Answers to Assessment in Action and Points to Ponder

Section 4: Medical Emergencies

Chapter 10: General Pharmacology

Assessment in Action

1. C. obtain an order from medical control.

The scope of practice requires the EMT-B to obtain permission either online or by standing orders to assist the patient in administering epinephrine.

2. B. SQ/IM injections.

Epinephrine is administered either by a subcutaneous (SQ) or intramuscular injection (IM).

3. D. document all pertinent information.

The EMT-B must document any medication administered. This documentation should include the medication name, route, dose, time administered, whether it was ordered by medical control or standing order, and patient response.

4. A. contraindication.

Situations or circumstances in which a medication should not be delivered to a patient are defined as contraindications.

5. A. side effect of the medication.

Any patient effects **not** desired when giving a medication are defined as side effects.

6. C. a sharps container.

For the safety of all in preventing an exposure to infectious diseases, all needles must be placed in a sharps container "at point of use." This must be done right after use.

7. B. nonrebreathing mask.

Nonrebreathing masks deliver in excess of 90% oxygen concentrations. This is desired for any patient with potential shock.

8. C. dilating passages in the lungs.

The effect of epinephrine when used to treat anaphylaxis is major dilation of the bronchioles and lower air passages in the lungs.

9. The primary difference is in absorption time. For immediate absorption the following routes are used: intravenous (IV), intraosseous (IO), and rectal (PR). For rapid to immediate absorption, the inhalation route is used. The moderate routes include the intramuscular (IM) route. The sublingual (SL) route is rapid. Slow routes include subcutaneous (SQ), ingestion, and transcutaneous routes.

10. The five medications that must be carried on an EMS unit include oxygen, oral glucose, activated charcoal, aspirin, and epinephrine. Oxygen is used for the treatment of hypoxemia and shock, oral glucose for hypoglycemia, activated charcoal for poisoning, aspirin for acute coronary syndromes (chest pain), and epinephrine for cardiac stimulation, asthma, and anaphylaxis.

11. Polypharmacy is the act of taking multiple medications. This is commonly found in the geriatric populations. The older patient who takes multiple medications gives the EMT-B several challenges.

12. In order for the cells of the body to survive, they need sugar (glucose). If the body's glucose level drops too low, cells will begin to die. The EMT-B must use oral glucose to treat hypoglycemia.

Points to Ponder

Patients should not use medications prescribed to other people. Inhalers are usually prescribed to be used once or twice every 4 hours, but this patient has been using the metered-dose inhaler "all day" and has potentially taken too much of the medication. Also, the patient could be infectious, so proper BSI precautions must be taken.

Chapter 11: Respiratory Emergencies

Assessment in Action

1. C. dyspnea.

The EMT-B should, by this part of the course, understand basic medical terminology. The term dyspnea is used to describe any patient having difficulty breathing.

2. A. absent or decreased breath sounds on one side.

The patient's history of lung disease, current history of coughing, sudden onset of dyspnea, and pleural pain should alert the EMT-B of a spontaneous pneumothorax. During the initial

assessment as well as the focused medical exam, the EMT-B must listen to lung sounds. The absent or decreased lung sounds will help the EMT-B confirm the possibility of a pneumothorax.

3. C. inadequate breathing.
The EMT-B must quickly recognize the patient with signs and symptoms of inadequate breathing. Pale skin color, cyanosis, increased pulse rate, increased respiratory rate, and coughing are all signs of inadequate breathing.

4. D. a spontaneous pneumothorax.
Spontaneous pneumothorax occurs in patients with chronic lung disease with absent lung sounds and pain on one side. Pleural pain on inspiration and exhalation are additional signs.

5. A. a nonrebreathing mask at 10 to 15 L/min.
This patient is experiencing compensated shock from respiratory insufficiency. Signs and symptoms, vital signs, and patient appearance all lead to the need for high concentrations of oxygen.

6. D. sitting up.
Most patients with dyspnea find the position of comfort to be the Fowler's or semi-Fowler's position. The conscious patient with respiratory difficulty is often orthopneic.

