PATIENT ASSESSMENT

LEARNING OBJECTIVE:

Assess emergency medical conditions in both tactical and non-tactical environments.

GENERAL IMPRESSION

A simultaneous or global overview of the status of the patient's respiratory, circulatory, and neurologic systems to identify obvious significant external problems with oxygenation, circulation, hemorrhage or gross deformities. Within 15-30 seconds, the pre-hospital care provider has gained a general impression of the patient's overall condition. This establishes whether the patient is presently or imminently in a critical condition and rapidly evaluates the patient's overall systemic condition. This is when the decision regarding ground vs. air transport should be made. Early decision making will ultimately shorten scene time.

SYNCOPE

Uncomplicated syncope (fainting) is the result of blood pooling in dilated veins, which reduces the amount of blood being pumped to the brain. Causes of syncope include getting up too quickly, standing for long periods with little movement, and stressful situations. Signs and symptoms that may be present are dizziness; nausea; visual disturbance from pupillary dilation; sweating; pallor; and a weak, rapid pulse. As the body collapses, blood returns to the head, and consciousness is quickly regained. Revival can be promoted by carefully placing the casualty in the shock position or in a sitting position with the head between the knees. Placing a cool, wet cloth on the patient's face and loosening his or her clothing can also help. Syncope may also result from an underlying medical problem such as diabetes, cerebrovascular accident (stroke), heart condition, or epilepsy.

CEREBROVASCULAR ACCIDENT

A cerebrovascular accident, also known as stroke or apoplexy, is caused by an interruption of the arterial blood supply to a portion of the brain. This interruption may be caused by arteriosclerosis, by a clot forming in the brain, or by a hemorrhage in the brain. Tissue damage and loss of function result.

Onset of a cerebrovascular accident is sudden, with little or no warning. The first signs include weakness or paralysis on the side of the body opposite the side of the brain that has been injured. Muscles of the face on the affected side may be involved. The patient's level of consciousness varies from alert to unresponsive. Additionally, motor functions including vision and speech on the affected side are disturbed, and the throat may be paralyzed.

Emergency treatment for a cerebrovascular accident is mainly supportive. Special attention must be paid to the casualty's airway, since he or she may not be able to keep it clear. Place the casualty in a semi-reclining position or on the paralyzed side.

- Be prepared to use suction if the casualty vomits
- Act in a calm, reassuring manner, and keep any onlookers quiet since the casualty may be able to hear what is going on
- Administer oxygen to combat cerebral hypoxia
- Carefully monitor the casualty's vital signs and keep a log. Pay special attention to respirations, pulse strength and rate, and the presence or absence of the bilateral carotid pulse
- Transport the casualty to a medical treatment facility as soon as possible
CONVULSIONS

Convulsions, or seizures, are a startling and often frightening phenomenon. Convulsions are characterized by severe and uncontrolled muscle spasms or muscle rigidity. Convulsive episodes occur in one to two percent of the general population.

Although epilepsy is the most widely known form of seizure activity, there are numerous forms of convulsions that are classified as either central nervous system (CNS) or non-CNS in origin. It is especially important to determine the cause in patients who have no previous seizure history. This determination may require an extensive medical workup in the hospital. Since epilepsy is the most widely known form of seizure activity, this section will highlight epileptic seizure disorders.

Epilepsy, also known as seizures or fits, is a condition characterized by an abnormal focus of activity in the brain that produces severe motor responses or changes in consciousness. Epilepsy may result from head trauma, scarred brain tissue, brain tumors, cerebral arterial occlusion, fever, or a number of other factors. Fortunately, epilepsy can often be controlled by medications.

Grand mal seizure is the more serious type of epilepsy. Grand mal seizure may be but is not always preceded by an aura. The casualty soon comes to recognize these auras, which allows him or her time to lie down and prepare for the seizure's onset. A burst of nerve impulses from the brain causes unconsciousness and generalized muscular contractions, often with loss of bladder and bowel control. The primary dangers in a grand mal seizure are tongue biting and injuries resulting from falls. A period of sleep or mental confusion follows this type of seizure. When full consciousness returns, the casualty will have little or no recollection of the attack.

Petit mal seizure is of short duration and is characterized by an altered state of awareness or partial loss of consciousness, and localized muscular contractions. The patient has no warning of the seizure's onset and little or no memory of the attack after it is over.

First aid treatment for both types of epileptic seizure consists of protecting the casualty from self-injury. Additional methods of seizure control may be employed under a medical officer's supervision. In all cases, be prepared to provide suction to the casualty since the risk of aspiration is significant. Transport the patient to a medical treatment facility once the seizure has ended.

DROWNING

Drowning is a suffocating condition in a water environment. Water seldom enters the lungs in appreciable quantities because, upon contact with fluid, laryngeal spasms occur, and these spasms seal the airway from the mouth and nose passages. To avoid serious damage from the resulting hypoxia, quickly bring the casualty to the surface and immediately, even before the casualty is pulled to shore, start artificial ventilation. Do not interrupt artificial ventilation until the rescuer and the casualty are ashore. Once on dry ground, quickly administer an abdominal thrust (Heimlich maneuver) to empty the lungs, and then immediately restart the ventilation until spontaneous breathing returns. Oxygen enrichment is desirable if a mask is available. Remember that an apparently lifeless person who has been immersed in cold water for a long period of time may be revived if artificial ventilation is started immediately.

PSYCHIATRIC EMERGENCIES

A psychiatric emergency is defined as a sudden onset of behavioral or emotional responses that, if not responded to, will result in a life-threatening situation. Probably the most common psychiatric emergency is the suicide attempt. A suicide attempt may range from verbal threats and suicidal gestures to a successful suicide.
Always assume that a suicide threat is real; do not leave the patient alone. In all cases, the prime consideration for the HM is to keep patients from inflicting harm to themselves and to get them under the care of a trained psychiatric professional. When dealing with suicidal gestures or attempts, treat any self-inflicted wounds appropriately.

In the case of ingested substances, do not induce vomiting in a patient who is not awake and alert. For specific treatment of ingested substances, refer to Chapter 22, “Poisoning and Drug Abuse.”

There are numerous other psychiatric conditions that would require volumes to expound upon. In almost all cases, appropriate first aid treatment consists of a calm, professional, understanding demeanor that does not aggravate or agitate the patient. With an aggressive or hostile patient, a show of force may be all that is required. A show of force involves at least 4 and preferably 5 personnel who approach the patient with one person designated to maintain communication with him or her. The intent is to let the patient know that he or she must control his or her behavior or there is a team who will help the patient control the behavior. Almost all cases of psychiatric emergencies will present with a third party often the family or friend of the patient who has recognized a distinct change in the behavior pattern of the patient and who is seeking help for them.

**DERMATOLOGIC EMERGENCIES**

Most dermatologic cases that present as emergencies are not real emergencies. The patient perceives them as such because of the sudden presentation and or repulsive appearance or excessive discomfort. Treat most dermatologic conditions symptomatically. The major exception to symptomatic treatment is toxic epidermal necrolysis (TEN).

Toxic epidermal necrolysis is a condition characterized by sudden onset, excessive skin irritation, painful *erythema* (redness of skin produced by congestion of the capillaries), bullae (large blisters), and exfoliation of the skin in sheets. TEN is also known as the scalded skin syndrome because of its appearance. TEN is thought to be caused by a staphylococcal infection in children and by a toxic reaction to medications in adults.

Since skin is the largest single organ of the body and serves as a barrier to infection, prevention of secondary skin infection is very important. Treatment of skin infections consists of isolation techniques, silver nitrate compresses, aggressive skin care, intravenous antibiotic therapy, and in drug-induced cases, systemic steroids.

NOTE:
In the following assessment and treatment sections assume the following is true for the scenarios presented:

1. All required equipment is available.
2. None of the situations takes place in a CBRNE environment.
MEDICAL PATIENT ASSESSMENT

Scenario

The HM has a patient with a complaint that is medical in nature and no significant mechanism of injury.

Objective

Perform a medical patient assessment without causing further injury.

NOTE:
Take Body Substance Isolation (BSI) precautions.

1. Perform scene size-up.
   a. Determine the safest route to access the patient.
   b. Determine the mechanism of injury/nature of illness.
   c. Determine the number of patients.
   d. Request additional help if necessary.
   e. Consider stabilization of the spine.

2. Perform an Initial Assessment.
   a. Form a general impression of the patient and the patient's environment.
   b. Assess the patient's mental status using the Alert, Verbal, Pain, Unresponsive (AVPU) scale.
      i. A - Alert and oriented.
      ii. V - Responsive to verbal stimuli.
      iii. P - Responsive to painful stimuli.
      iv. U - Unresponsive.
   c. Determine the chief complaint/apparent life-threatening condition.
   d. Assess the airway.
      i. Perform an appropriate maneuver to open and maintain the airway if necessary.
      ii. Insert an appropriate airway adjunct, if necessary.
   e. Assess breathing.
      i. Determine the rate, rhythm, and quality of breathing.
      ii. Administer oxygen if necessary using the appropriate delivery device.
   f. Assess circulation.
      i. Check skin color and temperature.
      ii. Assess the pulse for rhythm and force.
         1. Check the radial pulse in adults.
         2. Check the radial pulse and capillary refill in children under 6 years old.
         3. Check the brachial pulse and capillary refill in infants.
      iii. Check for major bleeding.
      iv. Control major bleeding.
      v. Treat for shock.
   g. Identify priority patients and make a transport decision (load and go or stay and play).

