

# CHAPTER 16

## General Pharmacology

**HANDOUT 16-1:** Evaluating Content Mastery Student's Name

EVALUATION

### CHAPTER 16 QUIZ

*Write the letter of the best answer in the space provided.*

- \_\_\_\_\_ 1. Under the direction and supervision of medical control, an EMT is permitted to administer, or assist the patient in administering, all of the following medications EXCEPT:
- A. nitroglycerin. C. Tylenol.  
B. oxygen. D. oral glucose.
- \_\_\_\_\_ 2. The medication that an EMT may administer, when directed by medical control, for a poison that has been swallowed is:
- A. oxygen. C. activated charcoal.  
B. epinephrine. D. a prescribed inhaler.
- \_\_\_\_\_ 3. Some EMS systems allow EMTs to administer \_\_\_\_\_ to counter an overdose of narcotics.
- A. Xopenex C. naloxone  
B. Proventil D. epinephrine
- \_\_\_\_\_ 4. Prescribed inhalers and epinephrine autoinjectors have a similar effect on patients in that they can:
- A. increase heart rates. C. dilate blood vessels.  
B. lower blood pressure. D. lower sugar levels.

- \_\_\_\_\_ 5. Epinephrine is an example of a drug's:
- A. chemical name. C. generic name.
  - B. trade name. D. brand name.
- \_\_\_\_\_ 6. Specific signs or circumstances under which it is not appropriate to administer a drug are known as:
- A. indications. C. protocols.
  - B. side effects. D. contraindications.
- \_\_\_\_\_ 7. Fluids from an intravenous line that flow into the surrounding tissues are called:
- A. swelling. C. occlusion.
  - B. infiltration. D. infarction.
- \_\_\_\_\_ 8. A severe allergic reaction to a bee sting would be treated by administering:
- A. oral glucose. C. epinephrine.
  - B. nitroglycerin. D. activated charcoal.
- \_\_\_\_\_ 9. Medications administered sublingually are:
- A. swallowed. C. dissolved under the tongue.
  - B. inhaled. D. injected under the skin.
- \_\_\_\_\_ 10. Crushing chest pain in a patient with a known history of heart problems would be treated by administering:
- A. epinephrine. C. albuterol.
  - B. oral glucose. D. nitroglycerin.

## REINFORCEMENT

### IN THE FIELD

*Read the following real-life situation. Then answer the questions that follow.*

You receive a call from a 6-year-old girl who states that her “mommy can hardly breathe.” When you arrive at the scene, you find a 28-year-old female with labored breathing. She can barely talk as she gasps for air. But after several attempts, the woman indicates that she has just finished mowing the lawn. She thinks the exertion has triggered an asthmatic attack.

1. What type of medication do you suspect the patient might take?

You place the patient in a comfortable sitting position and administer high-concentration oxygen. You ask your partner to take vital signs while you obtain a medical history. The patient indicates that her physician has prescribed an inhaler for asthma, but she has not used it today. The woman tells her daughter to bring the medication to you.

2. What are some of the prescribed inhalers that you would expect to see?

After examining the patient's medication, you call medical direction for permission to assist the patient in self-administration.

3. Before helping the patient, what five “rights” must you ask yourself?
4. What common side effects might you expect after administration of the medication?

REINFORCEMENT

**CHAPTER 16 REVIEW**

*Write the word or words that best complete each sentence in the space provided.*

1. The study of drugs—their sources, characteristics, and effects—is called \_\_\_\_\_.
2. Among EMS personnel, the terms *medications* and *drugs* are used interchangeably, but with the public the terms \_\_\_\_\_ or \_\_\_\_\_ should be used.
3. \_\_\_\_\_ is a suspension used to treat a poisoning or overdose in which the substance was swallowed.
4. \_\_\_\_\_ is administered to a conscious patient (able to swallow) with an altered mental state and a history of diabetes.
5. \_\_\_\_\_ is a drug used to treat any patient whose medical or traumatic condition causes him to be hypoxic or in danger of becoming hypoxic.
6. Many patients with recurrent chest pain carry \_\_\_\_\_ pills.
7. \_\_\_\_\_ is a medication that can reverse a severe allergic reaction.
8. Every drug or medication in the United States is listed in the \_\_\_\_\_, which is a comprehensive government publication.
9. Every drug has \_\_\_\_\_, or specific signs, symptoms, or circumstances under which it is appropriate to administer it to a patient.
10. Each drug also has \_\_\_\_\_, or specific signs or circumstances under which it is not appropriate to administer it to a patient.

**REINFORCEMENT**

**PHARMACOLOGY BASICS LISTING**

1. List six medications that an EMT may administer or help a patient to self-administer under the direction of medical control.

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2. List three types of names by which every drug is known.

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3. List eight routes by which a drug may be administered.

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4. List the five "rights" that an EMT should ask before administering

any drug.

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**5.** List two common drug references carried on many ambulances.

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**REINFORCEMENT**

**DRUG FLASH CARDS**

*Use the following information to create flash cards to test each other's knowledge of the six medications that an EMT may administer or help a patient to self-administer. On each flash card, challenge a classmate to fill in the missing information. Add the completed flash cards to your notebooks.*

**Card 1**

Medication: \_\_\_\_\_

Examples: Liqui-Char, Actidose, SuperChar, Insta-Char

Indications: Poisoning or overdose of a swallowed substance

Form: \_\_\_\_\_

Route: \_\_\_\_\_

Side effects: Black stools and vomiting

Linked dis- Poisoning and overdose  
eases:

**Card 2**

Medication: Oral Glucose

Examples: Glucose, Insta-glucose

Indications: \_\_\_\_\_  
\_\_\_\_\_

Form: Gel

Actions: Glucose is absorbed into the bloodstream, which carries it to the brain to reverse the patient's potentially life-threatening condition.

Linked dis- \_\_\_\_\_

eases:

### Card 3

Medication: Oxygen

Examples: \_\_\_\_\_

Indications: Any patient whose medical or traumatic condition causes her to be hypoxic or in danger of becoming hypoxic.

Form: \_\_\_\_\_

Route: \_\_\_\_\_

Side effects: None

Linked dis- Any medical or traumatic injury with hypoxia

eases:

### Card 4

Medication: \_\_\_\_\_

Examples: \_\_\_\_\_

Indications: Severe difficulty breathing due to exacerbation of a respiratory disease

Form: Aerosol spray

Route: \_\_\_\_\_

Actions: Enlarges constricted bronchial tubes, making breathing easier

Side effects: Increased heart rate, jitteriness

Linked dis- Asthma, emphysema, chronic bronchitis

eases:

### Card 5

Medication: Nitroglycerin

Examples: Nitrostat, Nitrolingual



Indications: \_\_\_\_\_

Form: Aerosol spray

Route: \_\_\_\_\_

Actions: Helps dilate the coronary vessels that supply the heart muscle with blood

Side effects: \_\_\_\_\_

Linked dis- Coronary artery disease, angina, history of heart attack  
eases:

### **Card 6**

Medication: \_\_\_\_\_

Examples: Adrenalin, EpiPen

Indications: Severe allergic reaction

Form: \_\_\_\_\_

Route: \_\_\_\_\_

Actions: Constricts the blood vessels and relaxes airway passages

Side effects: Increased heart rate and blood pressure

Linked dis- Allergic reaction  
eases:

# Chapter 16 Answer Key

## HANDOUT 16-1: Chapter 18 Quiz

- |    |   |    |   |    |   |    |   |     |   |
|----|---|----|---|----|---|----|---|-----|---|
| 1. | C | 3. | C | 5. | C | 7. | B | 9.  | C |
| 2. | C | 4. | A | 6. | D | 8. | C | 10. | D |

## HANDOUT 16-2: In the Field

1. A prescribed inhaler
2. Albuterol, Ventolin, Proventil, Volmax
3. Do I have the right patient? Is this the right medication? Is this the right dose? Am I giving this medication by the right route? Am I giving the medication at the right time?
4. Increased heart rate, jitteriness

## HANDOUT 16-3: Chapter 16 Review

1. pharmacology
2. medications; medicine
3. Activated charcoal
4. Oral glucose
5. Oxygen
6. nitroglycerin
7. Epinephrine
8. *U.S. Pharmacopoeia*
9. indications
10. contraindications

## **HANDOUT 16-4: Pharmacology Basics Listing**

- 1.** Activated charcoal; Oral glucose; Oxygen; Prescribed inhalers; Nitroglycerin; Epinephrine autoinjectors
- 2.** Generic; Chemical; Trade (brand)
- 3.** Oral; Sublingual; Inhaled; Intravenous; Intramuscular; Subcutaneous; Intraosseous; Endotracheal
- 4.** Right patient; Right medication; Right dose; Right route; Right time
- 5.** *U.S. Pharmacopoeia (USP), Physician's Desk Reference (PDR)*