7. A. assist the patient's respirations with a BVM device.
Because this injury will require surgical treatment or ALS intervention, the patient's condition will likely deteriorate. The EMT-B must be prepared to intervene. As the patient becomes more hypoxic, changes in level of consciousness will occur. Dyspnea will continue to get worse and the use of an oropharyngeal airway, nasopharyngeal airway, and BVM device may be needed to support ventilations. It must also be noted as the pneumothorax grows, it may become more difficult to "bag" the patient.

8. The EMT-B must understand the physiologic and psychological changes as patients grow older. Additionally, multiple diseases and medications for these diseases intensify and sometimes mask other illnesses. Medical problems and psychological problems such as depression are common. Loss of independence and mobility often leads to situations far more serious than the reason you were called for initially. Respiratory problems in older people are often intensified by years of inhalation of toxins. Cigarette smoke and inhaled industrial toxins such as coal dust are

the main examples of such toxins; however, any pollutant, for example smog, could add to the problem.

9. Epiglottitis is caused by a severe bacterial infection. It has a sudden onset and progresses rapidly. As the infection progress, severe edema forms in the larynx and epiglottis. The epiglottis swells to 2 to 3 times its normal size. This swelling obstructs the airway, making this a true medical emergency. Placing anything in the patient's mouth may make things worse.

10. COPD is composed of three separate disease processes: emphysema, bronchitis, and asthma. Emphysema and bronchitis are the processes of concern here, discussed in this chapter.

The underlying cause of both emphysema and chronic bronchitis is inhalation of toxins. Asthma attacks are "triggered" by an allergic reaction. All three diseases reduce the amount of oxygen to be diffused into the blood stream and limit the body's removal carbon dioxide. Emphysema and chronic bronchitis attack older patients, whereas asthma attacks patients of all ages.

Patients with emphysema are sometimes called "pink puffers." Patients with chronic bronchitis are sometimes called "blue bloaters."

11. The retention of carbon dioxide in healthy patients triggers the respiratory process. Increases in levels of CO_2 in the blood will increase the rate of respirations. However, patients with COPD routinely have high CO_2 levels in their blood stream. For this reason, the body gets used to the high CO_2 levels and uses other means such as hypoxic drive to control respirations.

Points to Ponder

The EMT-B must try to convince the patient to be transported to the emergency department. In addition to the treatment of this patient for respiratory problems, the EMT-B has an obligation to look at other long-term issues. Could the patient be suffering from depression? As for the condition of the house, is the patient being neglected? Can the patient take care of himself or is a family member or friend needed? Does the patient need home health care or need to be moved to an assisted-living facility or long-term care facility? Treatment for depression and some type of assistance would ensure the proper medical care, such as compliance with medications, and proper nutrition.

Chapter 12: Cardiovascular Emergencies

Assessment in Action

1. A. acute myocardial infarction (AMI).

The signs and symptoms, past medical history, medications, and events leading to the illness all meet the indications of an AMI.

2. A. angina pectoris.
Chest pain for angina pectoris usually does not last for more than 15 minutes. Chest pain for AMI lasts longer then 15 minutes and is not always relieved by nitroglycerin.

3. B. nitroglycerin.
In specific situations the EMT-B may assist patients in taking their nitroglycerin. The medication must be prescribed to the patient and must have a current date (cannot be expired). The patient must have a stable blood pressure and it must be approved by medical control online or off line.

4. D. a blockage or occlusion of the coronary artery.
The definition of atherosclerosis is a build up of fat in the lumen of the arteries and veins. This build up of fat causes a narrowing that will collect a clot (fibrin), causing a total blockage of blood flow in that artery.

5. D. cardiac arrest.
A blocked coronary artery will cause death of the cardiac muscle. If this is not corrected in a reasonable time, the heart will stop. This is called cardiac arrest.

6. C. loss of perfusion (shock).
Loss of perfusion or decreased perfusion is the definition of shock. As the body goes into shock the sympathetic nervous system kicks in, causing the peripheral arteries to constrict. This decrease in blood causes the body to look very pale and the skin to be cool to the touch.