NOTE:
High priority conditions that require immediate transport include poor general impression, unresponsive, responsive but not following commands, difficulty breathing, shock, complicated childbirth, chest pain with systolic blood pressure less than 100, uncontrolled bleeding, and severe pain.
3. Conduct a rapid physical exam if the patient is unconscious. Inspect each of the following areas for deformities, contusions, abrasions, punctures or penetration, burns, tenderness, lacerations, swelling (DCAP-BTLS).

   a. Assess the head.
   b. Assess the neck.
   c. Assess the chest.
   d. Assess the abdomen.
   e. Assess the pelvis.
   f. Assess the extremities.
   g. Assess the posterior.

4. Gather a SAMPLE history from the patient: signs and symptoms, allergies, medications, past/pertinent medical history, last oral intake, and everts preceding illness or injury.

   **NOTE:**
   If the patient is unable to provide this information, gather as much information about the SAMPLE history as possible from the patient's family and or bystanders.

   a. Signs and symptoms. Gather history of the present illness (OPQRST) from the patient.
      i. Respiratory.
         1. Onset - When did it begin?
         2. Provocation - What was the patient doing when this came on?
         3. Quality - Can the patient describe the feeling he or she has?
         4. Radiation - Does the feeling seem to spread to any other part of the body? Does the patient have pain or discomfort anywhere else in the body?
         5. Severity - On a scale of 1 to 10, how bad is the breathing trouble (10 is worst, 1 is best)?

   6. Time - How long has the patient had this feeling?

   7. Interventions - Has the patient taken any medication to help him or her breathe? Did it help?

ii. Cardiac.

   1. Onset - When did it begin?
   2. Provocation - What was the patient doing when this came on?
   3. Quality - Can the patient describe the feeling he or she has?
   4. Radiates - Does the feeling seem to spread to any other part of the body? Does the patient have pain or discomfort anywhere else in the body?
   5. Severity - On a scale of 1 to 10, how bad is the breathing trouble (10 is worst, 1 is best)?
   6. Time - How long has the patient had this feeling?
   7. Interventions - Has the patient taken any medication to help? Did it help?

iii. Altered mental status.

   1. Description of the episode - Can the patient describe what happened? How did the episode occur?
   2. Onset - How long ago did it occur?
   3. Duration - How long did it last?
   4. Associated symptoms - Was the patient sick or complaining of not feeling well before this happened?
   5. Evidence of trauma - Was the patient involved in falls or accidents recently?
   6. Interventions - Has the patient taken anything to help with this problem? Did it help?
   7. Seizures - Did the patient have a seizure?
8. Fever - Did the patient have a fever? What was the patient's temperature?

iv. Allergic reaction.
1. History of allergies - Does the patient have any allergies?
2. What the patient exposed to - Is there any chance that he or she was exposed to something to which he or she is allergic?
3. How was the patient exposed - How did he or she come into contact with (whatever the patient is allergic to)?
4. Effects - What kind of symptoms is the patient having? How long after he or she was exposed did the symptoms start?
5. Progression - How long after exposure did the symptoms start? Are they worse now than they were before?
6. Interventions - Has the patient taken anything to help? Did it help?

v. Poisoning/overdose.
1. Substance - What substance was involved?
2. When did the patient ingest/become exposed - When did the exposure/ingestion occur?
3. How much did the patient ingest - How much did the patient ingest?
4. Over what time period - Over how long a period did the ingestion occur?
5. Interventions - What interventions did the family or bystanders take?
6. Estimated weight - What is the patient's estimated weight?

vi. Environmental emergency.
1. Source - What caused the injury?
2. Environment - Where did the injury occur?
3. Duration - How long was the patient exposed?
4. Loss of consciousness - Did the patient lose consciousness at any time?
5. Effects (general or local) - What signs and symptoms is the patient having? What effect did being exposed have on the patient?

vii. Obstetrics.
1. Is the patient pregnant?
2. How long has she been pregnant (weeks or months)?
3. Is the patient having pain or contractions?
4. Is the patient bleeding? Is the patient having any discharge?
5. Does she feel the need to push?
6. When was her last menstrual period?

viii. Behavioral.
1. How does the patient feel?
2. Determine suicidal tendencies - Does the patient have a plan to hurt himself or herself or anyone else?
3. Is the patient a threat to self or others?
4. Is there a medical problem?
5. Interventions?

b. Allergies?

c. Medications?

d. Past pertinent history?

e. Last oral intake?

f. Event(s) leading to present illness?
5. Perform a focused physical examination on the affected body part/system.
6. Obtain baseline vital signs.
7. Provide medication, interventions, and treatment as needed.
8. Re-evaluate the transport decision.
9. Consider completing a detailed physical examination.
   a. Repeat the initial assessment.
   b. Repeat vital signs.
   c. Repeat the focused assessment regarding the patient's complaint or injuries.

**RESPIRATORY EMERGENCY ASSESSMENT**

**Scenario**

The HM has a conscious patient with a respiratory emergency.

**Objective**

Correctly identify and treat a respiratory emergency without causing further harm to the patient.

**Performance Steps**

**NOTE:**
Take Body Substance Isolation (BSI) precautions.

1. Examine the patient.
   a. Assess the airway and open it, if necessary.

**CAUTION:**
A patient experiencing respiratory distress can rapidly progress to full arrest. Always be prepared to utilize advanced airway procedures.

i. Ask the patient a question requiring more than a yes or no answer.

ii. Note whether or not the patient can speak in full sentences.

iii. Look for the presence of drooling that may indicate a partial or complete airway obstruction.

b. Assist with artificial ventilations if respiratory effort and rate are inadequate.

i. Look for the rise and fall of the chest during inspiration and expiration.

ii. Listen for the presence of noisy respirations (e.g., *stridor*, wheezing).

c. Apply supplemental oxygen by mask or nasal cannula.

**NOTE:**
Any casualty complaining of difficulty breathing should receive supplemental oxygen.

d. Place the patient in the position of comfort.

**NOTE:**
Most patients experiencing difficulty breathing prefer to remain in a seated position.

e. Obtain a complete set of vital signs to include pulse oximetry, if available.

2. Perform a focused physical examination.
   a. Listen to the anterior and posterior lung fields with the stethoscope.
   b. Look at the chest and abdomen and note the presence of any retractions.
   c. Check the skin for the presence of cyanosis.
   d. Check the lower extremities for the presence of edema.
3. Obtain a focused history.
   a. Ask the patient if there is an existing condition such as asthma.
   b. Ask the patient if he is taking any medications.
   c. Question the patient about allergies to medications.
   d. Ask the patient if difficulty breathing was of sudden or gradual onset.

4. Assist the patient in using a metered dose inhaler.

   **NOTE:**
   This step may only be performed if the casualty has an inhaler prescribed to him.

   a. Perform the five rights of medication dosage.
   b. Have the patient exhale deeply.
   c. Have the patient place his lips around the opening and press the inhaler to activate the spray as he inhales deeply.
   d. Instruct the patient to hold his breath as long as possible before exhaling.
   e. Repeat steps 4b through 4d.


   **NOTE:**
   This step may only be performed with a medical officer’s order for a nebulizer treatment.

   a. Set up the nebulizer per manufacturer’s guidelines.
   b. Instill the appropriate medicine IAW local SOP.
   c. Connect the nebulizer to an oxygen source.

   **NOTE:**
   Compressed air can be used but it does not supply the casualty with supplemental oxygen.

   d. Turn on the flow of oxygen and check for the formation of mist (smoke).
   e. Have the patient place his lips on the mouth piece and slowly inhale and exhale the mist.
   f. Monitor the patient’s vital signs every 5 minutes. If available, attach the casualty to a pulse oximeter.


7. Evacuate the patient.

**CARDIAC EMERGENCIES**

A number of heart conditions are commonly referred to as heart attacks. These conditions include angina pectoris, acute myocardial infarction, and congestive heart failure. Together these heart conditions are the cause of at least half a million deaths per year in the United States. Heart conditions occur more commonly in men in the 50-to-60-year age group. Predisposing factors are the lack of physical conditioning, high blood pressure and blood cholesterol levels, smoking, diabetes, and a family history of heart disease.

**Angina Pectoris**

Angina pectoris, also known simply as angina, is caused by insufficient oxygen being circulated to the heart muscle. This condition results from a spasm of the coronary artery, which allows the heart to function adequately at rest but does not allow enough oxygen-enriched blood to pass through the heart to support sustained exercise. When the body exerts itself, the heart muscle becomes starved for oxygen. The result of this condition is a squeezing, substernal pain that may radiate to the left arm and to the jaw.

Angina is differentiated from other forms of heart problems because the pain results from exertion and subsides with rest. Many people who suffer from angina pectoris carry nitroglycerin tablets. If the casualty of a suspected angina attack is carrying a bottle of these pills, place one pill under the tongue. Relief will be almost instantaneous.
Other first aid procedures include providing supplemental oxygen, reassurance, comfort, monitoring vital signs, and transporting the casualty to a medical treatment facility.

**Acute Myocardial Infarction**

Acute myocardial infarction results when a coronary artery is severely occluded by arteriosclerosis or completely blocked by a clot. The pain associated with myocardial infarction is similar to that of angina pectoris but is longer in duration, not related to exertion or relieved by nitroglycerin, and leads to death of heart-muscle tissue. Other symptoms are sweating, weakness, and nausea. Additionally, although the patient’s respirations are usually normal, his pulse rate increases and may be irregular, and his blood pressure falls. The casualty may have an overwhelming feeling of doom. Death may result.

**Congestive Heart Failure**

A heart suffering from prolonged hypertension, valve disease, or heart disease will try to compensate for decreased function by increasing the size of the left ventricular pumping chamber and increasing the heart rate. This condition is known as congestive heart failure. As blood pressure increases, fluid is forced out of the blood vessels and into the lungs, causing pulmonary edema. Pulmonary edema leads to rapid shallow respirations, the appearance of pink frothy bubbles at the nose and mouth and distinctive rattling sounds (known as *rales*) in the chest. Increased blood pressure may also cause body fluids to pool in the extremities resulting in peripheral edema. Emergency treatment for congestive heart failure is essentially the same as that for acute myocardial infarction. Do not start CPR unless the patient’s heart function ceases. If an intravenous line is started, it should be maintained at the slowest rate possible to keep the vein open since an increase in the circulatory volume will make the condition worse. Immediately transport the patient to a medical treatment facility.