## **HANDOUT 16-5: Drug Flash Cards**

**Card 1:** Activated charcoal; Suspension; By mouth (orally)

**Card 2:** A conscious patient with an altered mental status and history of diabetes; Diabetes

**Card 3:** Oxygen; Gas; Inhalation by mouth or nose

**Card 4:** Prescribed inhalers; Albuterol, Ventolin, Proventil, Volmax; Inhalation by mouth

**Card 5:** Chest pain believed to be cardiac in origin; Sublingual; Drop in blood pressure

**Card 6:** Epinephrine autoinjectors; Liquid; Injection

# CHAPTER 18

## Cardiac Emergencies

**HANDOUT 18-1:** Evaluating Content Mastery Student's Name

EVALUATION

### CHAPTER 18 QUIZ

*Write the letter of the best answer in the space provided.*

\_\_\_\_\_ 1. The best known symptom of a heart problem is:

- |                          |                |
|--------------------------|----------------|
| A. difficulty breathing. | C. chest pain. |
| B. chills.               | D. headache.   |

\_\_\_\_\_ 2. The medical term for difficulty breathing is:

- |               |             |
|---------------|-------------|
| A. syncope.   | C. dyspnea. |
| B. bradypnea. | D. apnea.   |

\_\_\_\_\_ 3. If a patient meets nitroglycerin criteria, the maximum number of doses that can be administered is:

- |         |           |
|---------|-----------|
| A. one. | C. three. |
| B. two. | D. four.  |

\_\_\_\_\_ 4. Nitroglycerin is administered in all of the following forms, EXCEPT as a(n):

- |            |                  |
|------------|------------------|
| A. tablet. | C. patch.        |
| B. spray.  | D. autoinjector. |

\_\_\_\_\_ 5. Which of the following is NOT a sign of congestive heart failure?

- |                |              |
|----------------|--------------|
| A. Hypotension | C. Urticaria |
|----------------|--------------|

**B.** Tachycardia

**D.** Pulmonary edema

\_\_\_\_\_ **6.** A malfunction of the heart's electrical system will generally result in a(n):

**A.** embolism.

**C.** aneurysm.

**B.** occlusion.

**D.** dysrhythmia.

\_\_\_\_\_ **7.** Which of the following is a contraindication for the administration of nitroglycerin?

**A.** Patient has taken Viagra.

**C.** Patient has an abnormal pulse.

**B.** Patient has difficulty breathing.

**D.** Patient has palpitations.

\_\_\_\_\_ **8.** Fluid buildup in the lungs caused by inadequate pumping of the heart is known as:

**A.** pulmonary edema.

**C.** dysrhythmia.

**B.** angina pectoris.

**D.** thrombus.

\_\_\_\_\_ **9.** The most important component of successful CPR implementation is:

**A.** avoiding compression interruptions. **C.** managing the airway first.

**B.** good technique.

**D.** using two persons.

\_\_\_\_\_ **10.** When AEDs deliver shocks inappropriately, the LEAST common cause is:

**A.** improper AED use.

**C.** improper patient assessment.

**B.** poor maintenance.

**D.** mechanical error.

\_\_\_\_\_ **11.** The primary electrical disturbance resulting in cardiac arrest is:

**A.** ventricular fibrillation.

**C.** pulseless electrical activity.

**B.** ventricular tachycardia.

**D.** asystole.

\_\_\_\_\_ 12. Quality compressions when doing CPR include all of the following EXCEPT:

- A. pushing hard.
- B. pushing fast.
- C. pausing every cycle for pulse check.
- D. allowing full chest re-coil.

\_\_\_\_\_ 13. The first step in assessing a patient in cardiac arrest is to:

- A. perform a focused physical exam.
- B. attach the AED.
- C. verify pulselessness.
- D. obtain a SAMPLE history.

\_\_\_\_\_ 14. All of the following are medications the EMT should give the acute coronary syndrome (ACS) patient EXCEPT:

- A. nitroglycerin.
- B. oxygen.
- C. glucose.
- D. aspirin.

\_\_\_\_\_ 15. Patients suffering from an occlusion or narrowing of the coronary arteries suffer from:

- A. CAD.
- B. ACS.
- C. CVA.
- D. COPD.

\_\_\_\_\_ 16.

Ideally, an EMT team responding to a cardiac arrest should contact an ALS team:

- A. before arrival on the scene.
- B. after collecting a SAMPLE history.
- C. en route to the hospital.
- D. after defibrillation.

\_\_\_\_\_ 17. An AED is indicated for all the following patients, EXCEPT a(n):

- A. 11-year-old child.
- C. 40-year-old trauma vic-

tim.

**B.** 88-pound teenager.

**D.** 73-year-old woman.

\_\_\_\_\_ **18.** The survival rate is practically nonexistent for a patient who has been in cardiac arrest greater than:

**A.** 2 minutes.

**C.** 1 minute.

**B.** 8 minutes.

**D.** 5 minutes.

\_\_\_\_\_ **19.** In cases of cardiac emergencies, the goal of increased public CPR programs is to improve:

**A.** the time until 911 is called.

**B.** the time it takes EMS to drive to the scene.

**C.** the time it takes for emergency responders to hook up an AED.

**D.** the victim's chance for viable survival.

\_\_\_\_\_ **20.** Although the assessment is performed in an ABC order, care for a patient in cardiac arrest should be performed in the following order:

**A.** CAB.

**C.** BAC.

**B.** BCA.

**D.** ACB.

## **IN THE FIELD**

### **REINFORCEMENT**

*Read the following real-life situation. Then answer the questions that follow.*

You and your EMT partner respond to a call at the Dauge Corporation. The dispatcher reports an unconscious male about 50 years of age.

Upon your arrival at the scene, the patient's secretary leads you into an office. Here you see a man lying on the floor next to his desk. "I heard Mr. Kilpatrick yell in pain about 4 or 5 minutes ago," explains the secretary. "I rushed into his office, but he was already passed out on the floor."

You conduct an initial assessment of the patient and determine that he is unresponsive, apneic, and pulseless. An ALS team is en route.

1. What should be your first action?
2. What is the proper sequence for applying the AED?
3. What three components are required for quality CPR?
4. What should be your next action?
5. The ALS team informs you of an ETA of 15 minutes. What criteria should you use to determine the correct time for transporting the patient?



## CHAPTER 18 REVIEW

*Write the word or words that best complete each sentence in the space provided.*

1. \_\_\_\_\_ occurs when a person's normal heart-beat and circulation of blood have completely stopped.
2. The application of an electrical shock to the chest to restart the heart's normal action is known as \_\_\_\_\_.
3. The blanket term that refers to any kind of problem with the heart is \_\_\_\_\_.
4. The best known symptom of a heart problem is \_\_\_\_\_.
5. Typically, a heart patient describes this pain as \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_.
6. The medical term for difficulty breathing is \_\_\_\_\_.
7. The medical term for a pulse rate slower than 60 beats per minute is \_\_\_\_\_.
8. The medical term for a pulse rate faster than 100 beats per minute is \_\_\_\_\_.
9. The three drugs that an EMT may administer to a cardiac patient, with the approval of medical direction, are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
10. Most heart problems in infants and small children are \_\_\_\_\_ in nature.
11. With coronary artery disease, the amount of blood passing through the artery is

- \_\_\_\_\_.
- 12.** Factors that put a person at risk of coronary disease and that cannot be changed are \_\_\_\_\_ and \_\_\_\_\_.
- 13.** Angina pectoris, literally “a pain in the chest,” is most often brought on by \_\_\_\_\_ and \_\_\_\_\_.
- 14.** Fluid accumulation in the lungs caused by an inadequate pumping of the heart produces a condition called \_\_\_\_\_.
- 15.** The two most important factors in determining survival from cardiac arrest are \_\_\_\_\_ and \_\_\_\_\_.
- 16.** The two types of “shockable rhythms” for an AED unit are \_\_\_\_\_ and \_\_\_\_\_.
- 17.** The two types of “nonshockable rhythms” for an AED unit are \_\_\_\_\_ and \_\_\_\_\_.
- 18.** If an AED delivers shocks inappropriately, the most common cause is \_\_\_\_\_.
- 19.** A contraindication of the administration of nitroglycerin is if the patient has a pulse rate below \_\_\_\_\_ or above \_\_\_\_\_.
- 20.** You should do no more than \_\_\_\_\_ cycles of analyze, shock/no shock advised, and CPR before beginning transport unless indicated otherwise by local protocol.

## **LISTING CARDIAC EMERGENCY BASICS**

*Complete the following lists.*

1. List seven signs and symptoms often associated with cardiac compromise.

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2. List the seven steps for the emergency care of a patient with suspected acute coronary syndrome.

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3. List the six conditions that must be met before assisting a patient with the administration of nitroglycerin.

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4. List five factors that can be modified to reduce the risk of coronary disease.

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5. List the five elements in the American Heart Association's "chain of survival."