7. B. congestive heart failure (CHF).
AMIs can lead to sudden death, cardiogenic shock, and long-term decreased pump ability called congestive heart failure.

8. A. cardiac arrhythmia.
Any abnormal heartbeat is defined as a cardiac arrhythmia.

9. AMI pain is **not** caused by exertion and it does not resolve in a few minutes. Pain of AMI is **not** relieved after administering nitroglycerin.

10. Blood flows from the right atrium to the right ventricle to the lungs through the pulmonary artery, back from the lungs through the pulmonary vein to the left atrium, to the left ventricle, and out through the aorta to the body. It then moves from the aorta to arteries to arterioles to capillaries, which is where the exchange of oxygen takes place. The blood then continues to venules to veins to the inferior and superior vena cava, and back to the right atrium.

11. Congestive heart failure is a chronic disease of the heart muscle. As the muscle gets older and damaged from lack of oxygen the muscle loses strength. As the heart muscle pump is weakened, blood backs up. In right-sided CHF blood backs up from the right atrium to the body. This causes peripheral edema to the legs (ankles) and sometimes the arms. With left-sided failure the blood backs up into the lungs, causing pulmonary edema. The treatment for minor CHF includes making the patient comfortable and providing oxygen by nasal cannula. More severe CHF will require more attention. High-flow oxygen by a nonrebreathing mask, supporting ventilations with a BVM, and rapid transport will be required.

12. The AED is for treatment of cardiac arrest from ventricular fibrillation. The AED should be turned on and the pads placed on the patient's chest. Stop CPR and make sure you are not touching the patient. Push the analyze button, follow the voice directions, and push the shock button if indicated.

Points to Ponder

This patient is in CHF (heart failure). If not treated, the patient will soon experience sudden cardiac arrest and possible death. You need to explain this to her and ensure that she understands the consequences of refusing treatment. Talk with her in a calm, respectful manner to convey that you have her best interests in mind. You may need the assistance of medical control to help convince her.

Chapter 13: Neurologic Emergencies

Assessment in Action

1. D. Stroke

Information from the dispatch can begin to paint a picture of the scene and the patient before you even arrive. Do not make assumptions, but learn to use all the information you gather from the moment you receive the call. On the basis of the dispatch details alone, you question the likelihood of stroke. Your physical assessment finds that her blood pressure is dangerously high, another sign pointing you in this direction.

2. B. High blood pressure
Although you may hear that she has any of the above conditions, high blood pressure would cause concern, especially if this patient has been unable to control her blood pressure levels for an extended period of time. Chronic hypertension can cause damage to the blood vessels in the body and brain, increasing the likelihood of stroke.

3. D. Berry aneurysm
When a hemorrhagic stroke happens in a person who is healthy and young, it is likely the cause of a weakness in a blood vessel called a berry aneurysm. These patients may have no significant medical history or evidence of this condition prior to having a stroke.

4. C. irritation of brain tissue.
The most likely cause of this severe headache is from the irritation of blood on the tissue of the brain after the vessel swells and ruptures. When a patient tells you they have the worst headache they have ever felt, believe them!

5. D. All of the above
These tests are part of your focused physical exam for patients you suspect of having a stroke. If any one of the three tests is positive (abnormal), your patient may be having a stroke.

6. D. B and C
The Cincinnati Stoke Scale is utilized in responsive patients. Responsiveness of patients who are not awake and alert needs to be quickly determined using the AVPU scale. AVPU is a quick initial determination of a patient's level of consciousness. When you reevaluate a patient with altered mental status, you should calculate a Glasgow Coma Score.

7. These patients are experiencing receptive aphasia. They will possess clear speech, but will respond to your questions inappropriately. For example, you ask the following question: "What is your name?" the patient replies, "Thursday."