**CARDIAC EMERGENCY ASSESSMENT**

**Scenario**

The HM has a conscious patient who is complaining of chest pain. The HM has already taken the appropriate body substance isolation (BSI) precautions. The HM has already done the initial patient assessment, focused history, and physical.

**Objective**

Complete all necessary steps to manage a patient with a cardiac emergency, without causing any further injury.

1. Identify the signs and symptoms of cardiac emergency or compromise.
   a. Pain, pressure, or discomfort in the chest or upper abdomen (epigastrium).
   b. Dyspnea.
   c. Palpitations.
   d. Sudden onset of sweating with nausea or vomiting.
   e. Anxiety (feeling of impending doom or irritability).
   f. Abnormal pulse.
      i. Bradycardia (less than 60 beats per minute).
      ii. Tachycardia (greater than 100 beats per minute).
   g. Abnormal blood pressure.
      i. Hypotensive (systolic pressure less than 90).
      ii. Hypertensive (systolic pressure greater than 140).
h. Pulmonary edema.
   i. Shortness of breath.
   ii. Dyspnea.
   iii. Rales upon auscultation.
   i. Pedal edema.
2. Administer the appropriate treatment.
   a. Place the patient in a position of comfort.
      
      **NOTE:**
      This is normally in the Fowler’s position.
   b. Apply a high concentration of oxygen via a non-rebreather mask.
   c. Assist the patient in taking nitroglycerin, if available.
      
      **NOTE:**
      Administer the nitroglycerin only if ALL of the following conditions are met:
      - Patient complains of chest pain.
      - Patient has a history of cardiac problems.
      - Patient has a current prescription for nitroglycerin.
      - Patient has the nitroglycerin.
      - Patient's systolic blood pressure is greater than 100.
   d. If the patient experiences no relief, repeat step 2c every 5 minutes until the patient has taken a total of three tablets.
   e. If the patient experiences no relief after three nitroglycerin tablets or his condition worsens, initiate an IV at to keep vein open (KVO/TKO) rate.
3. Transport promptly to the nearest medical treatment facility.
4. Perform an ongoing assessment while en route.
5. Document all interventions.

**ALLERGIC REACTION ASSESSMENT**

**Scenario**

The HM has a patient demonstrating signs and symptoms of an allergic reaction.

**Objective**

Treat a patient with an allergic reaction without causing further harm.

**Performance Steps**

1. Recognize the causes of allergic reactions.
   a. Drugs (penicillin).
   b. Insect bites (bee stings).
   c. Pollen.
   d. Food (peanuts).
2. Recognize the early manifestations of an allergic or anaphylactic reaction.
   a. Skin.
      i. Flushing.
      ii. Urticaria (hives).
      iii. Swelling of face (especially eyes and lips), hands, feet, neck.
      iv. Swelling of mouth, tongue, airway (angioedema).
   b. Respiratory.
      i. Tightness in throat and chest.
      ii. Cough.
      iii. Rapid, labored noisy breathing.
      iv. Stridor (harsh, high pitched sound during inspiration).
      v. Wheezing (may be audible without a stethoscope).
   c. Cardiac.
      i. Increased heart rate.
      ii. Decreased blood pressure.
   d. Generalized feelings.
      i. Itchy, watery eyes.
      ii. Headache.
      iii. Runny nose.
      iv. Sense of impending doom.
3. Recognize the signs of anaphylactic shock.
   a. May have any of the above, but must have signs of respiratory distress or shock.
   b. Altered mental status.
   c. Signs of respiratory distress.
   d. Signs of shock.
4. Treat allergic reactions.

   NOTE:
   Take Body Substance Isolation (BSI) precautions.

   a. Perform initial assessment ABCs (treat any life-threatening conditions).
   b. Perform a focused history and physical exam.
   c. Assess baseline vital signs and SAMPLE history.
   d. Manage the patient's airway and breathing. If the patient has an epinephrine autoinjector and has symptoms of anaphylaxis, assist in the epinephrine administration.
5. Evacuate the patient to the nearest medical treatment facility (MTF).

ANAPHYLACTIC EMERGENCY

This condition, also called anaphylaxis or anaphylactic shock, is a severe allergic reaction to foreign material. The most frequent causes are probably penicillin and the toxin from bee stings, although foods, inhalants, and contact substances can also cause a reaction. Anaphylaxis can happen at any time, even to people who have taken penicillin many times before without experiencing any problems. This condition produces severe shock and cardiopulmonary failure of a very rapid onset. Because of the rapidity and severity of the onset of symptoms, immediate intervention is necessary. The general treatment for severe anaphylaxis is the subcutaneous injection of 0.3 cc of epinephrine and supportive care.

The most characteristic and serious symptoms of an anaphylactic reaction are loss of voice and difficulty breathing. Other typical signs are giant hives, coughing, and wheezing. As the condition progresses, signs and symptoms of shock develop, followed by respiratory failure. Emergency management consists of maintaining vital life functions. Summon the medical officer immediately.
ANAPHYLACTIC SHOCK ASSESSMENT\textsuperscript{23}

Scenario
The HM needs to treat a casualty for an anaphylactic shock.

Objective
Initiate treatment for anaphylactic shock, stabilize the casualty, and minimize the effects of anaphylaxis without causing further injury to the casualty.

Performance Steps

\textbf{NOTE:}
Anaphylactic reactions occur within minutes or even seconds after contact with the substance to which the patient is allergic. Reactions occur in the skin, respiratory system, and circulatory system.

\textbf{NOTE:}
Take Body Substance Isolation (BSI) precautions.

1. Check the casualty for signs and symptoms of anaphylactic shock.
   a. Skin.
      i. Flushed or ashen.
      ii. Burning or itching.
      iii. Edema (swelling), especially in the face, tongue, or airway.
      iv. Urticaria (hives) spreading over the body.
      v. Marked swelling of the lips and cyanosis about the lips.
   b. Respiratory.
      i. Tightness or pain in the chest.
      ii. Sneezing and coughing.
      iii. Wheezing, stridor, or difficulty in breathing (dyspnea).
      iv. Sputum (may be blood tinged).
   c. Circulatory.
      i. Weak, rapid pulse.
      ii. Falling blood pressure.
      iii. Hypotension.
      iv. Dizziness or fainting.
      v. Coma.

2. Open the airway, if necessary.

\textbf{NOTE:}
In cases of airway obstruction from severe glottic edema, a cricothyroidotomy may be necessary.

3. Administer high concentration oxygen.

4. Administer epinephrine.
   a. Administer 0.3 - 0.5 ml of epinephrine, 1:1000 solution, subcutaneously (SQ) or intramuscularly (IM).

\textbf{NOTE:}
Annotate the time of injection.

b. Additional epinephrine may be required if anaphylaxis progresses. Additional doses may be administered every 5 to 10 minutes if needed.

5. Initiate an intravenous (IV) infusion.

6. Provide supportive measures for the treatment of shock, respiratory failure, circulatory collapse or cardiac arrest.
   a. Infuse additional IV fluid if blood pressure continues to drop.
   b. Position the casualty in the supine position with legs elevated if injuries permit.
   c. Perform rescue breathing, if necessary.
   d. Administer external chest compressions, if necessary.

7. Check the casualty's vital signs every 3 to 5 minutes until the casualty is stable.

8. Record the treatment given.
9. Evacuate the casualty, providing supportive measures en route.

**POISONS/DRUG ABUSE/HAZARDOUS MATERIALS EMERGENCIES**

HMs can encounter special situations that include poisoning, suspected drug abuse, or exposure to hazardous materials. Knowledge of these conditions along with the ability to assess and treat them is essential. These situations are discussed in detail in Chapter 22, "Poisoning and Drug Abuse."

**POISONED CASUALTY ASSESSMENT**

**Scenario**

The HM has a casualty that has been poisoned. All other more serious injuries have been assessed and treated. The HM has taken body substance isolation (BSI) precautions and has performed an initial assessment.

**Objective**

Determine the type of poisoning and provide treatment, minimizing the effects of the poisoning, without causing further injury to the casualty.

1. Determine the type of poisoning.

**CAUTION:**

If determination cannot be made to the type of poisoning, the casualty should be treated by the symptoms presented.

a. Ingested poisons.
   i. Altered mental status.
   ii. Nausea/vomiting.
   iii. Abdominal pain.
   iv. Diarrhea.
   v. Chemical burns around the mouth.
   vi. Unusual breath odors.

b. Inhaled poisons.
   i. Carbon monoxide.
      1. Headache.
      2. Dizziness.
      3. Dyspnea.
      4. Nausea/vomiting.
      5. Cyanosis.
      6. Coughing.

ii. Smoke Inhalation.
   1. Dyspnea.
   2. Coughing.
   3. Breath that has a smoky smell or the odor of chemicals involved at the scene.
   4. Black residue in any sputum coughed up by the casualty.
   5. Nose-hairs singed from superheated air.

c. Injected poisons.
   i. Sympathomimetics
      (Uppers- example: cocaine).
      1. Excitement.
      2. Tachycardia.
      3. Tachypnea.
      4. Dilated pupils.
      5. Sweating.

   ii. Sedative-Hypnotics
      (Downers - examples; Valium®, Xanax XR®).
      1. Sluggish.
      2. Sleepy typical coordination of body and speech.
      3. Pulse and breathing rates are low, often to the point of a true emergency.
iii. Hallucinogens (LSD).
   1. Tachycardia.
   2. Dilated pupils.
   3. Flushed face.
   4. Often sees or hears things, has very little concept of time.

iv. Narcotics (Morphine, heroin).
   1. Reduced rate of breathing.
   2. Dyspnea.
   3. Low skin temperature.
   5. Pinpoint pupils.
   6. Very sleepy.

d. Absorbed poisons.
   i. Liquid or powder on the casualty's skin.
   ii. Burns.
   iii. Itching.
   iv. Irritation.
   v. Redness.