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## **CARDIAC VOCABULARY MATCHING**

*Write the letter of the term in the space next to the appropriate description.*

- A. Acute myocardial infarction
- B. Aneurysm
- C. Angina pectoris
- D. Apnea
- E. Dysrhythmia
- F. Thrombus
- G. Asystole
- H. Nitroglycerin
- I. Bradycardia
- J. Congestive heart failure
- K. Dyspnea
- L. Edema
- M. Embolism
- N. Occlusion
- O. Pedal edema
- P. Pulmonary edema
- Q. Sudden death
- R. Tachycardia
- S. Ventricular fibrillation
- T. Ventricular tachycardia

- \_\_\_\_\_ 1. A clot formed of blood and plaque attached to the inner wall of an artery  
or vein
- \_\_\_\_\_ 2. Swelling caused by a buildup of fluid in the tissues
- \_\_\_\_\_ 3. Slow pulse, usually below 60 bpm
- \_\_\_\_\_ 4. Disturbance in heart rate and rhythm
- \_\_\_\_\_ 5. Dilation of a weakened section of an arterial wall
- \_\_\_\_\_ 6. Rapid heartbeat that does not allow the heart's chambers to fill up with  
enough blood to meet the body's needs
- \_\_\_\_\_ 7. Cardiac arrest within two hours of onset of symptoms
- \_\_\_\_\_ 8. Rapid pulse, usually above 100 bpm
- \_\_\_\_\_ 9. Moving blood clot or plaque that broke loose from an artery wall
- \_\_\_\_\_ 10. Accumulation of fluid at the feet or ankles
- \_\_\_\_\_ 11. Difficulty breathing
- \_\_\_\_\_ 12. A medication that dilates the blood vessels
- \_\_\_\_\_ 13. Condition in which part of the heart muscle dies from oxygen starvation
- \_\_\_\_\_ 14. Failure of the heart to pump efficiently, leading to excessive fluid in the  
lungs, body, or both
- \_\_\_\_\_ 15. Blockage, as of an artery by fatty deposits
- \_\_\_\_\_ 16. Condition in which disorganized electrical impulses prevent the heart  
muscle from contracting normally
- \_\_\_\_\_ 17. Pain in the chest due to reduced supply of blood and oxygen to a portion  
of the heart muscle
- \_\_\_\_\_ 18. Accumulation of fluid in the lungs

\_\_\_\_\_ **19.** Condition in which breathing has ceased

\_\_\_\_\_ **20.** Condition in which the heart has ceased generating electrical impulses

## COMPLETING AN AED FLOWCHART

*Place the following actions in the correct sequence in the flowchart.*

### Cardiac Arrest Treatment Sequence with Automated External Defibrillator

- Turn AED on.
- Press *analyze* button.
- Have partner start CPR.
- Apply AED and clear patient.
- Verify arrest: unresponsive, apneic, and pulseless.

Shock indicated (SI)	No shock indicated (NSI)
• Press <i>analyze</i> button.	• Perform two minutes (five cycles) of CPR.
• If <i>SI</i> , deliver one more shock if AED gives <i>SI</i> message.	• Press <i>analyze</i> button.
• If patient does not wake up, perform two minutes (five cycles) of CPR.	• Perform CPR for two minutes (five cycles).
• After three shocks, prepare for transport. Follow local protocols for additional shocks.	• No shock indicated ( <i>NSI</i> ).
• Deliver one shock if AED gives <i>SI</i> message.	



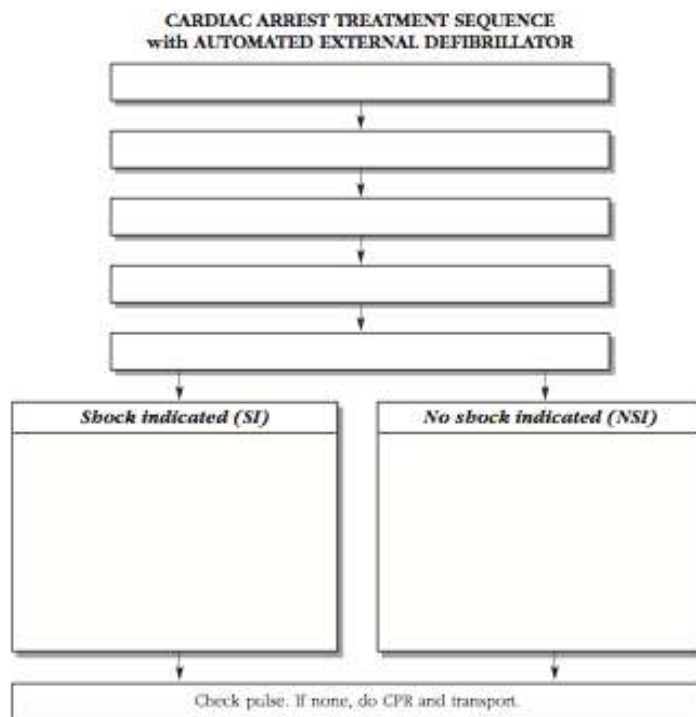
## COMPLETING AN AED FLOWCHART

Place the following actions in the correct sequence in the flowchart.

### Cardiac Arrest Treatment Sequence with Automated External Defibrillator

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- Press *analyze* button.
- Have partner start CPR.
- Apply AED and clear patient.
- Verify arrest: unresponsive, apneic, and pulseless.

Shock indicated (SI)	No shock indicated (NSI)
<ul style="list-style-type: none"> <li>• Press <i>analyze</i> button</li> </ul>	<ul style="list-style-type: none"> <li>• Perform 2 minutes (5 cycles) of CPR.</li> </ul>
<ul style="list-style-type: none"> <li>• If <i>SI</i>, deliver 1 more shock if AED gives <i>SI</i> message.</li> </ul>	<ul style="list-style-type: none"> <li>• Press <i>analyze</i> button.</li> </ul>
<ul style="list-style-type: none"> <li>• If patient does not wake up, perform 2 minutes (5 cycles) of CPR</li> </ul>	<ul style="list-style-type: none"> <li>• Perform CPR for 2 minutes (5 cycles).</li> </ul>
<ul style="list-style-type: none"> <li>• After 3 shocks, prepare for transport. Follow local protocols for additional shocks.</li> </ul>	<ul style="list-style-type: none"> <li>• No shock indicated (<i>NSI</i>).</li> </ul>
<ul style="list-style-type: none"> <li>• Deliver 1 shock if AED gives <i>SI</i> message.</li> </ul>	



# Chapter 18 Answer Key

## HANDOUT 18-1: Chapter 18 Quiz

1. C

2. C

3. C

4. D

5. C

6. D

7. A

8. A

9. A

10. D

11. A

12. C

13. C

14. C

15. A

16. A

17. C

18. B

19. D

20. A

## **HANDOUT 18-2: In the Field**

- 1.** Have your partner start CPR while you set up the AED unit.
- 2. (a)** Turn on the defibrillator. **(b)** Attach the monitor defibrillation pads to the cables. **(c)** Bare the patient's chest and check for a nitroglycerin patch. **(d)** Correctly place the pads, ensuring good contact. The pad attached to the white cable should be placed in the angle between the sternum and the right clavicle. The one attached to the red cable should be placed over the lower left ribs. (White to right, red to ribs.)
- 3.** Push hard, push fast, and allow full chest recoil between each compression.
- 4.** After performing five cycles of 30 compressions to two ventilations (about two minutes of CPR), press the *analyze* button on the AED and deliver a shock according to protocol if indicated. Once the shock has been delivered, continue CPR for another five cycles, or if the patient moves, assist with ventilations as needed with high-concentration oxygen.
- 5.** Criteria are when the patient has a pulse or starts to move, after three shocks have been delivered, or when the AED advises with three consecutive NSI (no shock indicated) separated by two minutes of CPR.

## **HANDOUT 18-3: Chapter 18 Review**

- 1.** Cardiac arrest
- 2.** defibrillation
- 3.** cardiac compromise
- 4.** chest pain
- 5.** crushing, dull, heavy, squeezing
- 6.** dyspnea

7. bradycardia
8. tachycardia
9. oxygen, aspirin, and nitroglycerin
10. congenital
11. restricted (reduced)
12. heredity, age
13. stress, exertion
14. congestive heart failure
15. early defibrillation, quality CPR
16. ventricular fibrillation, ventricular tachycardia
17. pulseless electrical activity, asystole
18. human error
19. 50; 100
20. three

**HANDOUT 18-4: Listing Cardiac Emergency Basics**

1. Chest pain; Difficulty breathing (dyspnea); Anxiety; Nausea and pain or discomfort in the upper abdomen (epigastric pain); Sweating; Abnormal pulse or blood pressure; Palpitations
2. Place the patient in a position of comfort, typically sitting up. Apply high-concentration oxygen through a nonrebreather mask. Transport immediately if the patient has **(a)** no history of cardiac problems, **(b)** a history of cardiac problems but does not have nitroglycerin, or **(c)** a systolic blood pressure of less than 100 (or as established by local protocol). Obtain a 12-lead EKG if authorized. Give the patient nitroglycerin. Repeat the nitroglycerin dose every

five minutes if conditions are met. Give the patient aspirin.