8. Cerebrovascular accidents are true medical emergencies when every minute counts. Some patients are candidates to receive clot-busting medications, but before they receive these medications they must be screened and tested. One portion of the screening criteria involves time. If too much time has passed, patients will not benefit from clot-busting medications. Some hospitals may not be readily equipped to carry out the required tests. Prompt communication with

the receiving facility can avoid unnecessary delays and provide the best outcome possible for the patient.

9. No. There may be no way to initially differentiate between a TIA and a CVA as some can take up to 24 hours to resolve. Although TIAs will resolve, they are often precursors to the 'big one.' Even if the signs and symptoms resolve, you must provide appropriate treatment and prompt transport for further evaluation.

10. Two of the most common medical emergencies that you will encounter as an EMT-B are insulin shock and seizures. Hypoglycemia and the postictal state of seizures can appear very similar to strokes. In some patients, you may note one-sided weakness or hemiparesis. The patient will also be confused and slow to respond. Thorough patient assessment and good history-taking will help you determine the underlying medical emergency.

Points to Ponder

Imagine how you would feel if you were ill or injured in a foreign country. If you were unable to speak or understand the native language, what kind of impact would this have on your physical and emotional state? This situation provides some comparison of what it must be like for a stroke patient, who either cannot speak or understand a language that they normally know. You should be patient and supportive. The patient will likely be frightened and anxious. Utilize other forms of communication to interview your patient. The patient may be able to write with the unaffected hand or blink to yes or no questions. If the stroke happened while he was sleeping, it will be impossible to pinpoint the time when it occurred.

Chapter 14: The Acute Abdomen

Assessment in Action

1. D. Ruptured appendix

Obviously this patient has the signs and symptoms of appendicitis; however, it is most important to realize that his appendix has now ruptured. He is running a fever and is in shock. He must be transported to the hospital immediately.

2. C. referred pain.

This phenomenon occurs when pain is perceived at a distal point on the body and is the result of connections between the body's two separate nervous systems. For example, when a patient experiences inflammation of the gallbladder, he or she may experience pain in the right shoulder.

3. A. Around the navel
A common sign of appendicitis is pain around the navel, or periumbilical pain. This pain often manifests as cramping pain around the navel and then, as the condition worsens, gradually travels to the right lower quadrant.

4. A. Guarding
Guarding is a natural, protective reaction to touch that elicits pain. The muscle rigidity that comes from pushing on tender areas is precisely why you should start your exam furthest away from the source of abdominal pain. If you start at the source of the pain first, you will likely be unable to perform an accurate assessment because your patient will instinctively guard the abdomen throughout your exam.

5. A. Drawing up the right knee
Patients will naturally place themselves in a position of greatest comfort. Patients experiencing the pain associated with appendicitis will frequently find comfort in drawing up their right knee towards their stomach. This relaxes the abdominal wall in the area of the appendix.

6. D. rebound tenderness
Rebound tenderness is a sign that the peritoneum or abdominal wall lining is inflamed and is therefore irritated. Guarding and rebound tenderness are common findings in appendicitis.

7. Any time a patient has the possibility of going to surgery, he or she should not be allowed any food or drink; however, simply telling the patient ‘no’ without offering an explanation can make you seem insensitive to his or her needs. Always explain what you are doing and why. An alternative to giving the patient a drink would be to moisten a washcloth and allow the patient to suck on that or using a prepackaged oral swab to moisten a dry mouth.

8. A bumpy ambulance ride can be excruciating for the patient with an acute abdomen. These patients will have pain even when lying still, so jolts and jostles likely will cause extreme pain. Take care when moving the patient and if at all possible, avoid extremely bumpy roads while transporting the patient to the hospital.

9. Be very gentle. You should palpate the quadrant you suspect of being the source of pain last. Rough palpation is not only uncomfortable for the patient, causing the exam to yield poor results, but can also cause inflamed organs to be damaged or rupture.

10. Body position can provide a clue as to how a patient is feeling and where he or she is feeling pain. These are not hard and fast rules, but clues that will assist you in narrowing the possible underlying cause of the patient's signs and symptoms.