2. Administer emergency care.
   a. Ingested poisons.
      i. Maintain the airway.
      ii. Gather all information about the type of ingested poisoning.
      iii. Initiate IV therapy.
      iv. Administer activated charcoal.

CAUTION:
Activated charcoal is contraindicated for patients that have an altered mental status that are suspected of swallowing acids or alkalis, or have an inability to swallow.

NOTE:
Be prepared to provide oral suctioning if the casualty starts to vomit. All vomitus must be saved.

i. Adults and children: 1 gram of activated charcoal/kg of body weight.


3. Usual pediatric dose: 12.5 - 25 grams.

NOTE:
Mix with soda for easier consumption.

v. Give supplemental oxygen.

vi. Record the name, dose, and time of administration of medication.

vii. Transport to the nearest medical treatment facility.

b. Inhaled poisons.
   i. Remove the casualty from the unsafe environment.
   ii. Maintain the airway.
   iii. Administer high concentrations of oxygen.

NOTE:
Oxygen therapy is the most important treatment for inhalation poisoning.

iv. Transport to the nearest medical treatment facility.


c. Absorbed poisons.
   i. Remove the casualty from the source.
   ii. Remove contaminated clothing.
   iii. Brush off any powders from the casualty's skin.
   iv. Flush the skin with large amounts of water for at least 20 minutes.
d. Injected poisons.
   i. Maintain the airway and be prepared to provide assisted ventilations.
   ii. Give supplemental oxygen.
   iii. Initiate IV therapy.
   iv. Look for gross soft tissue damage ("tracks").
   v. Protect the casualty from harming self and others.

**NOTE:**
Be prepared to use restraints.

vi. Transport to the nearest medical treatment facility.

3. Document procedures.

**DIABETIC EMERGENCIES**

Diabetes mellitus is an inherited condition in which the pancreas secretes an insufficient amount of the protein hormone insulin. Insulin regulates carbohydrate metabolism by enabling glucose to enter cells for use as an energy source.

**Diabetic Ketoacidosis**

Diabetic ketoacidosis most often results either from forgetting to take insulin or from taking too little insulin to maintain a balanced condition. Diabetes may suffer from rising levels of glucose in the blood stream (hyperglycemia). The rising levels of glucose result in osmotic diuresis, an increased renal excretion of urine. Serious dehydration (hypovolemia) may result.

Concurrently, the lack of glucose in the cells leads to an increase in metabolic acids in the blood (acidosis) as other substances, such as fats, are metabolized as energy sources. The result is gradual central nervous system depression, starting with symptoms of confusion and disorientation, and leading to stupor and coma. Blood pressure falls, and the pulse rate becomes rapid and weak.

Respirations are deep, and a sickly sweet acetone odor is present on the breath. The skin is warm and dry.

**NOTE:**
Diabetic casualties are often mistakenly treated as if intoxicated since the signs and symptoms presented are similar to those of alcohol intoxication.

The diabetic under treatment tries to balance the use of insulin against glucose intake to avoid the above problems. The casualty or the casualty's family may be able to answer two key questions:

1. Has the casualty eaten today?
2. Has he taken the prescribed insulin?

If the answer is yes to the first and no to the second question, the casualty is probably in a diabetic coma.

Emergency first aid centers on ABC support, administration of oral or intravenous fluids to counter shock, and rapid evacuation to medical officer's supervision.

**Insulin Shock**

Insulin shock results from too little sugar in the blood (hypoglycemia). This type of shock develops when a diabetic exercises too much or eats too little after taking insulin. Insulin shock is a very serious condition because glucose is driven into the cells to be metabolized, leaving too little glucose in circulation to support the brain. Brain damage develops quickly. Signs and symptoms of insulin shock include:

- Pale, moist skin
- Dizziness and headache
- Strong, rapid pulse
- Fainting, seizures, and coma

Treatment is centered on getting glucose into the system quickly to prevent brain damage. Placing sugar cubes under the tongue or administering oral liquid glucose are the most beneficial treatments.
Hard candies are a good interim treatment as well. Transport the casualty to a medical treatment facility as soon as possible.

**NOTE:**
If the HM is in doubt as to whether the casualty is in insulin shock or a ketoacidotic state, give them sugar.

Brain damage develops very quickly in insulin shock and must be reversed immediately.

If the casualty turns out to be ketoacidotic, a condition that progresses slowly, the extra sugar will do no appreciable harm.

**DIABETIC EMERGENCY ASSESSMENT**

**Scenario**

The HM has a patient with a diabetic emergency.

**Objective**

Initiate treatment for hypoglycemia or hyperglycemia, stabilize the patient, and minimize the effects without causing further injury to the patient.

**NOTE:**
Take Body Substance Isolation (BSI) precautions.

1. Identify the signs and symptoms of a diabetic emergency.

   a. **Hypoglycemia.** (Low blood sugar)

   **NOTE:**
   Hypoglycemia is the most common of all diabetic emergencies.

   i. Rapid onset of altered mental status.

   **NOTE:**
   This is especially so after missing a meal, vomiting, or an unusual amount of physical exertion.

   ii. Intoxicated appearance, staggering, slurred speech, or unconsciousness.

   iii. Elevated heart rate.

   iv. Cold, clammy skin.

   v. Hunger.

   vi. Seizures.

   vii. Uncharacteristic behavior.

   viii. Anxiety.

   ix. Combativeness.

   b. **Hyperglycemia.** (High blood sugar)

   i. Slow onset.

   ii. Warm, red, dry skin.

   iii. Sweet, fruity breath odor (acetone).

   iv. Deep, rapid breathing.

   v. Dry mouth.

   vi. Intense thirst.

   vii. Abdominal pain.

   viii. Nausea and vomiting.

2. Administer the appropriate treatment.

**NOTE:**
If unsure whether the patient has hyperglycemia or hypoglycemia, it is safer to treat the patient for hypoglycemia.

a. **Hypoglycemia.**

   i. If conscious, administer oral glucose IAW local protocol.

   **NOTE:**
   Give it only if the patient has a history of diabetes, the patient has an altered mental status and the patient is awake enough to swallow.

   1. Apply glucose to a tongue depressor and place it in the patient's mouth between the cheek and gum.

   2. Or if the patient is able, let the patient squeeze the glucose from the tube directly into his mouth.
ii. Monitor the patient for complications.
iii. Assess vital signs.
iv. If unconscious:
   1. Secure the airway and administer oxygen.
   2. Assess vital signs.
   3. Start an intravenous IV at to keep vein open (TKO) rate.
   4. Place the patient in the recovery position.

**NOTE:**
May be directed by the medical officer to give D50 (dextrose solution) intravenously to determine hyper- vs. hypoglycemia.

5. Transport to the nearest medical treatment facility.

b. Hyperglycemia.
   i. Maintain an open airway and administer oxygen.
   ii. Assess vital signs.
   iii. Start an IV at TKO rate.
   iv. Place the patient on a cardiac monitor, if available.
   v. Transport to the nearest medical treatment facility.

3. Document all treatment given.

**NOTE:**
Document the patient's mental status using the alert, verbal, painful, and unresponsive (AVPU) scale and vital signs every 5 minutes.

A change in mental status may indicate an alteration in the patient's blood sugar level.

### HEAD INJURIES

Head wounds must be treated with particular care, since there is always the possibility of brain damage. The general treatment for head wounds is the same as that for other fresh wounds. However, certain special precautions must be observed if the HM is giving first aid to a person who has suffered a head wound.

**HEAD INJURY ASSESSMENT**

**Scenario**

The HM needs to treat a casualty with an open or closed head injury. All other more serious injuries have been assessed and treated.

**Objective**

Treat the head injury and stabilize the casualty without causing additional injury.

**Performance Steps**

**WARNING:**
Treat casualties with any type of traumatic head injury or loss of consciousness as if they have a spinal injury.

**NOTE:**
Take Body Substance Isolation (BSI) precautions.

1. Check for the signs and symptoms of head injuries.
   a. **Closed head injury** is caused by a direct blow to the head.

**WARNING:**
Brain injury, leading to a loss of function or death, often occurs without evidence of a skull fracture or scalp injury.

Because the skull cannot expand, swelling of the brain or a collection of fluid pressing on the brain can cause pressure.

This can compress and destroy the brain tissue.
i. Deformity of the head.

ii. Clear fluid or blood escaping from the nose and or ear(s).

iii. Periorbital discoloration (raccoon eyes).

iv. Bruising behind the ears, over the mastoid process (battle sign).

v. Lowered pulse rate if the casualty has not lost a significant amount of blood.

vi. Signs of increased intracranial pressure.
   1. Headache, nausea, and or vomiting.
   2. Possible unconsciousness.
   3. Change in pupil size or symmetry.
   4. Lateral loss of motor nerve function—one side of the body becomes paralyzed.

NOTE:
Lateral loss may not happen immediately but may occur later.

5. Change in the casualty's respiratory rate or pattern.

6. A steady rise in the systolic blood pressure if the casualty hasn't lost significant amounts of blood.

7. A rise in the pulse pressure (systolic pressure minus diastolic pressure).

8. Elevated body temperature.

9. Restlessness—indicates insufficient oxygenation of the brain.

b. Concussion—caused by a violent jar or shock.