3. The patient complains of chest pain. The patient has a history of cardiac problems. The patient's physician has prescribed nitroglycerin. The patient has the nitroglycerin with him. The systolic blood pressure is greater than 90 (or as established per local protocol). Medical direction authorizes another dose of the medication.
4. Hypertension (high blood pressure); Obesity; Lack of exercise; Elevated blood levels of cholesterol and triglycerides; Cigarette smoking
5. Immediate recognition and activation; Early CPR; Rapid defibrillation; Effective advanced life support; Integrated postcardiac arrest care

#### **HANDOUT 18-5: Cardiac Vocabulary Matching**

1. F
2. L
3. I
4. E
5. B
6. T
7. Q
8. R
9. M
10. O
11. K
12. H

**13. A**

**14. J**

**15. N**

**16. S**

**17. C**

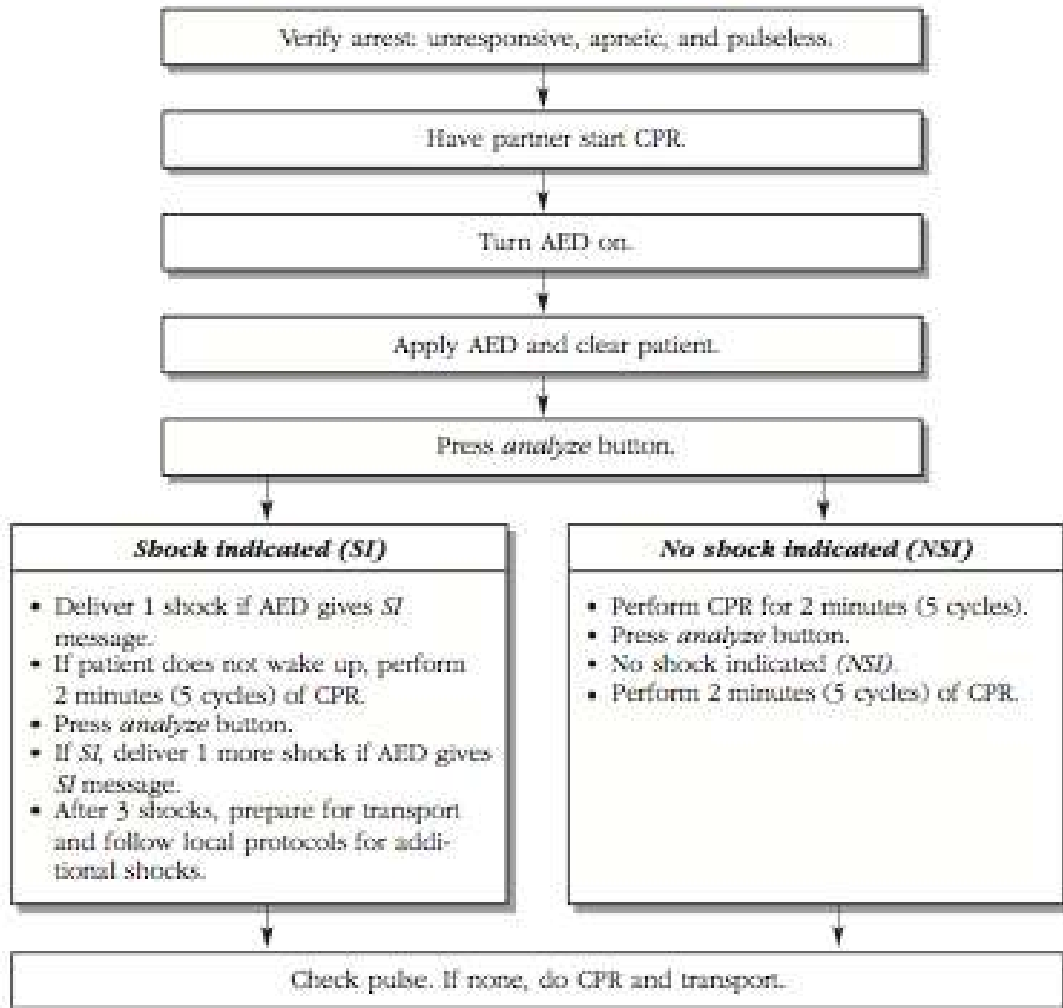
**18. P**

**19. D**

**20. G**

**HANDOUT 18-6: Completing an AED Flowchart**

**CARDIAC ARREST TREATMENT SEQUENCE  
with AUTOMATED EXTERNAL DEFIBRILLATOR**







reactions, is:

- A. hypotension. C. hypotonic.
- B. hypoperfusion. D. hypoxemia.

\_\_\_\_\_ 6. Anaphylaxis is differentiated from an allergic reaction by:

- A. respiratory distress. C. itching.
- B. hives. D. swelling.

\_\_\_\_\_ 7. Epinephrine is most commonly administered as a(n):

- A. tablet. C. prescribed inhaler.
- B. gel. D. autoinjector.

\_\_\_\_\_ 8. When administered as a medication, epinephrine will accomplish all the following EXCEPT:

- A. constrict blood vessels. C. dilate the bronchioles.
- B. lower blood pressure. D. improve perfusion.

\_\_\_\_\_ 9. The dose of epinephrine that should be given to children under 66 pounds is:

- A. 0.5 mg. C. 0.15 mg.
- B. 0.3 mg. D. 0.05 mg.

\_\_\_\_\_ 10. Administration of epinephrine needs to be carefully documented because of its powerful effects on the:

- A. heart. C. kidneys.
- B. brain. D. pancreas.

**REINFORCEMENT**

**IN THE FIELD**

*Read the following real-life situations. Then answer the questions that follow.*

The patient is a 10-year-old boy with a known history of allergies and asthma. His mother tells you that she administered his EpiPen five minutes before your arrival. However, you believe that she gave it incorrectly. "He pulled away when I tried to give the shot," explains the mother. "I saw some of the medicine form a mist in the air."

You examine the arm where the mother says that she gave the injection but find no puncture mark.

The child's distress has worsened since your arrival, and he now seems barely conscious.

"I have three more EpiPens," offers the mother.

1. What action(s) should you take at this time?

The patient is an unconscious construction worker named Danny. "He had barely started to work with some fiberglass insulation when he fainted," explains one of his coworkers.

You ask the coworkers more questions and find out that Danny was sneezing and coughing just before he fainted. They also noticed that he was using a handkerchief to wipe his watery eyes and runny nose. "He usually wears a respiratory mask on the job site," adds one of the coworkers, "but he forgot to bring it today."

Upon conducting a physical examination of the patient, you find a Medic Alert tag indicating that Danny has a number of allergies. His vital signs include a blood pressure of 70/42 and a weak pulse of 136. During your primary assessment, the foreman hands you an EpiPen. "I found this in Danny's lunch box," he says. "Will it help?"

2. What action(s) should you take at this time?

REINFORCEMENT

**CHAPTER 20 REVIEW**

*Write the word or words that best complete each sentence in the space provided.*

1. An exaggerated reaction of the body's immune system to some foreign material is called a(n) \_\_\_\_\_.
2. The wide variety of substances that trigger an allergic reaction are called \_\_\_\_\_.
3. A severe, life-threatening reaction to a foreign substance is called \_\_\_\_\_.
4. After the first exposure to an allergen, the immune system forms \_\_\_\_\_ to "attack" this substance in the future.
5. EMTs and other health care professionals sometimes develop a severe allergic reaction to the \_\_\_\_\_ in their gloves.
6. Red, itchy, possibly raised blotches on the skin are known as \_\_\_\_\_.
7. To manage a patient's airway and breathing during an allergic reaction, an EMT should apply \_\_\_\_\_ through a \_\_\_\_\_.
8. When administered as a medication, epinephrine will \_\_\_\_\_ blood vessels and improve the \_\_\_\_\_ of tissues.
9. A spring-loaded needle and syringe with a single dose of epinephrine is known as a(n) \_\_\_\_\_.
10. The correct dose of epinephrine for an adult is \_\_\_\_\_ mg; for a child, it is

\_\_\_\_\_ mg.

## **ALLERGIC REACTION TRUE OR FALSE**

*Indicate if the following statements are true or false by writing T or F in the space provided.*

- \_\_\_\_\_ 1. An individual must come into contact with an allergen a second time for an anaphylactic reaction to occur.
- \_\_\_\_\_ 2. An antibody will combine with only the allergen it was formed in response to (or another similar allergen).
- \_\_\_\_\_ 3. After 15 to 20 minutes, a patient suffering an allergic reaction has little risk of slipping into anaphylactic shock.
- \_\_\_\_\_ 4. During an allergic reaction, you can expect to discover a higher-than-average blood pressure.
- \_\_\_\_\_ 5. Epinephrine autoinjectors cannot be administered to unconscious patients.
- \_\_\_\_\_ 6. Epinephrine has no contraindications when used in a life-threatening situation.
- \_\_\_\_\_ 7. A possible side effect of epinephrine is chest pain.
- \_\_\_\_\_ 8. Some anaphylactic reactions require repeated doses of epinephrine before the allergic reaction stops.
- \_\_\_\_\_ 9. When the signs and symptoms of allergic reaction include either respiratory distress or signs and symptoms of shock, assume you are dealing with a severe allergic reaction.
- \_\_\_\_\_ 10. The patient with a localized reaction should receive epinephrine, while the patient with a generalized reaction should not.