11. There are a wide variety of causes for sudden, severe abdominal pain. If the pain is masked through the administration of analgesics, the physician may have difficulty in pinpointing the exact cause of the patient's pain. If the patient has taken any pain medications prior to your arrival, this will be important information to share with the receiving hospital's emergency department.

Points to Ponder

Children and young adults may feel more comfortable exchanging information with you without parents or family members present. They may fear some sort of discipline if they truthfully answer your questions. For instance, if a teenage girl is sexually active without her parents' knowledge, she may lie or hesitate in sharing that information with you, especially if she is late in her menstrual cycle or is in fact pregnant. However, it is important to ask about last menstrual cycles and any difficulties associated with menses/reproductive organs. There are a host of potential causes of abdominal pain in women, ranging from ovarian cysts to ectopic pregnancy. It is also important to note that parents may become defensive or agitated if you address this subject matter with their child. You must tactfully obtain as much information as possible from the patient while simultaneously balancing the potential reaction of the family. This can be a difficult task that may be more successful if you can discretely separate the patient from her family members.

Chapter 15: Diabetic Emergencies

Assessment in Action

1. B. diabetic coma.

With the history of being sick for several days along with the presenting signs and symptoms of unconsciousness, acetone breath, Kussmaul respirations, and thready pulse, the presenting problem would be diabetic coma.

2. A. hyperglycemia.

Patients in diabetic coma will have high blood glucose levels, which is hyperglycemia.

3. B. diabetic ketoacidosis (DKA).

When the body does not have sugar in the cells to make energy, it uses fat instead. A dangerous by-product of this process is acetone and other acids. As the acid levels increase in the body, a dangerous condition called diabetic ketoacidosis (DKA) results.

4. B. insulin.
Insulin is a hormone produced by the body's endocrine system and is responsible for helping sugar cross from the blood stream to the cell.

5. D. type II diabetes.
Type II diabetes is diagnosed later on in life, and in the early stages may be treated with diet and oral medications.

6. C. 80 to 120 mg/dL.
The normal lab value is 80 to 120 mg/dL when measuring glucose in the human body.

7. A. insulin shock.
The most common cause of insulin shock is from patients with diabetes taking too much insulin, not eating after taking their insulin, or excessive exercising.

8. B. glucose.
The treatment for insulin shock is immediate administration of glucose. Glucose will rapidly correct the problem.

9. The questions should include whether the patient takes insulin and, if so, whether it has been taken, how long ago it was taken, and whether the patient has eaten and how long ago. This information will usually give the EMT-B clues to whether the patient may have hyperglycemia or hypoglycemia.

10. First the EMT-B must ensure that the patient is awake and able to swallow. Examine the tube for expiration date and quality. Squeeze a generous amount of glucose on to a bite stick or tongue depressor, open the patient's mouth, and place the tongue depressor between the cheek and gum. Wait for the glucose to dissolve and repeat as necessary.

11. When the EMT-B encounters a patient who has an altered mental status, the first two issues to consider would be low oxygen or glucose levels in the bloodstream. Other possible causes of altered mental status are seizures and alcohol intoxication.

12. Diabetes affects all parts of the body, especially the kidneys, arteries, nerves, and eyes. Diabetes can lead to stroke and heart attacks. People with diabetes also do not heal well due to vascular problems and have ulcers of the feet and toes. Some persons with diabetes may have to have amputations.

Points to Ponder

Often, persons with diabetes appear to be intoxicated. Non-medical trained personal may mistake a diabetic emergency for an alcohol-related problem. Hypoglycemia, hyperglycemia, and hypoxia should always be considered when treating a patient with an altered mental status.

Chapter 16: Allergic Reactions and Envenomations

Assessment in Action

1. A. acute airway obstruction.

The effects of severe allergic reactions may lead to shock (cardiovascular collapse and the closing or shutting down of the airway).

2. B. anaphylaxis.

This patient has all the signs and symptoms of anaphylaxis—signs of shock, appearing pale, labored breathing, possible swelling of the airway, wheezing and a history of reactions (she has a prescription for an EpiPen).

