be limited to immobilization, airway management and controlling external hemorrhages.

9. Vehicle Assignment: The medical incident commander should be the last one to transport any patient. However, consideration should be given to utilizing his or her ambulance for transport should the situation dictate. It is permissible to split-crews in order to facilitate a more efficient method for treating/transporting patients.

10. Hospital Reports: Each ambulance will notify the receiving hospital with detailed patient as soon as possible after leaving the scene.
Mass Casualty Treatment & Transportation Guidelines

MEDICAL COMMAND

- The first paramedic on scene will serve as the Medical Commander (MC). The MC will be part of a UNIFIED Command System.
- This person should serve in this capacity until Command is transferred to a Supervisor or Regional Director or for the duration of EMS’ role at the event.
- The MC is responsible for managing the medical branch of the incident.
- MC must provide a brief report to the Communications Center. This report should include:
  1. Who the medical commander is
  2. Location of medical command
  3. An approximate number of victims
  4. What resources are needed and be specific: “I need four additional ambulances, fire, rescue and 2 helicopters”. Stay away from phrases like “send me everything you got”.
  5. Staging assignments for inbound units SPECIAL NOTE: If you are staging units due to a specific threat or terrorism incident, DO NOT place all units in one staging area, this makes them a target. Place units several staging areas and only two units maximum in each area.
  6. Have Communications get a Hospital Capability count of how many patients surrounding hospitals can handle that are Immediate (Red tag), Delayed (Yellow tag), or Walking Wounded (Green tag). Enter the number on the sheet and make sure Transportation sends the appropriate number of patients in accordance to what they can handle.
  7. Inbound crew assignments
     - The MC must assure that:
       1. An organized triage process is established
       2. The packaging & collection of patients is being carried out
       3. Essential on-scene treatment of patients is being done
       4. Needed supplies are provided to those treating patients. If the situation is large, the MC will notify Communications to have Make Ready put supplies in the designated van and transport added supplies to the scene.
       5. The transportation of patients is being done in an expeditious manner & with appropriate hospital distribution.
     - One of the earliest duties of the MC should be to assure that all vehicles unneeded immediately are staged. This is especially true if the incident is hampered by limited roadway & space for vehicles. The MC must do what’s necessary to assure that incoming ambulances are NOT prevented access to and from the scene.
     - The MC must consider pt. evacuation by helicopter and the staff necessary to set up a landing zone(s) assuming the weather is suitable. A transportation officer may be designated and, if so, should be given responsibility for all areas of medical transportation including air support.
     - If available, an MC ICS vest must be worn.
Mass Casualty Treatment & Transportation Guidelines

1. TRIAGE

- Officer does not have to be a paramedic.
- The TO has the responsibility of seeing that
  1. An approximate number of victims is estimated
  2. A suitable location for triage is established
  3. The collection & triaging of victims is carried out
  4. Disaster tags are used
  5. Patients are prioritized and placed in rows with the highest priority pts. positioned nearest to the loading area
- Triage and treatment can be carried out at the same sector if the number of victims is not overwhelming for one sector. The TO should request (of the MC) that a separate treatment sector be established if necessary.
- If a Triage Officer ICS vest is available, it must be worn.
- The Triage Sector should be positioned as close as possible to the incident ground as possible but with adequate distance from known or potential hazards. The TO and MC must stay within visual and audible range of each other.
- The ITLS patient assessment sequence is the recommended triage assessment sequence. This is a common triage assessment sequence taught by ETMC-EMS and well known to ETMC-EMS’ Paramedic staff. If triage staff are unfamiliar with the BTLS sequence, then the preferred technique is to be a simple LOC-ABC approach.
- Patient collection: Triage, treatment, and loading require the collection of patients to a common area. During collection, it must be decided if the victims can be managed in one location or separate sectors must be established (the number of victims and available space decide this). A key problem with collection is gathering enough backboards and appropriate litter devices. All available boards and collars, including those from first responder agencies, should be utilized. Once collected, the TO and other available personnel must see that all patients are being cared for and that triaging is repeated frequently. Patients in the triage ground should be placed in priority rows so that all ‘immediates’ are first to be moved to treatment, and then positioned in treatment so that they, again, are first to be moved out (this time to the loading area).
- Factors weighing into the decision for the location of a collection area should include:
  1. From what direction incoming units will most likely be coming
  2. In what direction outgoing units will most likely be going
  3. What nearby surface is clean, flat, free-from-hazards (upwind and uphill if hazardous materials are present), and well-lit (if possible), and not too close to the Landing Zone.
  4. The proximity of the location to the patients’ current location.
Mass Casualty Treatment & Transportation Guidelines

2. TREATMENT SECTOR

- If possible, triage and treatment should be done in the same location. However, if casualty numbers are overwhelming, a separate treatment sector should be established (between triage and the ambulance loading area).
- The MC should appoint a Paramedic to be the Treatment Officer. This officer’s primary duties are to:
  1. Prioritize pts. (sort and place in priority rows with the highest priority patients positioned nearest to the loading area)
  2. Assure that essential pt. care is provided
  3. Re-triage on a Q5 min basis (minimum).
- If a Treatment Officer ICS vest is available, it must be worn.
- Most Paramedics on incoming units should be assigned to this sector to provide treatment. Then, each will follow through with loading and transportation, continuing care en route.
- The Treatment Officer and MC should stay within visual and audible range of each other (if at all possible).