## **CHECKING SIGNS AND SYMPTOMS OF ANAPHYLAXIS**

*Place a check mark in front of the signs and symptoms commonly associated with anaphylaxis, or anaphylactic shock.*

- \_\_\_\_\_ Increased pulse
- \_\_\_\_\_ Constipation
- \_\_\_\_\_ Decreased respirations
- \_\_\_\_\_ Increased appetite
- \_\_\_\_\_ Vomiting
- \_\_\_\_\_ Altered mental status
- \_\_\_\_\_ Flushed, dry skin
- \_\_\_\_\_ Absent radial and/or pedal pulses
- \_\_\_\_\_ Diarrhea
- \_\_\_\_\_ Pale, cool, clammy skin
- \_\_\_\_\_ Frequent urination
- \_\_\_\_\_ Decreased pulse
- \_\_\_\_\_ Increased respirations
- \_\_\_\_\_ Decreased blood pressure
- \_\_\_\_\_ Feeling of impending doom
- \_\_\_\_\_ Stridor

# Chapter 20 Answer Key

## HANDOUT 20-1: Chapter 20 Quiz

1. B      3. A      5. B      7. D      9. C  
2. C      4. B      6. A      8. B      10. A

## HANDOUT 20-2: In the Field

1. Sample response: Expect variations based on local regional protocols. Good responses from students should focus on treatment principles rather than specific protocols. After performing the primary assessment, establish contact with medical direction and request permission to administer a second dose of epinephrine and/or provide additional instructions. Complete the secondary assessment. Provide rapid transport and/or consider an ALS intercept. The patient's remaining epinephrine autoinjectors should be taken on the ambulance. Reassess the patient every five minutes.

2. Sample response: Complete all steps in the primary assessment. Secure the airway with the appropriate airway adjunct (OPA/NPA) and provide high-concentration oxygen via bag-valve mask. Call for an ALS intercept if available and/or begin rapid transport as soon as possible. The patient is unconscious and in anaphylactic shock; therefore, he meets the criteria for epinephrine administration. Contact medical direction and request to administer the patient's epinephrine. Confirm that the epinephrine autoinjector belongs to the patient and that it is not expired. After using the autoinjector, dispose of it in the appropriate sharps container. Review and confirm the "Five Rights" of medication administration prior to administration and record the time of administration. Complete the secondary assessment, and reassess the patient every five minutes.

**HANDOUT 20-3: Chapter 20 Review**

- 1.allergic reaction
- 2.allergens
- 3.anaphylactic shock
- 4.antibodies
5. latex
6. hives
- 7.high-concentration oxygen; nonrebreather mask
- 8.constrict; perfusion
- 9.autoinjector
10. 0.3; 0.15

**HANDOUT 20-4: Allergic Reaction True or False**

- |      |      |      |      |       |
|------|------|------|------|-------|
| 1. T | 3. F | 5. F | 7. T | 9. T  |
| 2. T | 4. F | 6. T | 8. T | 10. F |

**HANDOUT 20-5: Checking Signs and Symptoms of Anaphylaxis**

Check marks should appear before all of the following conditions: Increased pulse; Vomiting; Altered mental status; Flushed, dry skin; Absent radial and/or pedal pulses; Pale, cool, clammy skin; Increased respirations; Decreased blood pressure; Feeling of impending doom; Stridor.





- C. positive pressure ventilation.
- D. a bag-valve mask unit with supplemental oxygen.

\_\_\_\_\_ 5. Activated charcoal is indicated in some cases of:

- A. injected poisoning. C. absorbed poisoning.
- B. inhaled poisoning. D. ingested poisoning.

\_\_\_\_\_ 6. Contraindications to activated charcoal include all of the following EXCEPT:

- A. unresponsive. C. inability to swallow.
- B. tachypnea. D. ingestion of an alkali.

\_\_\_\_\_ 7. Modern treatment of ingested poisoning and overdose consists primarily of:

- A. administration of an antidote. C. inducement of vomiting.
- B. prevention of absorption. D. dilution of a poisonous substance.

\_\_\_\_\_ 8. The most frequent victims of poisoning are:

- A. elderly citizens. C. infants and children.
- B. drug abusers. D. teenagers.

\_\_\_\_\_ 9. In treating cases of inhaled poisons, the drug of first choice is:

- A. activated charcoal. C. glucose.
- B. syrup of ipecac. D. oxygen.

\_\_\_\_\_ 10. All the following are typical signs and symptoms of carbon monoxide poisoning EXCEPT:

- A. cherry red skin. C. nausea.
- B. cyanosis. D. altered mental status.

- \_\_\_\_\_ 11. Sooty sputum, singed nose hairs, hoarseness, and difficulty breathing are signs of:
- A. carbon monoxide poisoning. C. food poisoning.
  - B. smoke inhalation. D. pesticide inhalation.
- \_\_\_\_\_ 12. The primary step in treating a patient with absorbed liquid poisoning is:
- A. administration of oxygen. C. neutralization of the acid or alkali.
  - B. irrigation of the skin. D. administration of an antidote.
- \_\_\_\_\_ 13. All the following are signs and symptoms of alcohol withdrawal EXCEPT:
- A. confusion and restlessness. C. convulsions and seizures.
  - B. gross tremors of the hands. D. abdominal cramps and diarrhea.
- \_\_\_\_\_ 14. Mind-affecting drugs that act on the central nervous system to distort sensory perceptions are known as:
- A. uppers. C. narcotics.
  - B. downers. D. hallucinogens.
- \_\_\_\_\_ 15. Reduced pulse rate, constricted pupils, profuse sweating, and reduced depth of breathing indicate the possible use of:
- A. amphetamines (uppers). C. hallucinogens.
  - B. narcotics. D. barbiturates (downers).

**REINFORCEMENT**

**IN THE FIELD**

*Read the following real-life situation. Then answer the questions that follow.*

The emergency medical dispatcher sends you to a residence at 32 Hillside Drive. The young woman who placed the 911 call is waiting for you on the doorstep, even though the day is chilly. The woman reports that she dropped by the house to visit her friend Bill Wrye and saw through the window that he was passed out on the couch. The door was unlocked, so she went in to try to wake him but couldn't. She tells you, "I wanted to stay and help him, but I just started feeling so bad. I felt sick to my stomach and my head hurt, almost like there was a band around it. Then I remembered that Bill had been having trouble with his furnace and was using a kerosene heater until he could get the furnace fixed. So I was afraid maybe something was wrong with the heater and came outside and called 911 from my cell phone. What's going on?"

1. Based on your scene size-up, what answer would you give the woman?
2. What action(s) would you take?

**REINFORCEMENT**

**CHAPTER 21 REVIEW**

*Write the word or words that best complete each sentence in the space provided.*

1. The largest number of poisoning victims are \_\_\_\_\_.
2. Many living organisms, such as mushrooms and a variety of houseplants, are capable of producing a(n) \_\_\_\_\_, or substance that is poisonous to humans.
3. In some cases of ingested poisoning, medical direction will order administration of \_\_\_\_\_.
4. When a patient has ingested a poison, provide ventilations through a(n) \_\_\_\_\_ with a one-way valve.
5. Many people think that every poison has a(n) \_\_\_\_\_, a substance that will neutralize its effects, but this is not \_\_\_\_\_.
6. Modern treatment for ingested poisoning consists primarily of \_\_\_\_\_.
7. As an EMT, always assume that an infant or a child has ingested a(n) \_\_\_\_\_ amount of poison.
8. The principal prehospital treatment of inhaled poisoning consists of \_\_\_\_\_ and \_\_\_\_\_.

9. \_\_\_\_\_ is one of the most common inhaled poisons.
10. It must not be forgotten that alcohol is a potent \_\_\_\_\_ and has a profound effect on the \_\_\_\_\_ system.
11. The patient suffering from alcohol withdrawal may experience seizures or \_\_\_\_\_.
12. The patient under the influence of alcohol cannot make a(n) \_\_\_\_\_ of treatment or transport.
13. \_\_\_\_\_ stimulate(s) the central nervous system and excite the user, while \_\_\_\_\_ depress(es) the central nervous system and relax(es) the user.
14. Cleaning fluid, glue, and model cement are commonly abused \_\_\_\_\_.
15. When treating intravenous drug users, take \_\_\_\_\_ and follow all \_\_\_\_\_ procedures.

**REINFORCEMENT**

**POISONING AND OVERDOSE LISTING**

*Complete the following lists.*

1. List the four main types of poisons.

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2. List the seven questions that should be asked during assessment of a patient with ingested poisoning.

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3. List three contraindications for administration of activated charcoal.

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4. List the five emergency care steps in treating patients with inhaled poisoning.

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5. List five commonly abused drugs and chemical substances encountered by EMTs in the field.