NOTE:
A direct blow to the skull may bruise the brain.

i. Temporary unconsciousness followed by confusion.

ii. Temporary, usually short term, loss of some or all brain functions.

iii. The casualty has a headache or is seeing double.

iv. The casualty may or may not have a skull fracture.

c. Contusion—an internal bruise or injury. It is more serious than a concussion. The injured tissue may bleed or swell. Swelling may cause increased intracranial pressure that may result in a decreased level of consciousness and even death.

d. Open head injury.
   i. Penetrating wound—an entry wound with no exit wound.
   ii. Perforating wound—the wound has both entry and exit wounds.
   iii. Visibly deformed skull.
   iv. Exposed brain tissue.
   v. Possible unconsciousness.
   vi. Paralysis or disability on one side of the body.
   vii. Change in pupil size.
   viii. Lacerated scalp tissue—may have extensive bleeding.

2. Direct manual stabilization of the casualty's head.

3. Check the casualty's vital signs.

4. Assess the casualty's level of consciousness using the AVPU scale.
   a. A—alert. The casualty responds spontaneously to stimuli and is able to answer questions in a clear manner.
   b. V—verbal. The casualty does not respond spontaneously but is responsive to verbal stimuli.
   c. P—pain. The casualty does not respond spontaneously or to verbal stimuli but is responsive to painful stimuli.
   d. U—unresponsive. The casualty is unresponsive to any stimuli.
5. Assess the casualty's pupil size.
   a. Observe the size of each pupil.

   **NOTE:**
   A variation of pupil size may indicate a brain injury.
   In a very small percentage of people, unequal pupil size is normal.

   b. Shine a light into each eye to observe the pupillary reaction to light.

   **NOTE:**
   The pupils should constrict promptly when exposed to bright light.
   Failure of the pupils to constrict may indicate brain injury.

6. Assess the casualty's motor function.
   a. Evaluate the casualty's strength, mobility, coordination, and sensation.
   b. Document any complaints, weakness, or numbness.

   **NOTE:**
   Progressive loss of strength or sensation is an important indicator of brain injury.

7. Treat the head injury.
   a. Treat a superficial head injury.
      i. Apply a dressing.
      ii. Observe for abnormal behavior or evidence of complications.
   b. Treat a head injury involving trauma.
      i. Maintain a patent airway using the jaw thrust maneuver.
      ii. If the casualty is unconscious, insert an oropharyngeal airway without hyper-extending the neck.
      iii. Administer high concentration oxygen by non-rebreather mask (NRB) and evaluate the need for artificial ventilations with supplemental oxygen.
      iv. Apply a cervical collar.
      v. Dress the head wound(s).
   vi. Control bleeding.

   **WARNING:**
   Do not apply pressure to or replace exposed brain tissue.

   vii. Treat for shock.
   viii. Monitor the casualty for convulsions or seizures.
   ix. Position the casualty with the head elevated 6 inches to assist with the drainage of blood from the brain.

   **CAUTION:**
   Do not give the casualty anything by mouth.

8. Continue to monitor the casualty and check and record the following at 5 minute intervals.
   a. Level of consciousness.
   b. Pupillary responsiveness and equality.
   c. Vital signs.
   d. Motor functions.

10. Evacuate the casualty.

**CHEST INJURIES**

Since chest injuries may cause severe breathing and bleeding problems, all chest injuries must be considered as serious conditions. Any casualty showing signs of difficulty in breathing without signs of airway obstruction must be inspected for chest injuries. The most serious chest injury that requires immediate first aid treatment is the sucking chest wound. This is a penetrating injury to the chest that produces a hole in the chest cavity. The chest hole causes the lung to collapse, preventing normal breathing functions. This is an extremely serious condition that will result in death if not treated quickly.
Casualties with open chest wounds gasp for breath, have difficulty breathing out, and may have a bluish skin color to their face. Frothy-looking blood may bubble from the wound during breathing. The proper treatment for a sucking chest wound is as follows:

**TREAT A CASUALTY WITH A CHEST INJURY**

**Scenario**

The 11M has a casualty with a chest injury. All other more serious injuries have been assessed and treated.

**Objective**

Treat a chest wound without causing additional injury to the casualty.

**Performance Steps**

**NOTE:**

Take Body Substance Isolation (BSI) precautions.

1. Perform an initial assessment of the casualty.
2. Check the casualty for signs and symptoms of chest injuries.
   a. Deformities, contusions, abrasions, punctures/penetrations (DCAP), bleeding, tenderness, lacerations, swelling (BTLS).
   b. Pleuritic pain that is increased by or occurs with respirations and is localized around the injury site.
   c. Labored or difficult breathing.
   d. Diminished or absent breath sounds.
   e. Cyanotic lips, fingertips, or fingernails.
   f. Rapid, weak pulse and low blood pressure.
   g. Coughing up blood or bloody sputum.
   h. Failure of one or both sides of the chest to expand normally upon inhalation.
   i. Paradoxical breathing - the motion of the injured segment of a flail chest, opposite to the normal motion of the chest wall.
   j. Enlarged neck veins.
   k. Coughing up blood or bloody sputum.
   l. Tracheal deviation - shift of the trachea from the midline toward the unaffected side due to pressure buildup on the injured side. THIS IS A LATE SIGN.

3. Check for an exit wound or injury.

4. Determine the type of injury.
   a. **Open pneumothorax** - air entering pleural space through defect in pleural wall.
      i. Signs and symptoms.
         1. Respiratory distress.
         2. Anxiousness.
         3. Tachypnea.
      ii. Treatment.
         1. Seal the wound(s), covering the larger wound first.

**NOTE:**

All penetrating chest wounds should be treated as if they were sucking chest wounds.

2. Cut the dressing wrapper on one long and two short sides and remove the dressing.

**NOTE:**

In an emergency, any airtight material can be used. It must be large enough so it is not sucked into the chest cavity.

3. Apply the inner surface of the wrapper to the wound when the casualty exhales.

4. Ensure that the covering extends at least two inches beyond the edges of the wound.
5. If the HM does not have the ability to perform a needle chest decompression, seal by applying overlapping strips of tape to three sides of the plastic covering to provide a flutter-type valve.

6. If the HM has the ability to perform a needle chest decompression (NCD), ensure all four sides of the occlusive dressing are secured. (NCD procedures outlined later.)

7. Cover the exit wound in the same way, if applicable.

**NOTE:**
Assess the effectiveness of the flutter valve when the casualty breathes.

When the casualty inhales, the plastic should be sucked against the wound, preventing the entry of air.

When the casualty exhales, trapped air should be able to escape from the wound and out the untaped side of the dressing.

8. Supplement with oxygen if available.

**WARNING:**
Complication - if tension pneumothorax is suspected, perform a needle chest decompression (NCD).

b. Rib fracture - generally caused by a direct blow to the chest or compression of the chest. Severe coughing can also cause rib fracture.

i. Signs and symptoms.
1. Pain is aggravated by respirations and coughing.
2. Crepitus is present.
3. The casualty will guard to protect the injury.

ii. Complications.
1. Internal bleeding (hemothorax).
2. Shock.

iii. Treatment.
1. Use a sling and swath to immobilize the affected side, i.e. immobilizing the arm as a means to support the rib cage.
2. Administer oxygen as necessary.

**NOTE:**
The broken rib may puncture the lung or the skin.

**WARNING:**
Do not tape, strap, or bind the chest, these interventions increase the development of pneumonia.

c. Flail chest - two or more ribs fractured in two or more places or a fractured sternum.

i. Signs and symptoms.
1. Severe pain at the site.
2. Rapid shallow breathing.
3. Paradoxical respirations.

ii. Complications.
1. Respiratory insufficiency.
2. Pneumothorax with hemothorax.

iii. Treatment.
1. Establish and maintain an airway.
2. Administer oxygen, if available.
3. Assist the casualty's respirations, if necessary.
4. Monitor the casualty for signs of hemothorax or tension pneumothorax, as necessary.
d. **Hemothorax** - bleeding from lacerated blood vessels in the chest cavity and or lungs. It results in the accumulation of blood in the chest cavity not outside the lungs.

i. Signs and symptoms.
   1. Hypotension due to blood loss.
   2. Shock.
   3. Cyanosis.
   4. Tightness in the chest.
   5. Mediastinal shift may produce deviated trachea away from the affected side. **LATE SIGN**
   6. Coughing up frothy red blood.

ii. Complications.
   1. Possibility of hypovolemic shock.
   2. Frequently accompanies a pneumothorax.

iii. Treatment.
   1. Establish and maintain an airway.
   2. Administer oxygen.
   3. Assist the casualty's breathing, as necessary

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**Tension pneumothorax.**

**NOTE:**
Condition in which air enters the chest cavity (pleural space) through a hole in the lung, expanding the space with every breath the casualty takes.

The air becomes trapped and cannot escape.

i. Signs and symptoms.
   2. Increased pressure in the chest causes the lung(s) to collapse.
   3. May result from the laceration of the lung by a broken rib or by spontaneous rupture of a bleb or lesion on the lung.

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ii. Treatment.
   1. Establish and maintain an airway.
   2. Perform NCD if indicated.
   3. Administer oxygen.
   4. Assist the casualty's respirations, as necessary.
   5. Monitor the casualty for progression of symptoms.

5. Treat the injury.
6. Treat the casualty for shock.
7. Record the care provided.
8. Evacuate the casualty.

**NOTE:**
Continue to assess the casualty.
The casualty should be evacuated by the most expedient means.

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**ABDOMINAL INJURIES**

A deep wound in the abdomen is likely to constitute a major emergency since there are many vital organs in this area. Abdominal wounds typically cause intense pain, nausea and vomiting, spasm of the abdominal muscles, and severe shock. Immediate surgical treatment is almost always required; therefore, the casualty must receive medical attention at once, or the chances of survival will be poor. The HM should give only the most essential first aid treatment, and concentrate efforts on getting the casualty to a medical treatment facility. The following first aid procedures may be of help to a person suffering from an abdominal wound.
ABDOMINAL INJURY ASSESSMENT

Scenario

The HM has a casualty with an open abdominal wound. All other more serious injuries have been assessed and treated.