When placing patients in a Treatment Area put them to where there is an aisle between stretchers and also where they are “head to head” with an ample aisle. This way you can assess them easier by talking to 4 patients at one time, and the aisle between the stretchers would enable secondary assessments as well as any treatment needed without having to step over anyone.

3. SAFETY OFFICER

Command will assign a Safety Officer early in the incident. This may be a dual role for Triage Officer to also oversee safety concerns. This person will be monitoring the situation and if he/she sees anything hazardous or where employees are not using safety devices such as goggles, gloves, masks (if needed) the Safety Officer can shut down any part or all of the medical operation of the incident until the unsafe actions are corrected. This person answers directly to Medical Command.
If the Safety Officer vest is available it must be worn.

SUPPLY SECTOR

Description & Responsibilities

- If needed (large event) the Medical Commander should establish a supply sector and a non-Paramedic might be placed in charge as the Supply Officer. The Treatment Officer may request that this sector be established.
- The Supply Sector Officer’s primary responsibilities are:
  1. Gather supplies from incoming EMS units (and/or first response units)
  2. Organize them adequately
  3. Dispense them to Paramedics in the Treatment Sector. Oxygen delivery and litter devices are usually the most critical supplies needed at an MCI.
  4. If more supplies are needed, especially when units leaving the scene retrieve their items such as monitors, etc. The Supply Officer will make a request through Command for additional needs.
If a Supply Officer ICS vest is available, it must be worn. The Supply Officer and Treatment Officer should stay within visual and audible range of each other.

4. TRANSPORTATION

- Transportation issues include (1) staging (2) off-loading of supplies and (3) pt. loading.
- In a large event, someone should be assigned the role of Transportation Officer. His or her job is to coordinate the above transportation needs which include air transportation.
- This sector officer should be stationed near (or with) the MC unless directed otherwise. He/she must keep the MC informed on transportation needs and the status of transportation vehicles.
- A Staging Officer is also recommended for large-scale MCI’s and, if assigned, would coordinate the staging of emergency vehicles (this officer would likely report to the Incident Commander).
- The transportation officer will log patients leaving on the Transportation Flow Sheet logging the date, tag number, name (if known, if not known leave blank, DO NOT put “John Doe”), severity, hospital assignment, EMS agency transporting and the time the patient left.
- If the name is left blank, it can be filled in later when the name is known.
- Transportation (or Command) will keep up with the Hospital Capability Sheet. In the left column will be the total number patients the hospital will be able to handle and the right column will be those transported. The right column will be “hash marks”. As patients are transported a hash mark will be place to keep a running total of those transported to each facility.

5. COMMUNICATIONS

- It is likely that EMS units responding a disaster scene will be asked to switch to a common alternate channel, which will allow the primary dispatch channels to remain free of traffic. EMS Communication staff will advise units which channel(s) to utilize.
- Radio communications are unique when dealing with large disasters. In contrast to daily EMS work, EMS units have a very limited communications role at disasters. Units reporting to a disaster scene should first follow the orders they are given while enroute. These orders may include where to stage initially, where each of the crewmembers should report to, whether the driver should stay with the unit at the staging area until called to load, etc.
- While on-scene, personnel assigned to a sector should communicate only with their sector officer. Sector officers will communicate with each other. The Medical Commander should communicate to the Incident Commander.
Mass Casualty Treatment & Transportation Guidelines

- When transporting patients to hospitals, individual EMS units will not be making detailed reports on their patients (unless requested). Someone from Medical Command (Transportation Officer or Communications Officer) will notify the receiving hospital instead and will simply provide the priority level of the patients. A more detailed face-to-face report can be given to medical staff when arriving at the hospital.

- Units arriving and reporting to the incident will be given the TAC Channel designated by Communications and will receive their assigned by the MC after checking in via radio. SPECIAL NOTE: This protocol is for ETMC/EMS communications only. If there is another EMS agency responding and/or if there is a need to communicate with other agencies (which there usually is) then an INTEROPERABILITY CHANNEL needs to be assigned. This is usually a Fire Channel such as a VTAC channel on the high band radio.

6. STAGING

- The Staging Sector can be done by a First Responder if needed. There is no need to tie up a Paramedic or EMT for this task. The only equipment needed is a clip board and a radio. If the Medical Commander is to have units stage then the following should be used as a guide.
  - Stage units to where any one of them can leave if needed. Do not park units too close together so if one breaks down or the driver cannot be found then all units behind it are stuck or have a problem in getting out.
  - Log units being staged with Company/Department name, capability, vehicle number, and the time the unit enters and the time the unit leaves.
  - Make sure units are idling, do not let the driver shut it down.
  - Units should be staged according to category. Ambulances should be staged according to skill, ALS units together, BLS units together, and Fire apparatus should be staged according to capability, Engine companies together, Rescue Units together, etc.
  - Normally the driver of the unit stays with the unit until needed or released. Keep in mind that sometimes this is not possible. If the emergency is of a large scale and all hands are needed for patient collection, treatment, rescue, etc., the units will be parked (and running) and the drivers will be helping out elsewhere. If they are needed, contact Command.
  - Have a law enforcement officer present for security if the Staging area has several units in the area to deter theft.
  - If you are given an order by MC to maintain a certain number of units in Staging and they leave for an assignment, call MC to let them know to where they can order up more to respond, or with the MC’s permission you may contact Communications to send what is needed to keep your assigned level.
  - SPECIAL NOTE: If you are in a situation where a threat has been received or at a suspected/confirmed terrorist incident, DO NOT put all your units in one place. This is considered a prime target if a group (or lone wolf) wants to target first responders. Stage about two units per staging are in different places.
This detail can be handed off to a First Responder in a Fire Department if they have had the “Landing Zone” class by an aero-medical provider. Usually during scene calls it is the Fire Department who sets up the landing zone and communicates with any inbound air units. If EMS does have to set up a landing zone, keep in mind:

- The area should be at least 75’X75’ day and 100’X100’ night.
- For night landings have the LZ illuminated by headlights (NO spotlights) and are prepared to turn lights off as the helicopter approaches. This way you won’t interfere with the aircrew’s night vision capabilities.
- Have ONE person as the LZ Coordinator and this person will be the only one talking to the aircraft(s).
- Air to ground frequency is on the VHF radio and is on channel VFIRE-23 which is normally used for all scene operations statewide. This is a fire ground interoperability channel.
- The zone should be in an area that is free from debris, flying dirt, and where the “rotor wash” won’t affect patients or responders.
- Watch for wires, trees, or any other obstructions and report them to the flight crew.
- If multiple helicopters are inbound, have Communications notify the flight crews so they can communicate together on a common aircraft frequency they use regularly so one will not interfere with the landing/taking off of others.
- Maintain a “rear rotor guard”, someone to insure that no one approaches the helicopter from the rear and only approaches from the side.

7. DISASTER TAGS

- Each EMS unit carries 25 disaster tags. Tags currently in use by ETMC-EMS are the SMART Triage tags. These tags must be taken out of the units and carried with the Paramedic so that they may be utilized in the Triage and Treatment sectors. Even with the use of a SMART tag, triage priorities should be kept simple – and that is to prioritize patients as either “immediate” (red or yellow) or “delayed” (green). Victims that are dead-at-the-scene (confirmed) will be tagged
Addendum D:  
Vital Sign Parameters: 
Reviewed and 
approved: 2018 

To ensure consistency in the assessment and treatment of patients that may be suffering 
circulatory system problems, the following definitions will apply: 

Tachycardia  
Resting heart rate greater than 100 bpm in adults 

Bradycardia  
Resting heart rate less than 50 bpm in adults.  
A child’s heart rate should be evaluated based on age and condition. The heart rate of an 
anxious, sick, or injured child should be rapid. A heart rate less than 60 bpm coupled with signs 
of poor perfusion in children <8 years of age is an ominous sign. 

Hypertension  
Consistent resting blood pressure greater than or equal to 140/90 mmHg in adults 

Hypotension  
Consistent resting blood pressure (less than) < 90/60 mmHg (or Systolic BP < 90mmHg) in 
adults with associated signs and symptoms of hypoperfusion. 

The goal in treating patients suffering from non-compressible bleeding is to maintain a systolic 
BP of 80 mmHg. This is referred to as permissive hypotension. 

Hyperglycemic  
Blood Glucose level of > 300 mg/dl. 

Hypoglycemic  
Blood Glucose level of < 50 mg/dl. 

<table>
<thead>
<tr>
<th>Pediatric Patient Vital Signs by Age</th>
<th>Heart Rate (beats/min)</th>
<th>Blood Pressure (mm Hg)</th>
<th>Respiratory Rate (breaths/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature</td>
<td>120-170</td>
<td>55-75/35-45</td>
<td>40-70</td>
</tr>
<tr>
<td>0-3 mo</td>
<td>100-150</td>
<td>65-85/45-55</td>
<td>35-55</td>
</tr>
<tr>
<td>3-6 mo</td>
<td>90-120</td>
<td>70-90/50-65</td>
<td>30-45</td>
</tr>
<tr>
<td>6-12 mo</td>
<td>80-120</td>
<td>80-100/55-65</td>
<td>25-40</td>
</tr>
<tr>
<td>1-3 yr</td>
<td>70-110</td>
<td>90-105/55-70</td>
<td>20-30</td>
</tr>
<tr>
<td>3-6 yr</td>
<td>65-110</td>
<td>95-110/60-75</td>
<td>20-25</td>
</tr>
<tr>
<td>6-12 yr</td>
<td>60-95</td>
<td>100-120/60-75</td>
<td>14-22</td>
</tr>
<tr>
<td>12 &gt; yr</td>
<td>55-85</td>
<td>110-135/65-85</td>
<td>12-18</td>
</tr>
</tbody>
</table>
Addendum E:
Minimum Equipment List
Reviewed and approved: 2018

Minimum Equipment List - First Responders

**Airway Adjuncts**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPA (sizes 26-28-30-32-34 F)</td>
<td>1 of each</td>
</tr>
<tr>
<td>OPA (sizes 40-50-60-70-80-90-100 mm)</td>
<td>1 of each</td>
</tr>
<tr>
<td>Water soluble lubricating jelly</td>
<td>2</td>
</tr>
</tbody>
</table>