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**REINFORCEMENT**

**POISONING AND OVERDOSE MATCHING**

*Write the letter of the type of poisoning next to the appropriate scenario below.*

- A.** Ingested poisoning
- B.** Inhaled poisoning
- C.** Absorbed poisoning
- D.** Injected poisoning

\_\_\_\_\_ **1.** You are called to a suburban home to assist an 18-year-old male who has been found on the floor of his bathroom. He has a reduced pulse rate and reduced rate of breathing. His pupils are constricted to pinpoint size. He seems very sleepy and unresponsive. There is a homemade tourniquet tied around his upper arm. You find a hypodermic needle behind a clothes hamper.

\_\_\_\_\_ **2.** A 19-year-old male farm worker stumbles while carrying an open drum of pesticides. The powder spills all over his clothes and body. Within minutes, a stinging, burning sensation spreads across his hands, arms, neck, and face. "It's like being on fire," he tells another farmhand. "Get some help fast!"

\_\_\_\_\_ **3.** A 38-year-old woman collapses on the floor of her garage while cleaning out her car. She had left the car idling so that she could listen to her favorite radio station without running down the battery. By the time her husband discovers her, the woman is barely breathing. He rushes to call an EMS unit.

\_\_\_\_\_ **4.** A 45-year-old man in extreme pain from a recent back operation decides to double

his self-administered dosage of Demerol. By the end of the day, he feels extremely lethargic and is sweating profusely. His pupils are constricted. Sensing trouble, his teenage son calls the nearest ambulance service.

## **POISONING AND OVERDOSE TRUE OR FALSE**

*Indicate if the following statements are true or false by writing T or F in the space provided.*

- \_\_\_\_\_ 1. Most poisoning cases result from suicide attempts.
- \_\_\_\_\_ 2. People generally have similar reactions to toxic or poisonous substances.
- \_\_\_\_\_ 3. When providing assisted ventilation in cases of ingested poisoning, an EMT should avoid mouth-to-mouth resuscitations.
- \_\_\_\_\_ 4. Dosages of activated charcoal must be calculated based on the patient's body weight.
- \_\_\_\_\_ 5. The primary treatment of a patient who has ingested a poison is administration of an antidote.
- \_\_\_\_\_ 6. The most effective drug for inhaled poisons is oxygen.
- \_\_\_\_\_ 7. A common sign of carbon monoxide poisoning is cherry red skin.
- \_\_\_\_\_ 8. As an EMT, you should contact a poison control center only if local protocols allow.
- \_\_\_\_\_ 9. Under the influence of alcohol, a patient cannot make an informed refusal of treatment or transport.
- \_\_\_\_\_ 10. As an EMT, you will need to know the names of the many abused drugs and their specific reactions.

# Chapter 21 Answer Key

## HANDOUT 21-1: Chapter 21 Quiz

1. B
2. A
3. B
4. A
5. D
6. B
7. B
8. C
9. D
10. A
11. B
12. B
13. D
14. D
15. B

## HANDOUT 21-2: In the Field

1. "It is likely that your friend may have been overcome by carbon monoxide fumes from the heater."
2. The scene is unsafe. Move the patient, your partner, and yourself to a safe, well-ventilated area. Contact dispatch and request that the fire department be called to the scene for patient

rescue and scene stabilization. Remember that you have two patients, the woman and her friend. Prioritize treatment, and consider requesting an additional unit or more. Once the patient is brought to you by trained fire/rescue crews, perform the primary assessment, secure the airway with the appropriate adjunct (NPA/OPA), and administer high-concentration oxygen via nonrebreather or bag-valve mask as indicated. Provide rapid transportation for the patient to the appropriate facility (ideally, one with a hyperbaric chamber), and perform the secondary assessment. Consider an ALS intercept. The patient's friend also needs to be assessed in a similar manner, and high-flow oxygen via nonrebreather mask should be administered. If practical, have a second unit take over care of this patient.

### **HANDOUT 21-3: Chapter 21 Review**

- 1.children
2. toxin
- 3.activated charcoal
- 4.pocket mask
- 5.antidote; true
- 6.prevention of absorption
7. lethal
- 8.maintaining the airway; supporting ventilation
- 9.Carbon monoxide
- 10.drug; central nervous
- 11.delirium tremens
- 12.informed refusal
- 13.Uppers; downers

14.volatile chemicals

15.Standard Precautions; infection exposure control

**HANDOUT 21-4: Poisoning and Overdose Listing**

1.Ingested poisons; Inhaled poisons; Absorbed poisons; Injected poisons

2.What substance was involved? When did the exposure occur? How much was ingested?

Over how long a period did the ingestion occur? What interventions have the patient, family, or well-meaning bystanders taken? What is the patient's estimated weight? What effects is the patient experiencing from the ingestion?

3.Altered mental status; Ingestion of acids or alkalis; Inability to swallow

4.Remove the patient to a safe environment so that the immediate life-threatening conditions can be detected and treated. Perform a focused history and physical exam, including SAMPLE history and vital signs. Administer high-concentration oxygen. Transport the patient with all containers, bottles, and labels from the substance. Perform ongoing assessment en route.

5.Uppers; Downers; Narcotics; Hallucinogens; Volatile chemicals

**HANDOUT 21-5: Poisoning and Overdose Matching**

1. D 2. C 3. B 4. A

**HANDOUT 21-6: Poisoning and Overdose True or False**

1. F

2. F

3. T

- 4. T
- 5. F
- 6. T
- 7. F
- 8. T
- 9. T
- 10. F.

## CHAPTER 22

# Abdominal Emergencies

**HANDOUT 22-1:** Evaluating Content Mastery Student's Name

EVALUATION

## CHAPTER 22 QUIZ

*Write the letter of the best answer in the space provided.*

- \_\_\_\_\_ 1. Pain that originates in the walls of the hollow organs is called:
- A. visceral. C. tearing.  
B. parietal. D. referred.
- \_\_\_\_\_ 2. The mnemonic used to help remember questions to ask regarding pain for a patient with an abdominal complaint is:
- A. DCAP. C. OPQRST.  
B. BTLS. D. AVPU.
- \_\_\_\_\_ 3. Pain that is felt in a place other than where it originates is called:
- A. visceral. C. tearing.  
B. parietal. D. referred.
- \_\_\_\_\_ 4. Which of the following conditions in females is a life-threatening emergency?
- A. Mittelschmerz C. Premenstrual syndrome  
B. Ectopic pregnancy D. Cramps
- \_\_\_\_\_ 5. Which of the following signs indicates internal bleeding?



- A. Greenish emesis C. Mucous in emesis and feces
- B. Sweet smell to emesis D. Coffee-ground-like emesis

\_\_\_\_\_ 6. Which type of medication can cause bleeding in the stomach?

- A. Diabetes medication C. Epinephrine
- B. Aspirin D. Albuterol

\_\_\_\_\_ 7. What term is used to indicate voluntary or involuntary protecting of the abdomen to prevent further pain upon palpation?

- A. Guarding C. Checking
- B. Reacting D. Auscultation

\_\_\_\_\_ 8. The best position in which to place a conscious patient with acute abdominal pain is:

- A. recovery position. C. position of comfort.
- B. prone. D. guarded.

\_\_\_\_\_ 9. A patient with pain in the right lower quadrant (RLQ) is most likely suffering from which of the following?

- A. Abdominal aortic aneurysm (AAA) C. Gallstones
- B. Pancreatitis D. Appendicitis

\_\_\_\_\_ 10. The retroperitoneal space contains which of the following organs?

- A. Kidney C. Spleen
- B. Liver D. Gallbladder

**REINFORCEMENT**

**IN THE FIELD**

*Read the following real-life situation. Then answer the questions that follow.*

The patient is a 78-year-old male who lives alone. He has a health aide who comes in twice a week. On this particular day when the health aide arrived, he found Mr. Harris sitting on the couch looking very pale and breathing a little harder than usual. Concerned for Mr. Harris's health, the aide decided to call 911. You are dispatched to the residence, and upon arrival you encounter the aide, who informs you that he believes that Mr. Harris is seriously ill. When the patient is asked what is wrong; he tells you that he has been feeling poorly since last night. His breathing appears slightly labored and faster than normal.

1. What action(s) should you take at this time?

The primary assessment identifies that the patient is breathing at a rate of 28, and it appears shallow. He has a pulse of 72, and his skin is moist and pale. You take a SAMPLE history and determine that he is taking a beta blocker and has had mild abdominal pain since last night. He tells you that he went to the bathroom and his stools looked black. He felt light-headed and made his way to the couch where he has been until his aide arrived. He claims that he has never had an episode like this before, and his only medical history is high blood pressure. Your partner takes a BP and finds it to be 100/70. The health aide tells you the blood pressure is lower than usual.

2. What action(s) should you take at this time?

**REINFORCEMENT**

**CHAPTER 22 REVIEW**

*Write the word or words that best complete each sentence in the space provided.*

1. The four quadrants of the abdomen are:

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2. Most organs of the abdomen are enclosed in the \_\_\_\_\_ .

3. Four classic patterns of abdominal pain are:

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4. The OPQRST mnemonic for assessing pain/distress stands for:

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5. Tearing pain that is felt in the back is a symptom of what serious medical problem?