3. D. administration of epinephrine.

Epinephrine is essential in the treatment of anaphylaxis. Epinephrine will dilate the bronchial improving breathing. Additional epinephrine will assist shock by constricting peripheral vessels and making the heart beat stronger and faster.

4. A. 0.3 mg.

The adult dose of epinephrine for the treatment of anaphylaxes is 0.3 mg and the pediatric dose is 0.15 mg.

5. A. push firmly against the thigh and hold it in place.

The last step in using the EpiPen is firmly pushing the EpiPen against the thigh and holding it until all of the medication is injected.

6. C. inject venom.

Stingers can continue to inject venom into the body for up to 20 minutes.

7. D. scraping the skin with a stiff object such as a credit card.
The stinger must be removed. This is done by a scraping motion of a stiff or hard object.

8. C. ice over the involved area.
Placing ice over a sting or bite will reduce swelling, irritation, and pain.

9. The five categories that trigger allergic responses include insect bites and stings, medications, plants, food, and chemicals.

10. An allergic reaction is when a substance enters the body and effects a response from the immune system. The body reacts by releasing histamines and other chemicals. In bites and stings, poisons or toxins are injected into the body. Although the causes are different, the signs and symptoms are similar and both lead to anaphylactic shock.

11. Respiratory signs and symptoms include runny nose, sneezing, tightness in the throat and chest, dry cough, hoarseness, wheezing, stridor, and labored respirations. Signs related to the circulatory system include a decrease in blood pressure, increase in pulse, pale skin, and loss of consciousness. Signs related to the skin include flushing, itching, burning skin, urticaria, swelling, cyanosis, or pallor around the lips.

12. Epinephrine works by dilating the bronchioles of the lungs and inhibits the effects of the allergic reaction.

Points to Ponder
Ant bites can be serious. This patient should be transported and treated in the emergency department. This patient can and must be treated under implied consent since the legal guardians are not present. In most states the baby-sitter cannot legally sign a refusal.

Chapter 17: Substance Abuse and Poisoning
Assessment in Action
1. D. Scene safety
Your primary concern is the safety of yourself and your crew. Suicidal patients can be unpredictable; therefore, you should not enter the scene until law enforcement has determined it is safe for you to enter.

2. C. Liver failure
Although required in high doses to produce toxic effects, acetaminophen can cause massive liver failure. Those patients attempting suicide may use common or easy-to-obtain medications such as aspirin or Tylenol.

3. B. suspension.
Activated charcoal is a suspension. Particles will settle to the bottom of the container as it sits on the shelf. This is very important to know because the effectiveness of activated charcoal will be compromised if you fail to shake the bottle to evenly distribute the mixture.

4. C. 25-50 g
25-50 g is the usual dose for adult patients. Adult dosages can also be calculated as 1 g/kg of body weight.

5. D. 12.5-25 g
12.5-25 g is considered the usual dose for pediatric patients. Child dosages can also be calculated as 1 g/kg of body weight.

6. D. all of the above.
Charcoal is not indicated for patients who have ingested an acid, an alkali, or a petroleum product or those patients who have a decreased level of consciousness and cannot protect their airway.

7. Oftentimes, reports of suicide come from a “third-party” caller. This means that information originates from a person who is not on the scene of the emergency. Suicidal patients will sometimes call friends or family to inform them of their intentions or actions. They may or may not provide complete or truthful information. This requires you to gather information from the beginning, without making assumptions. This will test your interview techniques, patient assessment skills, and observations of the scene.

8. Patients who are suicidal can be quite uncooperative, either in answering questions, allowing treatment, or both. They can be very upset and may not want you to help them. Establishing trust between the patient and yourself will help to minimize difficulties and delays in care. Most patients will positively respond if you express genuine concern for their health and well-being. Do not minimize their concerns regardless of your personal opinion. Whatever has caused the patient to become this upset is important enough to them to attempt to take their own life.