**Portable Oxygen Delivery System**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel or aluminum oxygen bottle</td>
<td>1</td>
</tr>
<tr>
<td>Cylinder pressure gauge</td>
<td>1</td>
</tr>
<tr>
<td>Adjustable liter flow meter minimum – 15 Lpm</td>
<td>1</td>
</tr>
<tr>
<td>Oxygen cylinder wrench</td>
<td>1</td>
</tr>
<tr>
<td>Nasal cannula</td>
<td>2</td>
</tr>
<tr>
<td>Non-rebreathing mask</td>
<td>2</td>
</tr>
<tr>
<td>Pediatric Non rebreather</td>
<td>1</td>
</tr>
<tr>
<td>Infant face mask</td>
<td>1</td>
</tr>
</tbody>
</table>

**Bandages, Dressings and Splinting**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band-aids</td>
<td>5</td>
</tr>
<tr>
<td>Sterile 4x4s</td>
<td>5</td>
</tr>
<tr>
<td>Non-sterile 4x4s</td>
<td>25</td>
</tr>
<tr>
<td>Ice Packs</td>
<td>3</td>
</tr>
<tr>
<td>Trauma dressing</td>
<td>1</td>
</tr>
<tr>
<td>Occlusive dressing</td>
<td>1</td>
</tr>
<tr>
<td>Triangular bandages</td>
<td>3</td>
</tr>
<tr>
<td>Self-adhering gauze bandages (Kerlex or acceptable equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Adhesive tape (should be hypoallergenic/latex free when available)</td>
<td>1 roll</td>
</tr>
<tr>
<td>Padded Short Board Splint and/or SAM® Splint</td>
<td>1</td>
</tr>
<tr>
<td>Padded Medium Board Splint and/or SAM® Splint</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Padded Long Board Splint and/or SAM® Splint</td>
</tr>
<tr>
<td>1</td>
<td>Commercially Designed Tourniquet</td>
</tr>
</tbody>
</table>
## Minimum Equipment List First Responders

### Spinal Motion Restriction (per Organization)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long Back Board with straps</td>
</tr>
<tr>
<td>1</td>
<td>Adjustable Adult C-Collar or X-collar®</td>
</tr>
<tr>
<td>1</td>
<td>Adjustable Pedi C-Collar or X-collar®</td>
</tr>
<tr>
<td>1 set</td>
<td>Head Blocks if not using X-collar®</td>
</tr>
<tr>
<td>1</td>
<td>KED or Short Spine board device</td>
</tr>
</tbody>
</table>

### Sterile (Saline Solution or Water) for irrigation

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimum volume amount – 500 mL (two 250 mL bags or bottles)</td>
</tr>
</tbody>
</table>

### Miscellaneous Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adult Sized Blood Pressure Cuff – (Infant and thigh cuffs optional)</td>
</tr>
<tr>
<td>1</td>
<td>Adult Sized Stethoscope – (Pediatric optional)</td>
</tr>
<tr>
<td>1</td>
<td>Pen light or flashlight type device</td>
</tr>
<tr>
<td>1</td>
<td>Heavy-duty bandage scissors or paramedic shears</td>
</tr>
</tbody>
</table>

### Personal Protective Equipment (latex-free equipment should be available)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Protective eye wear (goggles, full-peripheral glasses, or face masks)</td>
</tr>
<tr>
<td>1</td>
<td>Protective face mask/shield</td>
</tr>
<tr>
<td>1</td>
<td>HEPA TB or NIOSH N 95 facemask</td>
</tr>
<tr>
<td>3 pair</td>
<td>Exam gloves (latex free preferred)</td>
</tr>
<tr>
<td>1</td>
<td>Disinfectant hand wash</td>
</tr>
<tr>
<td>2</td>
<td>Simple “surgical type” face masks for patient use</td>
</tr>
</tbody>
</table>

### AED Device-1 (per Organization)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adult Pads</td>
</tr>
<tr>
<td>1</td>
<td>Pedi Pads</td>
</tr>
</tbody>
</table>
**Minimum Equipment List First Responders**

**One of the following devices for delivery of artificial ventilation in adult/pediatric patients**

<table>
<thead>
<tr>
<th>1 each</th>
<th>System approved BVM with delivery volumes sufficient for adult and child/infant patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Ventilation bags should be self-refilling without a pop-off valve</td>
</tr>
<tr>
<td></td>
<td>• Child and adult bags are suitable for supporting adequate tidal volumes</td>
</tr>
<tr>
<td></td>
<td>for the entire pediatric age range</td>
</tr>
<tr>
<td></td>
<td>o Child (up to 450 mL reservoir)</td>
</tr>
<tr>
<td></td>
<td>o Adult (at least 1,000 mL reservoir)</td>
</tr>
</tbody>
</table>

| 1      | Reservoir bag or enrichment tube with oxygen tubing appropriate for each BVM         |
| 1      | Clear face mask of adult and child/infant sizes                                      |

**-OR-**

| 1      | Pocket /Face Mask or Face Shield                                                    |
|        | • With or without one-way valve and oxygen inlet                                     |

**Portable suction device**

| 1      | V-VAC or Portable Suction Device                                                   |
| 1      | Rigid Suction Catheter                                                              |
| 1 each | Suction Tubing appropriate for equipment used                                        |
| 1      | Canister appropriate for equipment used                                             |

**Glucometer and Kit including:**

| 5      | Glucose clinical Test strips                                                        |
| 1 each | Calibration and check test strips                                                  |
| 1 bottle| Test control solution and instructions                                             |
| 2      | Disposable and retractable safety lock lancet                                      |
| 2      | Alcohol prep pads                                                                  |
| 2      | Band-aids                                                                          |