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6. When a patient draws his arms across the abdomen in response to pain, this is called:

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7. Patients experiencing severe flank pain are most likely suffering from:

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## **ABDOMINAL PAIN AND DISCOMFORT TRUE OR FALSE**

*Indicate if the following statements are true or false by writing T or F in the space provided.*

- \_\_\_\_\_ 1. Upper quadrant abdominal pain can be signs of a myocardial infarction or other cardiac problem.
- \_\_\_\_\_ 2. "Cramps and colicky" is a description of parietal pain.
- \_\_\_\_\_ 3. The T in the OPQRST mnemonic stands for tenderness.
- \_\_\_\_\_ 4. Tearing pain is a sign of an abdominal aortic aneurysm (AAA).
- \_\_\_\_\_ 5. Ectopic pregnancy should always be considered as a potential problem when a woman of childbearing age has abdominal pain.
- \_\_\_\_\_ 6. A coffee-ground-like substance in vomitus is a sign of internal bleeding.
- \_\_\_\_\_ 7. Elderly people have no decreased ability to perceive pain.
- \_\_\_\_\_ 8. During the assessment, palpate the abdomen before you inspect it.
- \_\_\_\_\_ 9. Whenever possible, a patient with abdominal pain should be transported in a position of comfort.
- \_\_\_\_\_ 10. The EMT can be confident that there is no serious problem with the abdomen if the assessment shows no abnormal findings.

# Chapter 22 Answer Key

## HANDOUT 22-1: Chapter 22 Quiz

1. A 3. D 5. D 7. A 9.D  
2. C 4. B 6. B 8. C 10. A

## HANDOUT 22-2: In the Field

- 1.Perform a primary assessment and treat any life-threatening conditions you find during the assessment.
- 2.The information from the assessment is suggestive of internal bleeding. He has a borderline low blood pressure, which is not normal for him; dark tarry stools; episodes of dizziness; and pale, moist skin. In addition, the patient's prescribed beta blocker medication could be masking the severity of the patient's condition. The patient needs to be treated for potential hypovolemic shock (hypoperfusion) caused by the bleeding. He should be placed on high-flow oxygen by nonrebreather mask. The patient should be placed in a position of comfort and promptly transported to the hospital. An ALS intercept should be considered. A secondary assessment should be performed. The patient should be reassessed every five minutes.

## HANDOUT 22-3: Review

- 1.Upper right quadrant  
Upper left quadrant  
Lower right quadrant  
Lower left quadrant
- 2.peritoneum

**3.Visceral**

Parietal

Tearing

Referred

**4. Onset**

Provocation/palliation

Quality

Region/radiation

Severity

Time

**5.Abdominal aortic aneurysm (AAA)**

**6.Guarding**

**7.Renal colic (kidney stones)**

**HANDOUT 22-4: Abdominal pain and discomfort True or False**

- |           |          |           |          |            |          |
|-----------|----------|-----------|----------|------------|----------|
| <b>1.</b> | <b>T</b> | <b>5.</b> | <b>T</b> | <b>8.</b>  | <b>F</b> |
| <b>2.</b> | <b>F</b> | <b>6.</b> | <b>T</b> | <b>9.</b>  | <b>T</b> |
| <b>3.</b> | <b>F</b> | <b>7.</b> | <b>F</b> | <b>10.</b> | <b>F</b> |
| <b>4.</b> | <b>T</b> |           |          |            |          |





**B.** stroke. **D.** lack of oxygen.

\_\_\_\_\_ 5.The first step that an EMT takes in a behavioral emergency is to:

**A.** gather a thorough patient history.

**B.** complete an initial assessment.

**C.** identify herself.

**D.** perform a careful scene size-up.

\_\_\_\_\_ 6.A medical condition that can closely mimic a psychiatric condition is:

**A.** diabetes. **C.** psychosis.

**B.** depression. **D.** mania.

\_\_\_\_\_ 7.In talking with a behavioral patient, an EMT should take all of the following actions

EXCEPT:

**A.** identifying himself.

**B.** avoiding direct eye contact.

**C.** being as honest as possible.

**D.**standing at least three feet from the patient.

\_\_\_\_\_ 8.Of the groups listed, the highest suicide rates have been found in people ages:

**A.** 10–16. **C.** 25–33.

**B.** 15–24. **D.** 30–40.

\_\_\_\_\_ 9.A patient who has attempted suicide in the past is:

**A.** looking for attention.

**B.**less likely to commit suicide than one who has not.

**C.** a candidate for forceful restraint.

**D.**more likely to commit suicide than one who has not.

\_\_\_\_\_ **10.** Which of the following cannot order the restraint of an adult patient?

- A.** Medical direction
- C.** Law enforcement officials
- B.** The patient's physician
- D.** The patient's family

**REINFORCEMENT**

**IN THE FIELD**

*Read the following real-life situation. Then answer the questions that follow.*

The emergency medical dispatcher reports a 16-year-old girl who is “acting bizarre.” Her mother is currently trying to keep her from leaving the house.

Upon the EMS unit's arrival at the scene, the mother guides the team into the house. She states that her daughter has been depressed for the past few weeks. Today the daughter's behavior changed dramatically. Instead of acting lethargic, her daughter has become very hyperactive. The mother indicates that the family has a history of manic depression. “The doctor has a new word for it,” laughs the mother nervously. “They call it bipolar disorder.” The mother indicates that her daughter is on medication for the condition but feels that she has stopped using it. The girl's psychiatrist recommended that the mother call 911.

The mother takes you to meet her daughter, Annie. You see a clean, well-dressed young woman who appears to be happy. She speaks very fast and occasionally exhibits muscle twitches of the face and hands. Although Annie indicates no physical complaints, her vital signs are on the high side of normal. She doesn't want to talk about her medical condition. She also doesn't want to be transported to the hospital. With her eyes averted, Annie says a little too lightly, “My mother worries much too much. I'm just fine.”

1. How should you proceed with patient care?
2. What communication techniques might you use to persuade the patient to accompany you to the hospital?

## CHAPTER 23 REVIEW

*Write the word or words that best complete each sentence in the space provided.*

1. \_\_\_\_\_ is defined as the manner in which a person acts or performs.
2. A(n) \_\_\_\_\_ exists when a person exhibits abnormal behavior.
3. There are many \_\_\_\_\_ and \_\_\_\_\_ conditions as well as psychological conditions that are likely to alter a patient's behavior.
4. By acting in a calm manner, an EMT is applying \_\_\_\_\_ techniques to a behavior emergency.
5. In providing patient care during a behavioral emergency, an EMT should treat any life-threatening conditions during the \_\_\_\_\_.
6. In talking with a patient experiencing a behavioral emergency, avoid unnecessary \_\_\_\_\_ and quick \_\_\_\_\_.
7. Whenever you are called to care for a patient who has attempted suicide, your first concern must be for \_\_\_\_\_.
8. The highest suicide rates occur at ages \_\_\_\_\_ to \_\_\_\_\_.
9. Your assessment of the aggressive or hostile patient may never go beyond the \_\_\_\_\_ phase.
10. Patients who have been improperly restrained may die of a type of breathing impairment

known as \_\_\_\_\_.

## **LISTING BEHAVIORAL AND PSYCHIATRIC EMERGENCIES AND SUICIDE**

1. List seven medical and traumatic conditions that are likely to alter a person's behavior.

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2. List eight general rules for dealing with a patient who is experiencing a behavioral or psychiatric emergency.

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## **BEHAVIORAL EMERGENCY TRUE OR FALSE**

*Indicate if the following statements are true or false by writing T or F in the space provided.*

- \_\_\_\_\_ 1. During a behavioral emergency, an EMT should only call the police as a last resort.
- \_\_\_\_\_ 2. When dealing with a behavior patient, always consider that the condition may be caused by a physiological condition.
- \_\_\_\_\_ 3. Whenever an EMT is called to the scene of a suicide attempt, her first concern should be for the patient's safety.
- \_\_\_\_\_ 4. A person who has exhibited a sudden improvement from depression is a low risk for suicide.
- \_\_\_\_\_ 5. If a patient's fear or aggression increases, an EMT should not push the issue of transport.
- \_\_\_\_\_ 6. In treating a behavioral emergency, an EMT should not follow the patient into the kitchen.
- \_\_\_\_\_ 7. Once a patient is acting rationally, an EMT may remove soft restraints.
- \_\_\_\_\_ 8. Patients can die from improper placement of restraints.
- \_\_\_\_\_ 9. Aggressive behavior is a valid reason to not assess the patient.
- \_\_\_\_\_ 10. A psychiatric patient who refused emergency care or transport is a significant medical/legal risk for EMS agencies and EMTs.