9. Any patient who threatens suicide cannot be released from care, regardless of mental status. You may be required to use restraints if the patient will not cooperate. This is another reason it is extremely important to have law enforcement on scene. Officers are not only trained in restraint techniques, but they can legally place a suicidal patient in protective custody so that you can administer essential medical care.

10. It is important to listen to the patient's concerns, but you must understand your role as an EMT-B. You are not a licensed counselor or psychologist. It is beyond your scope of practice to provide your opinion regarding mental health issues. Your purpose is to care for the patient's immediate medical needs and ensure that he or she receives the mental health care from a counselor or physician. Be a good listener. Be supportive and nonjudgmental. This approach will likely go a long way in attaining the patient's cooperation and trust.

Points to Ponder

Activated charcoal must be administered early in order to minimize exposure of the patient to the ingested poison. The longer the substance stays in the patient's gastrointestinal tract, the more potential damage it will cause. Time is of the essence when dealing with victims of poisoning, especially in pediatric patients. In this scenario, you have already experienced a delay in gaining access to the patient. Allowing your partner to travel downstairs to retrieve his field guide to identify the second medication is time consuming and unnecessary. The hospital staff will know what the medication is, and a simple phone call will simultaneously enable identification of any substances or medications and will give you the required order for administration of the activated charcoal.

Chapter 18: Environmental Emergencies

Assessment in Action

1. C. severe hypothermia.

Patients who are not shivering and are lethargic probably have moderate or severe hypothermia. This patient is reported as confused and slurring his words. This information combined with the vital signs indicates severe hypothermia.

2. D. both B and C.

It is important not to actively rewarm a patient (placing heat on or into the body) because rewarming too quickly may cause fatal cardiac arrhythmias. Rewarming of this sort must occur in the hospital. Your goal is to prevent further heat loss, which can be done by immediately

removing the patient from the cold environment into a warm ambulance and covering him with blankets.

3. A. mild hypothermia.
If a patient is alert and oriented and shivering, you may assume that the hypothermia is relatively mild.

4. D. all of the above.
Patients experiencing mild hypothermia can drink warm fluids as long as they can swallow without problems. It is important to remove any wet clothing to prevent further heat loss and to cover the patient with blankets.

5. A. convection.
Air currents passing over the body causing heat loss, is an example of convection. Conduction occurs when the body directly contacts another object, such as snow. Heat traveling through space, such as a warm person in a cold room, is an example of heat lost through radiation.

6. D. all of the above.
These are all terms that describe when body parts become cold but not frozen. When body parts freeze, this is referred to as frostbite. The most common areas to experience frostnip are the ears, nose, and fingers.

7. Alcohol causes flushing of the skin (dilation of blood vessels near the surface of the skin). This occurs naturally when the body is trying to prevent overheating. The body's natural reaction to conserve heat is to constrict blood vessels and shunt blood away from the extremities. Alcohol works in direct conflict of this protective mechanism, weakening the compensatory mechanisms used to combat hypothermia.

8. Hypothermia is more common in older people, pediatric patients, and sick patients because they are not as capable to compensate like young, healthy adults. Difficulties in thermoregulation in geriatric patients can be caused by various medical conditions, prescription medications, inability to shiver, body fat content, and muscle mass.

9. Frostnip is characterized by pale cold skin. It is not generally painful, and the patient will likely complain of loss of feeling in the affected area. Tissues affected by frostbite appear hard and waxy. In less severe frostbite, skin will become inflamed, tender, and unable to tolerate cold

exposure. Depending on the severity of frostbite, you may see blisters or swelling, red, purple, white, mottled, or cyanotic skin. Frostbite is a serious injury because cells actually become frozen. This causes permanent damage or even death of the affected cells.

10. Knowing your response area and keeping abreast of local weather conditions not only affects your patient care, but also can prevent you from becoming a victim of hypothermia. When you understand the hazards of local terrain, including weather, you can prepare yourself and your crew. This preparation includes having appropriate clothing, rescue gear, and vehicle maintenance. Don't become a casualty!