**Medications:**

| 1 tube | Oral glucose                                                                       |
| 1 bottle| Baby aspirin (81 mg)                                                              |
Minimum Equipment List First Responders

Optional Equipment/Medications That May Be Stocked

<table>
<thead>
<tr>
<th>Pulse Oximeter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-disposable probe</td>
</tr>
<tr>
<td>1 each</td>
<td>Disposable probes adult and pediatric</td>
</tr>
</tbody>
</table>
Principles of Moving Patients:
A. Body Mechanics:
   a. Estimate the weight of the patient and if extra help is needed
   b. Clearly communicate with your partner and with the patient when you are ready to lift and continue to communicate throughout the process.
   c. When ready to lift, follow the rules of proper body mechanics to minimize the chances of injury to yourself, your partner, and the patient.
      i. Position your feet properly: should be on a firm, level surface and a comfortable width apart
      ii. Lift with your legs. Keep your back straight as possible and bend your knees. Try not to bend at the waist any more than is absolutely necessary.
      iii. When lifting with one hand, avoid leaning to the other side. Bend your knees and keep your back straight.
      iv. Minimize twisting during a lift.
      v. Keep the weight as close to your body as possible.
      vi. When carrying a patient on stairways, use a chair or stair chair whenever possible. Keep your back straight and let your legs do the lifting. If you are walking backwards down stairs, have someone “spot” you, by walking behind you and placing a hand on your back to help guide and steady you.
B. When to move a patient?
   a. Should only move a patient when:
      i. Absolutely necessary such as the presence of a dangerous environment that puts the patient and rescuers at risk for injury or harm.
      ii. Unable to adequately assess the airway, breathing, and circulation or bleeding.
      iii. Unable to gain access other patients who need life-saving care.
   b. When requested by EMS to extricate and load patient into the ambulance.

Emergency Moves: Offers little protection to the patient’s injuries. Sometimes the need to move a patient to ensure his/her safety or provide lifesaving care outweighs the risks associated with moving the patient quickly.
A. Drags:
   a. Clothing drag
   b. Blanket drag
   c. Shoulder drag
d. Firefighters drag

e. Strap drag

Note: Always pull in the direction of the long axis of patient's body. Do not pull a patient sideways. Avoid bending or twisting the patient's trunk.
Standard Moves:

A. Preferred choice when situation is not urgent, the patient is stable, and you have adequate time and personnel for the move

B. Following rules apply for a standard move:
   a. Complete a primary assessment
   b. Choose appropriate number of rescuers for the specific type of move.
   c. Avoid compromising a possible neck or spine injury
   d. Consider splinting suspected fractures

C. Examples of patients in which a standard move may be appropriate:
   a. Patient uncomfortable or position is aggravating an injury
   b. Emergency care requires moving the patient: extreme heat or cold, reaching a water source for washing in case of serious chemical burns, etc.
   c. Patient insist on being moved

D. Types:
   a. Firefighter carry (Fig 5.2)
   b. Direct ground lift (Fig 5.3)
   c. Extremity lift (Fig 5.4)
   d. Direct carry method (Fig 5.5)
5.3.1 | Position your arms under the patient. Be sure to cradle the head.

5.3.2 | Lift the patient to your knees and roll toward your chest.

5.3.3 | On signal, move the patient to the carrying device.

5.4.1 | To get the patient into a sitting position, one rescuer pushes from behind while the other pulls from the wrists.

5.4.2 | The rescuer at the head places arms under patient’s armpits and grasps patient’s wrists. While facing the patient, the rescuer at the feet grasps patient’s legs behind the knees.

5.4.3 | You can now carry the patient a short distance or place her on a stretcher or chair.
5.5.1 Stretcher is placed at 90-degree angle to bed, depending on room configuration. Prepare stretcher by lowering rails, unbuckling straps, and removing other items. Both Emergency Medical Responders stand between stretcher and bed, facing patient.

5.5.2 Position your arms under the patient and slide the patient to the edge of the bed.

5.5.3 Lift the patient and curl her toward your chests.

5.5.4 Rotate and place the patient gently on the carrying device.
Recovery Position:

A. Kneel beside the patient on his/her left side. Raise the patient’s left arm straight out above his/her head.
B. Cross the patient’s right arm over his/her chest, placing his/her right hand next to the left cheek.
C. Raise the right knee until it is completely flexed.
D. Place your right hand on the patient’s right shoulder and your left hand on the patient’s flexed right knee. Using the flexed knee as a lever, pull toward you, guiding the patient’s torso in a smooth rolling motion onto his/her left side. The patient’s head will rest on his/her left arm.
E. As best as you can, position the patient’s right elbow and knee on the floor so that they act like a kickstand, preventing the patient from rolling completely onto his/her stomach. Place the patient’s right hand under the side of his/her face. The arm will support the patient in this position. The hand will cushion his/her face and allow the head to angle slightly downward for airway drainage.
F. Always position yourself to manage the patient’s airway and monitor his/her mental status.
5.9.1 | Move the closest hand of the patient above his head.

5.9.2 | Move the patient's far hand across to the opposite shoulder, next to the patient's cheek.

5.9.3 | Bring the patient's far leg to the flexed position.