Objective

Treat an open abdominal wound, minimize the effects of the injury, and stabilize the casualty without causing additional injury.

Performance Steps

NOTE:
Take Body Substance Isolation (BSI) precautions.

1. Position the casualty.
   a. Place the casualty on his back (face up).
   b. Ensure the casualty has a patent airway.
   c. Flex the casualty’s knees.
   d. Turn the casualty’s head to the side and keep the airway clear if vomiting occurs.

2. Treat for shock. Initiate one large bore (18 gauge) IV if the casualty is exhibiting signs and symptoms of shock.

WARNING:
The most important concern in the initial management of abdominal injuries is shock.

Shock may be present initially or develop later.

Neither the presence nor absence of a wound, nor the size of the external wound are safe guidelines for judging the severity of the wound

3. Expose the wound. Inspect for distention, contusions, penetration, eviscerations or obvious bleeding.

CAUTION:
Do not attempt to replace protruding internal organs or remove any protruding foreign objects.

4. Stabilize any protruding objects.

5. Apply a sterile abdominal dressing.

NOTE:
Protruding abdominal organs should be kept moist to prevent the tissue from drying out.

A moist, sterile dressing should be applied if available.

   a. Using the sterile side of the dressing, or other clean material, place any protruding organs near the wound.
   b. Ensure that the dressing is large enough to cover the entire mass of protruding organs or area of the wound.
   c. If large enough to cover the affected area, place the sterile side of the plastic wrapper directly over the wound to provide an additional barrier layer to protect the organs from rupture and contamination. Open abdominal wounds can become infected quickly and lead to systemic infection, or sepsis.
   d. Place the dressing directly on top of the wound or plastic wrapper, if used.
   e. Tie the dressing tails loosely at the casualty’s side.

CAUTION:
Do not apply pressure on the wound or expose internal parts.

   f. If two dressings are needed to cover a large wound, repeat steps 5a through 5e. Ensure that the ties of additional dressings are not tied over each other.
   g. If necessary, loosely cover the dressings with cravats. Tie them on the side of the casualty opposite that of the dressing ties.

6. Do not cause further injury to the casualty.
   a. Do not touch any exposed organs with bare hands.
   b. Do not try to push any exposed organs back into the body.
c. Do not tie the dressing tails tightly or directly over the dressing.
d. Do not give the casualty anything by mouth (NPO).

**NOTE:**
Continue to assess the casualty.

7. Prepare the casualty for evacuation.
   a. Place the casualty on his back (face up) with the knees flexed.
   b. If evacuation is delayed, check the casualty for signs of shock every 5 minutes.
   c. Consider pain management as necessary.
8. Record the treatment given.
9. Evacuate the patient.

**CHILDBIRTH EMERGENCIES**

Every HM must be prepared to handle the unexpected arrival of a new life into the world. If the HM is fortunate, a prepackaged sterile delivery pack will be available; unfortunately this is usually not the case. This pack will contain all the equipment needed for the normal delivery of a healthy baby. If the pack is not available the HM will require imaginative improvisation of clean alternatives.

When faced with an imminent childbirth, first determine whether there will be time to transport the expectant mother to a hospital. To help make this determination, the HM should try to find out:

- Which delivery will this be the woman (first vaginal deliveries normally take much longer than subsequent deliveries)
- Have there been any complications with this pregnancy (or previous pregnancies)
- Has her water broken or is there blood
- The time between contractions (if less than 3 minutes delivery is approaching)
- If the mother senses that she has to move her bowels (if so, then the baby's head is well advanced down the birth canal)
- If there is crowning of the baby's head at the vaginal opening (crowning indicates that the baby is ready to present itself)
- How long will it take to get to the hospital

The HM must weigh the answers to these questions and decide if it will be safe to transport the patient to the hospital.

**Preparation**

Prior to childbirth, The HM must quickly "set the stage."

- Do not allow the mother to go to the bathroom since straining may precipitate delivery. However, do not try to inhibit the natural process of childbirth
- The mother should lie back on a sturdy table, bed, or stretcher with a folded sheet or blanket placed under her buttocks for absorption and comfort
- Ensure one side of the pelvis is elevated (place hip roll under right or left side; left side is more common) to ensure blood flow in the pelvic region and thus ensuring oxygenation of the fetus: the weight of the fetus and uterus can compress the abdominal aorta resulting in insufficient blood flow
- Remove all of the patient’s clothing below the waist, bend the knees, move the thighs apart (i.e. lithotomy position), and drape her lower extremities with clean towels or sheets
- Don sterile gloves, or, if these are not available, the HM must rewash his or her hands
Normal Vaginal Delivery (NVD)

In a normal delivery, the HM’s calm professional manner and sincere reassurance to the mother will reduce her anxiety and make the delivery easier for everyone. Help the woman rest and relax as much as possible between contractions.

During a contraction, deep, open-mouth breathing will relieve some pain and straining. As the child’s head reaches the area of the rectum, the mother will feel an urgent need to defecate. Reassurance that this is a natural feeling and a sign that the baby will be born soon will help alleviate her apprehension.

DELIVERY STEPS.—Watch for the presentation of the top of the baby’s head.

1. Once the head appears, the HM takes up station at the foot of the bed and gently supports the head (with the palms of the hand) to keep it from emerging too quickly. Allow the head to come out slowly.

2. Once the head presents, direct the mother to breathe and not to push while checking for the umbilical cord. As more of the head appears, visually check to be sure that the umbilical cord is not wrapped around the neck.

3. Cord around the baby’s neck: If it is, either gently try to untangle the cord or move one section over the baby’s shoulder. If neither of these actions is possible, clamp the cord in two places, 2 inches apart, and cut it between the clamps.

4. Once the baby’s chin emerges, direct the mother to breathe and not to push.

5. Support the baby’s head with one hand and use the bulb syringe from the pack to suction the mouth and then the nostrils. Before placing the bulb in the baby’s mouth or nose, compress it; otherwise, a forceful aspiration into the lungs will result.

NOTE:
Always suction the mouth first and then the nose.

This is critical in newborns who have had a bowel movement (meconium) within the womb and need the meconium cleared from the airway.

6. The baby will now start a natural rotation to the left or right, away from the face-down position.

NOTE:
Baby needs to be on his or her side to allow for manipulation and delivery of the shoulders.

7. As this rotation occurs, keep the baby’s head in alignment with his or her body.

NOTE:
From this point on, it is essential to remember that the baby is VERY slippery, and great care must be taken not to drop him or her. The surface beneath the mother should extend at least 2 feet out from her buttocks so that the baby will not be hurt if he or she does slip.

8. The shoulders appear next, usually one at a time. Deliver the top shoulder first using the flexibility of the posterior pelvic floor to move the shoulder under and out from the symphysis pubic bone. The bottom shoulder will typically deliver itself with a bit of force. Remember, the baby is VERY slippery.

9. Keep one hand beneath the baby’s head, and use the other hand to support its emerging body.
Infant Care Post-Delivery

Care immediately after delivery is critical for successful transition of the baby from intrauterine circulation and oxygenation (all provided by the mother) to extrauterine circulation and oxygenation (all required of the baby). The following are steps to successfully transition the baby:

1. Airway and Breathing.
   a. Once the baby has been born, suction the nose and mouth again if breathing has not started.
   b. Wipe the baby’s face, nose, and mouth clean with sterile gauze.
   c. Vigorously rub the baby’s back and flick its feet to get the baby to cry and or to sustain a good healthy cry (if the cry is depressed). The reward is the baby’s hearty cry.

2. Circulation.
   a. Keep the baby level with the mother’s uterus until the cord is cut.
   b. Clamp the umbilical cord as the pulsations cease.
   c. Use two clamps from the prepackaged sterile delivery pack, 2 inches apart, with the first clamp 6 to 8 inches from the navel.
   d. Cut the cord between the clamps.
   e. For safety, use gauze tape to tie the cord 1 inch from the clamp toward the navel. Secure the tie with a square knot.

3. Warming.
   a. Wrap the baby in a warm, sterile blanket, and log its time of arrival.
   b. If the baby has a low body temperature, place chest to chest with the mother (who must be stable) and place a blanket over the two of them to allow for heat transfer from the mother.

Mother Care Post-Delivery

This is a relatively dangerous period for the mother, as hemorrhage and shock may occur. Steps must be taken to ensure all infection control procedures are followed. Additionally, close hemodynamic monitoring is needed as the mother transitions from pregnancy to post-partum physiologic status. The following are steps to ensure a successful and safe transition:

1. The placenta (afterbirth) will deliver itself in 10 to 20 minutes. Massaging the mother’s lower abdomen can aid this delivery. Do not pull on the umbilical cord to hasten its delivery. Log the time of the placenta’s delivery, and wrap it up for hospital analysis.

   NOTE:
   If there are any concerns regarding delivery of the placenta or its presentation upon delivery, immediately contact a medical officer for guidance.

2. Place a small strip of tape (½-inch wide), folded and inscribed with the date, time of delivery, and mother’s name, around the baby’s wrist.

3. Place the same identification tape around the mother’s wrist so that the mother and baby can be matched later at the medical treatment facility.

4. Monitor vital signs every 5 minutes for the first 15 minutes, every 15 minutes for three recordings, every 30 minutes for 2 recordings, and every hour for 4 hours. Then resort to vital signs every 4 hours. If the patient is bleeding heavily or shock signs and symptoms are present, continue every 5 minute vital signs until the mother is stabilized.

5. Monitor for uterine hemorrhage.
   a. The uterus should be gently massaged to keep it hard.
   b. For first time mothers, the uterus will be at or slightly above the navel.
c. For experienced mothers, the uterus will be at or slightly below the navel.