Points to Ponder

Fun Runs and other physically strenuous events can cause normally sedentary individuals to push their bodies too far. Many factors can contribute to difficulties in thermoregulation such as age, medical conditions, medications, nutrition and hydration levels, weather conditions, and in this case, other factors such as competition and peer pressure.

Chapter 19: Behavioral Emergencies

Assessment in Action

1. C. reflective listening.

The use of reflective listening is a tool used by EMS and mental health professional when talking with a patient. This technique involves repeating back what the patient says.

2. B. depression.

Depression is the single most significant factor that leads to suicide.

3. C. previous suicide attempts.

Eighty percent of successful suicides were preceded by at least one previous attempt.

4. B. have law enforcement assist.

In most states, a person who threatens to commit suicide cannot legally refuse transport. Obtaining law enforcement to assist in transport is an option.

5. A. implied consent.

If the patient is deemed mentally incompetent the patient can be transported under implied consent.

6. D. EMS personnel.
Patients can only be restrained by doctor's orders or if the patient poses a risk to himself or herself or EMS personnel.

7. B. functional (psychological) causes.
Physicians categorize behavioral emergencies either as functional (psychological) or organic (physical) causes.

8. B. low blood glucose (sugar) levels.
Organic causes of behavioral emergencies include physical problems such as low blood sugar levels or hypoxemia.

9. The EMT-B must be prepared to spend more time on this type of call. Talk calmly, be direct, and do not get to close to the patient. Avoid fighting with the patient and be honest and reassuring. Do not judge the patient.

10. The EMT-B should consider the patient's history of violence, posture and vocal activity such as screaming, and the scene, such as whether the patient is holding or may grab a weapon.

11. Once you make the decision to restrain the patient, act fast and make sure the restraints and personnel are ready. Use the minimal amount of force and keep the patient from harming himself or herself and EMS personnel.

Points to Ponder
Scene safety is always your first priority. In this case the scene is safe, and you are able to try to interact with the patient. The patient's dirty clothes should not deter you. Remember that every patient deserves the same, high quality level of care, regardless of his or her outward appearance. Given the police officers' knowledge of the patient's history of schizophrenia and noncompliance with medications, there are several potential causes for this patient's behavior. These are best evaluated in the emergency department so you should transport the patient.

Chapter 20: Obstetric and Gynecologic Emergencies
Assessment in Action
1. A. first stage of labor.
The first stage of labor is from the start of contractions to when the baby enters the birth canal (crowning).

2. C. primigravida.
C. The root medical word for pregnancy is “gravida.” When placed with the prefix “primi,” the word means first pregnancy.

3. B. multipara and primipara.
The root medical word for a live birth is “para,” when placed with the prefix “multi” or “primi,” the medical word for first or multiple births is made.

4. A. crowning.
During the physical exam of a patient in labor, the EMT-B must check for crowning, hemorrhaging, or other discharge.

5. D. pre-eclampsia.
When completing the SAMPLE history of an obstetric patient, the EMT-B should focus on specific problems that can occur during the pregnancy such a supine hypertension, gestational diabetes, eclampsia, or pre-eclampsia.

6. D. supine hypotension syndrome.
Low blood pressure while lying down is called supine hypotension syndrome, which may be caused by the pressure of the baby against the inferior vena cava.

7. C. on the left side.
Obstetric patients must be transported on their left side to relieve pressure on the inferior vena cava that is caused by the baby.

8. APGAR is a score to assess the newborn baby at 1 minute and 5 minutes. It assesses appearance, pulse, grimace, activity, and respirations.

9. Placenta abruptio occurs when the placenta is separated from the uterine wall, usually from trauma. It is extremely painful with a lot of bleeding. Placenta previa is a condition in which the placenta develops over and covers the cervix. This causes no pain, but bleeding occurs.

10. An ectopic pregnancy is when an ovum is fertilized in a fallopian tube instead of the uterus. The pregnancy is terminated very early, is painful, and can lead to extreme shock.

Points to Ponder

Due to the mechanism of injury, the patient complaints, and because the patient is pregnant, she should be transported by ambulance for treatment.