5.9.4 | Using the knee and shoulder, carefully pull the patient onto his side.

5.9.5 | Adjust the knee and shoulder to stabilize the patient. Then recheck the patient's ABCs.

5.9.6 | Once properly positioned, the knee and elbow will support the patient.
Log Rolling Patient:

A. One rescuer should kneel at the top of the patients head and hold or stabilize the head and neck
B. A 2nd rescuer should kneel at the patient’s side opposite the direction the head is facing. Quickly assess the patient’s arms to ensure there are no obvious injuries. Raise and extend the patient’s arm that is opposite the direction the head is facing. Position that arm straight up above the head. This allows for easy rolling and provides support for the head during the roll.
C. Third rescuer should kneel at the patient’s hips.
D. Rescuers should grasp the patient’s shoulders, hips, knees and ankles. If only one rescuer available to roll the patient, grasp the shoulders and hips.
E. Rescuer at the patient’s head should signal and give directions: “On three, slowly roll. One, two, three, roll together”. All rescuers should slowly roll the patient toward the rescuers in a coordinated move, keeping the spine in a
Appendix G
Helmet Removal
Reviewed and approved: 2018

Principle of Helmet Removal:

- Helmet should be removed immediately if there are any issues with ABCs, such as an airway obstruction or inadequate breathing.
- For football players who are wearing shoulder pads, the helmet left in place keeps the cervical spine and a midline position. Removing the helmet but keeping the shoulder pads in place causes the head to fall back in an overextended position, which pulls the spinal column out of alignment.
- If the helmet has a face guard or face shield, remove it to gain access to the patient’s airway.
- If a patient who is not breathing is wearing a helmet with a face guard or face shield that cannot be removed, remove the helmet to gain access to the airway.
- If a helmet is removed, it must be done cautiously and by 2 people.
- Procedure for helmet removal:
  - Remove the face piece or face shield while your partner stabilizes the head. Do not cut the chin strap. Remove glasses or goggles.
  - Check to see if the patient is breathing.
  - If the patient is breathing, check the helmet for fit. A well-fitting helmet can stay in place as long as the patient is breathing.
  - If you must clear the airway or assist the patient with breathing, first remove the face shield to gain access to the airway. If the face shield cannot be removed from the helmet, remove the helmet. If the patient is wearing shoulder pads (such as football pads), these should be removed simultaneously with the helmet. Athletic trainers should be on hand to guide and take the lead in removing football helmets and shoulder pads. If for whatever reason you are unable to remove the shoulder pads, and the helmet is removed, place a similar amount of padding under the head.
  - When you find any helmeted patient face down or on one side, log roll him or her onto their back.
- Steps:
  - Rescuer one will kneel at the head of the patient and stabilize the patient’s head by placing his hands on each side of the helmet.
  - Rescuer 2 will kneel on one side of the patient at the patient’s shoulders, unfasten the chinstrap, remove the face guard or face shield (if not yet done), and remove the patient’s glasses or goggles if present.
  - Rescuer 2 will place one hand on either side of the neck at the base of the skull and stabilize the head while rescuer 1 removes the helmet.
o Rescuer one will pull the sides of the helmet apart using the straps and slowly and carefully slip the helmet off the patient’s head.

o Rescuer 2 will slowly slide his hands along the sides of the patient’s head and neck to support it as the helmet is removed.

o Rescuer 1 will finish removing the helmet (and shoulder pads), place padding under the patient’s head as needed (if patient is wearing shoulder pads that cannot be removed), and then place his/her hands on either side of the patient’s head to take over in-line stabilization.

o Rescuer 2 will check and clear the airway, provide ventilations with supplemental oxygen, and apply a collar.
20.8.1 | Rescuer 1: Kneel at the head of the patient. Stabilize the patient's head.

20.8.2 | Rescuer 2: Kneel at the side of the patient's shoulders. Unfasten the chin strap. Remove the face guard, face shield, goggles, or glasses if present.

20.8.3 | Rescuer 2: Place one hand on the mandible at the angle of the jaw and the other hand behind the neck at the base of the skull to stabilize the patient's head.

20.8.4 | Rescuer 1: Pull sides of helmet apart and carefully slip helmet halfway off.

20.8.5 | Rescuer 2: Maintain position of hand stabilizing the jaw. Reposition at the back of the neck slightly higher on the back of the head to maintain in-line stabilization.

20.8.6 | Rescuer 1: Finish removing the helmet and then place hands on either side of the patient's head to take over in-line stabilization.

20.8.7 | Rescuer 2: Check and clear airway, provide ventilations, and apply a collar.
20.9.1 | Apply steady stabilization to the neck in neutral position.

20.9.2 | Remove the chin strap.

20.9.3 | Remove helmet by pulling the sides apart (laterally).