**NOTE:**
If the uterus appears too high or is offset to the right or left the mother has a full bladder that **must** be emptied (either on her own or via urinary catheterization).

A full bladder will prevent the uterus from contracting and closing the vessels that are bleeding.

d. Have mother put infant to breast to aid with contractions which clamps down the uterine arteries and veins and decreases the bleeding.

6. Nutrition and restoration of resources.
   a. The mother will need nourishment and will wish to rest and watch her baby.

7. Care of the vaginal opening and canal.
   a. The mother should keep her hands away from the area surrounding the birth outlet.
   b. If uncontaminated water is available, she may wish to wash off her thighs. She may get up and go to the bathroom or seek better shelter.
   c. All care should be taken to avoid introducing infection into the birth canal.
   d. Educate the mother about the amount and color of vaginal discharge.
      i. She can expect some vaginal discharge for several days.
      ii. This is reddish for the first day or so but lightens and becomes less profuse within a few days.
      III. May bleed longer than a typical period.
      iv. If bleeding increases, immediately assess the location and firmness of the uterus and ensure the mother has voided recently.

**Final Notes**

Stay with the mother until relieved by competent personnel. Almost all emergency births are normal. The babies typically thrive and the mothers recover quickly. It is very important when assisting with an emergency delivery that the HM continually reassures the mother and attempts to keep her calm.

**COMPLICATIONS IN CHILDBIRTH**

Unfortunately, not all deliveries go smoothly. The following sections cover various complications in childbirth.

**Breech Delivery**

A breech delivery occurs when the baby’s legs and or buttocks emerge first. Follow the steps for a normal delivery, and support the lower extremities with one hand. If the head does not emerge within 3 minutes, try to maintain an airway by gently pushing fingers into the vagina. Push the vagina away from the baby’s face and open his or her mouth with one finger. Get medical assistance immediately.

**Prolapsed Cord**

If the cord precedes the baby, protect it with moist, sterile wraps. If a physician cannot be reached quickly, place the mother in an extreme shock position. Give the mother oxygen, if available, and gently move a sterile gloved hand into the vagina to keep its walls and the baby from compressing the cord. The HM will provide support until the baby is delivered. The HM cannot remove his or her hand until told to do so by a medical officer. Get medical assistance immediately.

**Excessive Bleeding**

If the mother experiences severe bleeding, treat her for shock and give her oxygen, if available. Place sanitary napkins over the vaginal entrance and rush her to a hospital.
If hemorrhaging does occur, do the following:

1. The uterus should be gently massaged to keep it hard.
2. The woman should lie flat, and the bottom of the bed should be elevated.
3. Put a cold pack (such as a small towel dipped in cold water and wrung out) on the lower abdomen to irritate the uterus to contract.
4. Put pressure on the perineum with several sanitary napkins and the pressure of a hand.

Limb Presentation

If a single limb presents itself first, immediately get the mother to a hospital.

NON-TACTICAL TRAUMA ASSESSMENT

If there is no immediate danger to the HM or the surroundings are non-threatening, then the HM’s only limitations are the resources available and the nature of the injury. During these types of scenarios, it is quite reasonable to use the following patient assessment algorithm while assessing a trauma patient (Fig. 21-3).
Basic Trauma Life Support Assessment:

Scene Survey
- Is scene safe?
- Mechanism of Injury (MOI)
- Number of patient's?
- Any HAZMAT?

Primary Assessment (Exposure As You Go)
- Treat life threatening injuries as found.
- Control C-Spine
- Assess level of consciousness (AVPU)

A: Open and maintainable?
   CONTROL C-SPINE

B: Assess rate and quality
   - Assess for deviated trachea and jugular vein distention
   - Expose and lock and feel the chest
   - Is there equal rise and fall?
   - DCAP-BTLS, fail segments?

C: Evaluate skin color and temperature
   - Feel carotid and radial pulse
   - Evaluate pulse rate, strength, and quality

Head / Face - DCAP-BTLS
Neck - DCAP-BTLS
   - Step Off?
   - Apply C-collar

Shoulders - DCAP-BTLS
Abdomen - DCAP-BTLS
   - Tenderness, Rigidity, Distension (TRD)

Pelvis - DCAP-BTLS
   - Tenderness, Instability, Crepitus (TIC)
   - Priapism (Erection)?

Legs - DCAP-BTLS
   - PMS (Pulse Motor Sensory)

Arms - DCAP-BTLS
   - PMS (Pulse Motor Sensory)

Back - Log roll survivor if appropriate, if not, check for
   - DCAP-BTLS, Step-Offs

Secure to Liter

ENROUTE:
- Re-assess ABC's and interventions
- Detailed exam head, eyes, ears, nose
- Additional procedures as appropriate
- Give abbreviated report

Physical Exam Acronyms:

A: Alert
V: Verbal
F: Fair/Unresponsive
U: Unresponsive
B: Bums
T: Tenderness
L: Lacerations
S: Swelling

Don BSI

Safe? HAZMAT MOI #FTS

PT Assessment

Airway Open/Maintainable?

Breathing?

Circulation?

Still Breathing?

2 breaths go in?

Jaw Thrust

Rescue Breathing: 1:5 SEC 24 in 2 Min

Once Breathing Go to Circulation

Continue Assessment
TCG GUIDELINES FOR CARE

Basic Management Plan for Care Under Fire

1. Return fire/take cover.
2. Direct/expect casualty to remain engaged as a combatant, if appropriate.
3. Direct casualty to move to cover/apply self-aid if able.
4. Try to keep the casualty from sustaining additional wounds.
5. Airway management is best deferred until the Tactical Field Care Phase.
6. Stop LIFE-THREATENING external hemorrhage if tactically Feasible.
   a. Direct casualty to control hemorrhage by self-aid if able.
   b. Use a tourniquet for hemorrhage that is anatomically amenable to tourniquet application.
   c. For hemorrhage that cannot be controlled with a tourniquet, apply currently approved hemostatic dressing with pressure.

Basic Management Plan for Tactical Field Care

1. Casualties with an altered mental status should be disarmed immediately.
2. Airway Management.
   a. Unconscious casualty without airway obstruction.
      i. Chin lift or jaw thrust maneuver.
      ii. Nasopharyngeal airway.
   iii. Place casualty in the recovery position.
   b. Casualty with airway obstruction or impending airway obstruction.
      i. Chin lift or jaw thrust maneuver.
      ii. Nasopharyngeal airway.
      iii. Allow casualty to assume a position that best protects the airway, to include sitting up.
      iv. Place unconscious casualty in the recovery position.
      v. If previous measures unsuccessful: Surgical cricothyroidotomy (with lidocaine if conscious)
   a. In a casualty with progressive respiratory distress and known or suspected torso trauma, consider a tension pneumothorax and decompress the chest on the side of the injury with a 14-gauge, 3.25 inch needle/catheter unit inserted in the second intercostal space at the midclavicular line. Ensure that the needle entry into the chest is not medial to the nipple line and is not directed towards the heart.
   b. All open and or sucking chest wounds should be treated by immediately applying an occlusive material to cover the defect and securing it in place. Monitor the casualty for the potential development of a subsequent tension pneumothorax.
4. Bleeding.
   a. Assess for unrecognized hemorrhage and control all sources of bleeding. If not already done, use a CoTCCC-recommended tourniquet to control life-threatening external hemorrhage that is anatomically amenable to tourniquet application or for any traumatic amputation. Apply directly to the skin 2-3 inches above wound.
b. For compressible hemorrhage not amenable to tourniquet use or as an adjunct to tourniquet removal (if evacuation time is anticipated to be longer than two hours), use Combat Gauze as the hemostatic agent of choice. Combat Gauze should be applied with at least 3 minutes of direct pressure. Before releasing any tourniquet on a casualty who has been resuscitated for hemorrhagic shock, ensure a positive response to resuscitation efforts (i.e., a peripheral pulse normal in character and normal mentation if there is no traumatic brain injury [TBI]).

c. Reassess prior tourniquet application. Expose wound and determine if tourniquet is needed. If so, move tourniquet from over uniform and apply directly to skin 2-3 inches above wound. If a tourniquet is not needed, use other techniques to control bleeding.

d. When time and the tactical situation permit, a distal pulse check should be accomplished. If a distal pulse is still present, consider additional tightening of the tourniquet or the use of a second tourniquet, side by side and proximal to the first, to eliminate the distal pulse. Expose and clearly mark all tourniquet sites with the time of tourniquet application. Use an indelible marker.

5. Intravenous (IV) access:
   a. Start an 18-gauge IV or saline lock if indicated.
   b. If resuscitation is required and IV access is not obtainable, use the intraosseous (IO) route.