## Chapter 23 Answer Key

### HANDOUT 23-1: Chapter 23 Quiz

1. C 3. D 5. D 7. B 9. D  
2. A 4. B 6. A 8. B 10. D

### HANDOUT 23-2: In the Field

1. Sample response: Several factors indicate that the girl should be convinced to accept treatment: She's a minor; her psychiatrist directed the mother to call 911; she has a potentially hazardous condition. Medical direction should be contacted for instructions and/or orders. Depending upon local protocols, specific procedures will need to be followed if the girl refuses to cooperate. The police may also need to intervene. The patient should be made aware of all possible options, but she should also understand that the outcome will be the same—a trip to the hospital.

2. Sample response: Specifically, the girl might be told: "Your mother is worried about you, and we can set her mind at ease. Your doctor requested that you be checked out at the hospital." Other communication techniques would be to allow the patient to voice her concerns about going to the hospital and to get her to make decisions as to how she will go with you. Patients who are allowed to voice their frustrations and who are allowed some measure of choice in the process are more likely to cooperate. Patients who are not allowed to voice their frustrations or given no choices at all in how they will be transported often feel threatened and trapped and are more likely to become violent.

### HANDOUT 23-3: Chapter 23 Review



1. Behavior
2. behavioral emergency
3. medical; traumatic
4. crisis management
5. initial assessment
6. physical contact; movements
7. your own safety
8. 15; 24
9. initial assessment
10. positional asphyxia

**HANDOUT 23-4:** Listing Behavioral and psychiatric emergencies and suicide

1. Low blood sugar; Lack of oxygen; Inadequate blood to the brain or stroke; Head trauma; Mind-altering substances; Excessive cold; Excessive heat
2. Identify yourself and your role. Speak slowly and clearly. Listen to the patient. Do not be judgmental. Use positive body language. Acknowledge the patient's feelings. Do not enter into the patient's personal space. Be alert for changes in the patient's emotional status.

**HANDOUT 23-5:** Behavioral and psychiatric emergencies and suicide True or False

1. F 3. F 5. T 7. F 9. F
2. T 4. F 6. T 8. T 10. T

## CHAPTER 24

# Hematologic and Renal Emergencies

**HANDOUT 24-1:** Evaluating Content Mastery Student's Name

EVALUATION

## CHAPTER 24 QUIZ

*Write the letter of the best answer in the space provided.*

\_\_\_\_\_ 1. Blood cells that transport oxygen to the cells of the body are:

A. blue. C. red.

B. purple. D. white.

\_\_\_\_\_ 2. Blood cells that are critical in response to infection and mediate the body's immune response are:

A. red. C. white.

B. blue. D. amber.

\_\_\_\_\_ 3. The part of blood responsible for clotting is:

A. plasma. C. platelets.

B. WBCs. D. RBCs.

\_\_\_\_\_ 4. The liquid part of blood is called:

A. hemoglobin. C. WBCs.

B. RBCs. D. plasma.

- \_\_\_\_\_ 5. A disease caused by a genetic defect in a patient's hemoglobin is called:
- A. sickle-cell anemia. C. anemia.  
B. lymphoma. D. hemophilia.
- \_\_\_\_\_ 6. Patients whose kidneys can no longer provide filtration and fluid balance have:
- A. acute renal failure. C. chronic renal failure.  
B. end-stage renal disease. D. pyelonephritis.
- \_\_\_\_\_ 7. Renal patients whose blood is filtered through a specialized machine are undergoing:
- A. hemodialysis. C. peritoneal dialysis.  
B. transfusion. D. CAPD.
- \_\_\_\_\_ 8. The vibration that can be felt by the EMT when a patient's A-V fistula is gently palpated is called:
- A. thrill. C. woosh.  
B. whirl. D. pulse.
- \_\_\_\_\_ 9. The extreme pain felt by sickle-cell patients during a crisis results primarily from the sludging and accumulation of:
- A. white blood cells. C. red blood cells.  
B. plasma. D. platelets.
- \_\_\_\_\_ 10. End-stage renal patients who miss their dialysis treatments are at high risk for:
- A. acute COPD. C. acute bronchoconstriction.

**B.** cardiac arrest. **D.** cardiac tamponade.

**REINFORCEMENT**

**IN THE FIELD**

*Review the following real-life situation. Then answer the questions that follow.*

A. You are dispatched at 1700 hours for a sick case. Upon arrival, you find a 68-year-old African-American female sitting in her lounge chair in the living room. The patient is complaining of feeling sick. Upon further questioning she tells you that she is having difficulty breathing. Her daughter states that she has chronic renal failure and hypertension and missed her dialysis appointment yesterday because it was raining. After performing the primary assessment, you obtain vital signs of blood pressure: 168/90, pulse: 120, respiratory rate: 28, and room oxygen saturation of 94 percent. Lung sounds are wet in the lower fields, and you notice her ankles and wrists are swollen. You observe a fistula (shunt) in the right wrist:

1. What pathophysiologic condition or conditions would explain the patient's vital signs?
2. What specific precautions need to be taken when obtaining the vital signs?
3. How will you treat this patient?

## CHAPTER 24 REVIEW

*Write the word or words that best complete each sentence in the space provided.*

1. A person who lacks a normal number of red blood cells is said to be \_\_\_\_\_.
2. Patients with sickle-cell anemia have abnormal, sickle-shaped \_\_\_\_\_.
3. \_\_\_\_\_ is described as the failure of the kidneys to filter the blood and remove toxins and excess fluids from the body .
4. \_\_\_\_\_ is the liquid part of the blood that transports nutrients.
5. Patients with end-stage renal disease will require \_\_\_\_\_.
6. The two primary types of dialysis are \_\_\_\_\_ and \_\_\_\_\_.
7. ESRF patients who miss a dialysis treatment may have symptoms very similar to \_\_\_\_\_.
8. The most commonly transplanted organ is the \_\_\_\_\_.
9. Renal patients in cardiac arrest may not respond to treatments with the \_\_\_\_\_.
10. Sickle-cell patients are at higher risk of having the \_\_\_\_\_ destroyed by the disease.

**TRUE OR FALSE**

- \_\_\_\_\_ 1. White blood cells transport oxygen to the cells of the body.
- \_\_\_\_\_ 2. Sickle-cell anemia is an inherited disease.
- \_\_\_\_\_ 3. Patients with lower than normal red blood cell counts have anemia.
- \_\_\_\_\_ 4. Patients with anemia often have sickle-cell crises.
- \_\_\_\_\_ 5. Patients with end-stage renal failure do not require dialysis.
- \_\_\_\_\_ 6. Patients experiencing a sickle-cell crisis do not experience severe pain.
- \_\_\_\_\_ 7. End-stage renal patients often miss their dialysis appointments.
- \_\_\_\_\_ 8. Sickle-cell anemia results in the destruction of the kidneys.
- \_\_\_\_\_ 9. End-stage renal patients in cardiac arrest may not respond to shocks from an AED.
- \_\_\_\_\_ 10. Blood pressures can be taken in the arm with a fistula.

## **HEMATOLOGIC AND RENAL EMERGENCIES LISTING**

*Complete the following lists.*

1. List four components of blood.

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2. List five complications from sickle-cell anemia.

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3. List four signs and symptoms that patients who miss their dialysis treatment may exhibit.

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4. List the four steps the EMT should take in treating a sickle-cell patient.

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## Chapter 24 Answer Key

### HANDOUT 24-1: Chapter 24 Quiz

1. C
2. C
3. C
4. D
5. A
6. B
7. A
8. A
9. C
10. B

### HANDOUT 24-2: In the Field

1. The patient has missed her dialysis treatment and as a result has a buildup of fluids, toxins, and electrolytes. The fluid is backing up into the lungs, as evidenced by wet lung sounds, and the excess fluid is causing the higher blood pressure. The fluid in the lungs is causing the shortness of breath and decreased oxygen saturation level. The body is trying to compensate for the lack of oxygen with the increased heart and respiratory rate.
2. The blood pressure should be taken on the arm without the fistula.
3. High-concentration oxygen by nonrebreather mask; position the patient seated upright in the stretcher or in the position of comfort; priority transport; reassessment; consider ALS intercept.

**HANDOUT 24-3: Chapter Review**

1. anemic
2. red blood cells
3. Renal failure
4. Plasma
5. dialysis
6. hemodialysis; peritoneal dialysis
7. congestive heart failure
8. kidney
9. automatic external defibrillator
10. spleen

**HANDOUT 24-4: True or False**

1. F
2. T
3. T
4. F
5. F
6. F
7. T
8. F
9. T
10. F

**HANDOUT 24-5: Hematologic and Renal Emergencies Listing**

- 1.Red blood cells; White blood cells; Plasma; Platelets
- 2.Destroyed spleen; Sickle-cell pain crisis; Acute chest syndrome; Priapism; Stroke
- 3.Shortness of breath or respiratory distress; Fluid accumulation in the lungs; Fluid accumulation throughout the body (hands and feet, etc.); Electrolyte imbalance
4. (1) Provide high-flow supplemental oxygen; (2) Monitor patients with acute chest syndrome for signs of inadequate respiration, and provide bag-valve mask ventilation as necessary; (3) Monitor patients with high fever for signs of hypoperfusion, and treat for shock as necessary; (4) Patients with acute stroke symptoms should be transported to a designated stroke center.