20.9.4 | Apply a suitable cervical-spine immobilization collar and secure the patient to a long board.
Appendix H
Helicopter Safety

Patient/Scene Preparation
Landing zone
1. Locate a level, 100 x 100 area clear of obstacles (i.e., wires, trees)
2. Mark landing zone with a marker at each corner and one upwind.
3. Public Safety vehicles should leave on flashers to assist in identifying site from the air.
4. Identify obstacles close to the landing zone and communicate all pertinent information about the landing zone to the flight crew.
5. Landing zone personnel will communicate by radio with the flight crew. As the helicopter enters your airspace it is imperative to establish communications. Ideally, this will be a predetermined radio channel. Radio communications may mean a direct channel or information relayed through dispatch.
6. The optimal departure angle for a helicopter is an 8:1 ratio. This means that a 10-foot obstacle should be 80 feet from the LZ with its 100 foot diameter. A 20-foot obstacle, 160 ft. away, and so on.
7. The site should be free from overhead wires and all dirt, sand and gravel sites should be avoided unless it can be wet down before landing. Watch for debris and anything not secure or able to be tied down.
8. Landing zone lighting is usually solved by vehicles or handheld spotlights positioned in an "X" pattern centered on the LZ. Pilots vary in their preference for keeping lights on during final decent, and will often use their own landing lights regardless.
9. A simple radio request for "LZ landing lights off" by the pilot will clear this up quickly; be prepared to turn off all illumination.
10. During final descent, the downward motion of the helicopter is signaled by a change of pitch in the rotation of the blades. They are not slowing down, simply changing blade angle as they descend.

Safety
1. Under no circumstances should the helicopter be approached unless signaled to do so by the pilot or flight crew.
2. Always approach the helicopter from the front. Under no circumstances should the helicopter be approached from the rear due to the extreme danger of the tail rotor.
3. Loading and unloading of the patient is done at the direction of the flight crew.
4. Crews should crouch down when in the vicinity of the main rotor blades.
5. Never shine a light at the aircraft  
6. If on a slope, never approach the aircraft from the uphill side  
7. Always remove your hat before approaching the aircraft.

**LZ Coordinator Responsibilities**

1. Command and secure the LZ  
2. Establish radio contact with aircraft  
3. Assist pilot in locating the LZ  
4. Keep all bystanders 100' away from the LZ  
5. Keep everyone away from the tail rotor  
6. Contact pilot after landing to determine any safety issues
APPENDIX I
AUTO PULSE PROCEDURES (not a required piece of equipment)
Reviewed and approved: 2018

AUTOPULSE- *NOTE* someone who is familiar with the device must accompany the EMS crew to the hospital.

I. INDICATIONS:
   A. Adult patient in NON TRAUMATIC Cardiopulmonary arrest.

II. CONTRAINDICATIONS:
   A. Pediatric patients (less than 18 years of age).
   B. Patient with traumatic injury, e.g. wounds resulting from sudden physical injury or violence.
   C. Persons whose weight exceeds 300 lbs or 136 kg.
   D. Persons in whom manual CPR would be inappropriate, e.g. a patient with an open sterna wound.

III. TECHNIQUE:
   A. Establish unresponsiveness.
   
   B. Open airway, check for breathing and initiate CPR.
   
   C. While manual compressions are being performed by another provider, prepare the AutoPulse for use.
      1. Remove AutoPulse from the Transporter or carry case and lay flat.
      2. Lift the LifeBand all the way up in order to center the internal motor’s drive shaft.
      3. Press the recessed ON/OFF button at the top of the platform to power up the AutoPulse.
      4. Wait briefly while the AutoPulse performs self-tests. Make sure no User Advisory, Fault, or System Error messages display.
      5. Place the platform at the head of the patient, using its visual cues for orientation, with the LifeBand open and out to the sides, so that the platform is ready to quickly slide in place under the patient.
   
   D. If not already performed, place the Combi-Pad electrode pads on the patient. Orient the defibrillator cables to the foot of the bed so that it does not interfere with application of the Device. Perform a quick rhythm check and shock if indicated per protocol. This action should ideally be performed by another person while the AutoPulse is being positioned.
   
   E. Suspend manual compressions, and quickly place the AutoPulse on the patient.
1. Sit patient up and remove all clothing from back and torso, if not already completed.
2. While the patient is in a sitting position, slide the AutoPulse platform into position underneath, and then lay patient back down onto it.
3. Remove any clothing from the patient front torso.
4. Position the patient so that he/she is centered laterally and that the armpits are aligned with the yellow lines on either side of the platform.

F. Close the LifeBand around the patient’s chest.
   1. Place band #1 on top of patient’s chest.
   2. Guide the mating slot of band #2 over the yellow plate of band #1.
   3. Press the bands together to secure the Velcro® Fastener.
   4. If bands cannot be closed, the patient is too large to fit the bands. Remove the AutoPulse and continue with manual compressions.

G. Ensure that the LifeBand is ready to use.
   1. Lift the secured LifeBand all the way up again and then center it back to the patient’s chest.
   2. Make sure that the bands and at a 90 degree angle to the platform.
   3. Make sure the bands are not twisted.
   4. Make sure there are no obstructions to the bands.

H. Press and release the CONTINUE button (green) once. The AutoPulse automatically adjusts the bands to the patient’s chest and determines the appropriate force required to deliver optimal compressions for the particular patient. Do not touch the patient while the AutoPulse is analyzing the patient’s size. If the patient’s chest size is too large or small, a User Advisory will appear on the LCD screen. If the size is not appropriate for use of the AutoPulse, remove it and resume manual compressions.

I. Upon visual cue on the screen, verify that the patient is aligned properly and that the LifeBand has taken up any slack in the bands.
   1. Ensure that the yellow line at the top of the LifeBand chest bands is aligned with the yellow lines on the platform, which are aligned with the patient’s armpits, and that the yellow guide plate is vertical with the sternum.
   2. If the patient is not properly aligned, press the REALIGN button and correct the patient position, then push the START button.
   3. If the AutoPulse is able to operate in a 30:2 compression: ventilation ratio mode, compressions will immediately begin in 3 seconds. To begin compressions immediately press the START button again.