6. Fluid resuscitation:
   a. Assess for hemorrhagic shock; altered mental status (in the absence of head injury) and weak or absent peripheral pulses are the best field indicators of shock.

b. If not in shock:
   i. No IV fluids necessary.
   ii. PO fluids permissible if conscious and can swallow.

c. If in shock:
   i. Hextend®, 500-mL IV bolus.
   ii. Repeat once after 30 minutes if still in shock.
   iii. No more than 1000 mL of Hextend®.

d. Continued efforts to resuscitate must be weighed against logistical and tactical considerations and the risk of incurring further casualties.

e. If a casualty with TBI is unconscious and has no peripheral pulse, resuscitate to restore the radial pulse.

   a. Minimize casualty's exposure to the elements. Keep protective gear on or with the casualty if feasible.
   b. Replace wet clothing with dry if possible.
   c. Apply Ready-Heat Blanket to torso.
   d. Wrap in Blizzard Rescue Blanket.
   e. Put Thermo-Lite Hypothermia Prevention System Cap on the casualty's head, under the helmet.
   f. Apply additional interventions as needed and available.
   g. If mentioned gear is not available, use dry blankets, poncho liners, sleeping bags, body bags, or anything that will retain heat and keep the casualty dry.
8. Penetrating Eye Trauma.
   a. If a penetrating eye injury is noted or suspected.
      i. Perform a rapid field test of visual acuity.
   b. Cover the eye with a rigid eye shield (NOT a pressure patch).
   c. Ensure that the 400 mg moxifloxacin tablet in the combat pill pack is taken if possible and that IV/IM antibiotics are given as outlined below if oral moxifloxacin cannot be taken.
9. Monitoring:
   a. Pulse oximetry should be available as an adjunct to clinical monitoring.
   b. Readings may be misleading in the settings of shock or marked hypothermia.
10. Inspect and dress known wounds.
11. Check for additional wounds.
12. Provide analgesia as necessary.
   a. Able to fight:
      i. These medications should be carried by the combatant and self-administered as soon as possible after the wound is sustained.
         1. Mobic®, 15 mg PO once a day.
         2. Tylenol®, 650-mg bilayer caplet, 2 PO every 8 hours.
   b. Unable to fight:

   ![NOTE:]
   Have naloxone readily available whenever administering opiates.

   i. Does not otherwise require IV/IO access.
   ii. Oral transmucosal fentanyl citrate (OTFC), 800 µg transbuccally.
   iii. Recommend taping lozenge-on-a-stick to casualty's finger as an added safety measure.
   iv. Reassess in 15 minutes.
   v. Add second lozenge, in other cheek, as necessary to control severe pain.
   vi. Monitor for respiratory depression.
   vii. IV or IO access obtained:
      1. Morphine sulfate, 5 mg IV/IO.
      2. Reassess in 10 minutes.
      3. Repeat dose every 10 minutes as necessary to control severe pain.
      4. Monitor for respiratory depression.
   viii. Promethazine, 25 mg IV/IM/IO every 6 hours as needed for nausea or for synergistic analgesic effect.
13. Splint fractures and recheck pulse.
   a. If able to take PO:
      i. Moxifloxacin, 400 mg PO one a day.
   b. If unable to take PO (shock, unconsciousness):
      i. Cefotetan, 2 g IV (slow push over 3-5 minutes) or IM every 12 hours OR
      ii. Ertapenem, 1 g IV/IM once a day.
15. Communicate with the casualty if possible.
   a. Encourage; reassure.
   b. Explain care.
   c. Cardiopulmonary resuscitation (CPR) - Resuscitation on the battlefield for casualties of blast or penetrating trauma who have no pulse, no ventilations, and no other signs of life will not be successful and should not be attempted.
   d. Documentation of Care - Document clinical assessments, treatments rendered, and changes in the casualty’s status. Forward this information with the casualty to the next level of care.
Basic Management Plan for Tactical Evacuation Care

The new term “Tactical Evacuation” includes both Casualty Evacuation (CASEVAC) and Medical Evacuation (MEDEVAC) as defined in Joint Publication 4-02.

1. Airway Management.
   a. Unconscious casualty without airway obstruction:
      i. Chin lift or jaw thrust maneuver.
      ii. Nasopharyngeal airway.
      iii. Place casualty in the recovery position.
   b. Casualty with airway obstruction or impending airway obstruction:
      i. Chin lift or jaw thrust maneuver.
      ii. Nasopharyngeal airway.
      iii. Allow casualty to assume any position that best protects the airway, to include sitting up.
      iv. Place unconscious casualty in the recovery position.
      v. If above measures are unsuccessful:
         vi. Laryngeal Mask Airway (LMA)/incubating LMA OR
         vii. Combitube® OR
         viii. Endotracheal intubation OR
      ix. Surgical cricothyroidotomy (with lidocaine if conscious).
   c. Spinal immobilization is not necessary for casualties with penetrating trauma.

2. Breathing:
   a. In a casualty with progressive respiratory distress and known or suspected torso trauma, consider a tension pneumothorax and decompress the chest on the side of the injury with a 14-gauge, 3.25 inch needle/catheter unit inserted in the second intercostal space (over the top of the 3rd rib) at the mid-clavicular line. Ensure that the needle entry into the chest is not medial to the nipple line and is not directed towards the heart.
   b. Consider chest tube insertion if no improvement and or long transport is anticipated.
   c. Most combat casualties do not require supplemental oxygen, but administration of oxygen may be of benefit for the following types of casualties:
      i. Low oxygen saturation by pulse oximetry.
      ii. Injuries associated with impaired oxygenation.
      iii. Unconscious casualty.
      iv. Casualty with TBI (maintain oxygen saturation > 90%).
      v. Casualty in shock.
      vi. Casualty at altitude.
   d. All open and or sucking chest wounds should be treated by immediately applying an occlusive material to cover the defect and securing it in place. Monitor the casualty for the potential development of a subsequent tension pneumothorax.
3. Bleeding:

a. Assess for unrecognized hemorrhage and control all sources of bleeding. If not already done, use a Council of TCCC (CoTCCC)-recommended tourniquet to control life-threatening external hemorrhage that is anatomically amenable to tourniquet application or for any traumatic amputation. Apply directly to the skin 2-3 inches above wound.

b. For compressible hemorrhage not amenable to tourniquet use or as an adjunct to tourniquet removal (if evacuation time is anticipated to be longer than two hours), use Combat Gauze as the hemostatic agent of choice. Combat Gauze should be applied with at least 3 minutes of direct pressure. Before releasing any tourniquet on a casualty who has been resuscitated for hemorrhagic shock, ensure a positive response to resuscitation efforts (i.e., a peripheral pulse normal in character and normal mentation if there is no TBI).

c. Reassess prior tourniquet application. Expose wound and determine if tourniquet is needed. If so, move tourniquet from over uniform and apply directly to skin 2-3 inches above wound. If a tourniquet is not needed, use other techniques to control bleeding.

d. When time and the tactical situation permit, a distal pulse check should be accomplished. If a distal pulse is still present, consider additional tightening of the tourniquet or the use of a second tourniquet, side by side and proximal to the first, to eliminate the distal pulse.

e. Expose and clearly mark all tourniquet sites with the time of tourniquet application. Use an indelible marker.

4. Intravenous (IV) access:

a. Reassess need for IV access.

i. If indicated, start an 18-gauge IV or saline lock.

ii. If resuscitation is required and IV access is not obtainable, use intraosseous (IO) route.

5. Fluid resuscitation:

a. Reassess for hemorrhagic shock: altered mental status in the absence of brain injury and or change in pulse character.

b. If not in shock:

i. No IV fluids necessary.

ii. PO fluids permissible if conscious and can swallow.

c. If in shock:

i. Hextend® 500-mL IV bolus.

ii. Repeat once after 30 minutes if still in shock.

iii. No more than 1000 mL of Hextend®.

d. Continue resuscitation with packed red blood cells (PRBCs), Hextend® (not to exceed 1000 ml), or Lactated Ringer’s solution (LR) as indicated.

e. If a casualty with TBI is unconscious and has a weak or absent peripheral pulse, resuscitate as necessary to maintain a systolic blood pressure of 90 mmHg or above.


a. Minimize casualty’s exposure to the elements. Keep protective gear on or with the casualty if feasible.


c. Apply additional interventions as needed.

d. Use the Thermal Angel or other portable fluid warmer on all IV sites, if possible.

e. Protect the casualty from wind if doors must be kept open.
7. Penetrating Eye Trauma:
   a. If a penetrating eye injury is noted or suspected:
      i. Perform a rapid field test of visual acuity.
      ii. Cover the eye with a rigid eye shield (NOT a pressure patch).
      iii. Ensure that the 400 mg moxifloxacin tablet in the combat pill pack is taken if possible and that IV/IM antibiotics are given as outlined below if oral moxifloxacin cannot be taken.

8. Monitoring.
   a. Institute pulse oximetry and other electronic monitoring of vital signs, if indicated.

9. Inspect and dress known wounds if not already done.

10. Check for additional wounds.

11. Provide analgesia as necessary.
   a. Able to fight:
      i. Mobic®, 15 mg PO once a day.
      ii. Tylenol®, 650-mg bilayered caplet, 2 PO every 8 hours.
   b. Unable to fight:

      **NOTE:**
      Have naloxone readily available whenever administering opiates.

      i. Does not otherwise require IV/IO access:
         1. Oral transmucosal fentanyl citrate (OTFC) 800 micrograms transbuccally.
         2. Recommend taping lozenge-on-a-stick to casualty’s finger as an added safety measure.
         3. Reassess in 15 minutes.
         4. Add second lozenge, in other cheek, as necessary to control severe pain.

   5. Monitor for respiratory depression.
   ii. IV or IO access obtained:
      1. Morphine sulfate, 5 mg IV/IO.
      2. Reassess in 10 minutes.
      3. Repeat dose every 10 minutes as necessary to control severe pain.
      4. Monitor for respiratory depression.
   iii. Promethazine, 25 mg IV/IM/IO every 6 hours as needed for nausea or for synergistic analgesic effect.

12. Reassess fractures and recheck pulses.

13. Antibiotics: recommended for all open combat wounds.
   a. If able to take PO:
      i. Moxifloxacin, 400 mg PO once a day.
   b. If unable to take PO (shock, unconsciousness):
      i. Cefotetan, 2 g IV (slow push over 3-5 minutes) or IM every 12 hours OR
      ii. Ertapenem, 1 g IV/IM once a day.

14. The Pneumatic Anti-shock Garment (PASG) may be useful for stabilizing pelvic fractures and controlling pelvic and abdominal bleeding. Application and extended use must be carefully monitored. The PASG is contraindicated for casualties with thoracic or brain injuries.

15. Documentation of Care:
   a. Document clinical assessments, treatments rendered, and changes in casualty’s status on a TCCC Casualty Card.
   b. Forward this information with the casualty to the next level of care.