J. Check the mode to ensure that it is appropriately set to 30:2 if noninvasive ventilations are being performed, or continuous if patient has been intubated. To change the setting, push the MENU/Mode (gray) button once, then a second time to confirm the change. A single tone will sound to confirm that the mode change has been accepted.

K. If the device has been set to 30:2, provide 2 ventilations after hearing 3 audible tones on the 28th, 29th, and 30th compressions. If the device has been set to continuous, an audio
cue for ventilation will sound 8 times per minute. Positive Pressure ventilation can be performed synchronous with any decompression. Check for patient’s chest rise during ventilation.

L. Evaluate the patient’s perfusion while the AutoPulse is in operation, using assessment of oxygen saturation (SpO₂), end tidal CO₂ (EtCO₂), color, blood pressure, and presence of pulse.

M. If compressions must be interrupted, press the STOP (Orange) button. The tension on the LifeBand is released so that the provider can pull the bands out to their maximum extended position in order to access the patient. Restart the AutoPulse by pushing the green CONTINUE button as directed above in section 9.b and 9.c.

**Always minimize any interruptions to compressions with the AutoPulse.** While the AutoPulse is paused, it will beep periodically, with increasing frequency, as a reminder that there is no flow of blood. Reasons for interrupting compressions might include determining the ECG rhythm, assessing for spontaneous pulse, defibrillation, and external pacing. Compressions should be delivered while charging the defibrillator. The endotracheal tube can be slipped through the vocal cords while the AutoPulse is paused for ventilation.

N. Place a towel or pad under the patient’s head on the AutoPulse platform as needed for if bobbing of the head occurs.

O. When a “Low Battery” warning is indicted by a tone and screen message (typically after 25 minutes of operation), quickly change the battery:
   1. Push the STOP button.
   2. Press the ON/OFF.
   3. Remove the used battery.
   4. Insert the fully-charged battery.
   5. Press the ON/OFF button and continue with the steps as outlined above.

P. If the patient must be moved while the AutoPulse is operating, use a sheet or blanket to smoothly transfer the patient on the AutoPulse platform. Restraints may be used to maintain alignment on the platform.

Q. If there is any problem when using the AutoPulse, press the STOP button and perform troubleshooting steps.
   1. Lift up and fully extend both LifeBand bands.
   2. Check both lateral and vertical patient alignment.
   3. Verify that the bands are not twisted, and that they are aligned to 90 degrees to the platform.
   4. Check that the vents on the platform are not obstructed.
5. Press START button (green) and follow on screen instructions to begin compressions.
6. If problem is not immediately corrected, open chest bands and revert to manual compressions.

R. When the AutoPulse is no longer needed:
1. Press the QUIT button followed by the ON/OFF button.
2. Open the Velcro® fastener and remove using the reverse manner in which the LifeBand needs to be used again soon for this patient.
3. Lift or log roll the patient off from the AutoPulse platform.

IV. SPECIAL NOTES:

A. Data Collection: For each patient should include:
   1. Time AutoPulse is turned on.
   2. Time AutoPulse is turned off.
   3. Initial rhythm at time of arrest.
   4. Whether witnessed or not.
   5. Whether bystander CPR was performed.
   6. Total compressions, active time, and pause time from AutoPulse.

B. Problems to be reported during AutoPulse use:
   1. Problems with device operation.
   2. Patient complications related to use of the device.
   3. Deficiencies in provider competency when using device.

V. COMPLICATIONS:
   • Always minimize any interruptions to compressions when using the AutoPulse.
   • Do not place or position patient on the device in either a face down orientation or on the patient’s side. Deployment of AutoPulse should not postpone initiation of manual compressions.
   • Check that the patient is correctly aligned on the AutoPulse platform and that the LifeBand Load-distributing Band (LBD) is correctly positioned and the patient’s armpit; otherwise injury may result. Check alignment prior to turning on the device, periodically during use, after moving the patient to a different surface, and frequently during transport.
   • Press the STOP/CANCEL button prior to realigning patient.
   • Do not place any straps or restraints across (or otherwise constrain) the LifeBand during active operation.
   • Do not use the AutoPulse platform alone to carry a patient. Instead secure the device platform to the top of a backboard or other carrying device used to carry or transport the patient.
   • If a System Error occurs during active operation, immediately revert to manual compressions or CPR.
   • Do not touch the patient while the AutoPulse platform is analyzing the patient’s size.
- Check vents during operation to ensure that they are not obstructed by sheets or patient clothing.
- Do not place hands under LifeBand while the AutoPulse is analyzing the patient’s size or during active operation.
- Use of the AutoPulse for a prolonged period of time may result in minor skin irritation to the patient. With large patient, check the skin at the sides under the LifeBand.
- Do not use a LifeBand if it has any apparent cuts or tears.
- Ensure that the battery is securely latched (Snaps into place) before moving the AutoPulse or initiating chest compressions.
- When inserting the battery into the AutoPulse platform or the charger, do not slam it into position but rather slide in carefully so that the connectors are not damaged; ensure that the battery locks into place.
- Do not remove a battery from the Battery Charger during the Test Cycle.