

CHAPTER 1

Introduction to Emergency Medical Care

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

EVALUATION

CHAPTER 1 QUIZ

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

_____ 1. Most states require refresher training for EMTs every:

- A. 1 to 2 years. C. 2 to 4 years.
B. 5 to 7 years. D. 4 to 5 years.

_____ 2. An EMT at a basic level is operating as a designated agent of the:

- A. EMT–Intermediate. C. Medical Director.
B. ER nurse. D. shift commander.

_____ 3. Which of the following is NOT a role or responsibility for an EMT?

- A. Transfer of care C. Lifting and moving
B. Personal safety D. Providing medical direction

_____ 4. The first concern of an EMT must be:

- A. patient safety. C. vehicle safety.
B. crew control. D. personal safety.

_____ 5. A policy set by an EMS Medical Director that allows EMTs to administer glucose to patients in certain circumstances without speaking to the

physician is an example of a(n):

- A. direct order. C. standing order.
- B. online order. D. QI order.

_____ 6. An order from an EMS system's on-duty physician given by radio or phone is an example of:

- A. off-line medical control. C. designated direction.
- B. online medical direction. D. standing orders.

_____ 7. The level of EMS training in which the emphasis is on activating the EMS system and controlling immediate life-threatening emergencies is:

- A. EMR. C. AEMT.
- B. EMT. D. Paramedic.

_____ 8. A good personal trait for an EMT is someone who:

- A. speaks his/her mind. C. is nonjudgmental.
- B. is insincere. D. always follows others.

_____ 9. Lists of steps, such as assessment and interventions, to be taken in different situations by EMS personnel are known as:

- A. protocols. C. enhanced QA.
- B. care directives. D. EMDs.

_____ 10. Which of the following is a way for an EMT to have a role in the quality improvement (QI) process?

- A. Have someone else check equipment.
- B. Read patient's hospital chart.
- C. Continue his or her education.

D. Submit run reports quickly even if incomplete.

_____ **11.** Which is an example of EMS being involved in public health?

A. Responding to a mass-casualty incident

B. Public vaccination programs

C. Providing free blood pressure checks at the station

D. Running calls with the fire department

_____ **12.** What is one outcome of medical research for EMS?

A. Evidence-based treatments

B. New EMS shift designs

C. Better EMS documentation

D. Improved ambulance design

REINFORCEMENT

IN THE FIELD

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

You and an EMT partner are assigned to EMS Unit 5 one morning in September. At 10:35 A.M. the emergency dispatcher directs you to an accident on Pumpkin Hollow Road. A woman driving her car along that road called 911 on her cell phone to report that the car ahead of her had swerved to avoid a dog, gone off the road, plunged into a ditch, and hit a tree.

Your unit pulls up at the scene six minutes later. As you don your personal protective equipment, you note that a county sheriff's car is already on scene. A deputy is kneeling beside a male in his early 20s who is lying on the ground. Even from the top of the ditch, you can see that the young man's shirt and pants are blood soaked. The deputy is applying direct pressure to the patient's right wrist. As you approach, the deputy tells you that after the crash, the patient, who had been wearing a seat belt, did not believe himself injured. However, before the deputy arrived, the patient attempted to get out of the car. In doing so, he sliced his wrist on jagged metal. Your partner takes over holding direct pressure to the wound. Meanwhile, you introduce yourself to the patient as you begin your assessment of his condition. The patient seems anxious and restless, and as you assess him, you talk to him, explaining what you are doing, and try to calm him. Because of the circumstances of the accident, you are especially alert during the assessment to the possibility that the patient may have received internal or spinal injuries. In fact, you determine that the patient is showing signs and symptoms of internal bleeding and shock (hypoperfusion). Shock is a life-threatening condition, so you decide that he needs immediate transport to the hospital, some 20 minutes away.

You have provided the patient with high-flow oxygen. Now, as you prepare him for transport, you ask the police officer to call in a request for a rendezvous with Paramedics of the Advanced Life Support (ALS) unit. When he has done so, he joins you and your partner in moving the patient, now immobilized to a long spine board, to the ambulance. You remain with the patient, holding direct pressure on the wrist wound, while your partner drives. You also monitor the patient's airway, breathing, and circulation and reassess his vital signs.

Seven minutes later, you meet the Paramedics of the ALS unit at the parking lot of a farm produce stand. You provide the Paramedics with a concise report of the patient's condition and your interventions. The Paramedics assume care of the patient. They contact medical direction and report on their findings and expected time of arrival at the hospital as transport continues. Just a few minutes after 11:00 A.M., the ambulance reaches Memorial Hospital. The emergency room staff is briefed on the patient's status and vital signs and on the care he has received. The hospital crew takes over and wheels the young man off to surgery.

1. Which components of the EMS system were involved in this scenario?
2. What roles and responsibilities of an EMT-B were demonstrated in this scenario?

CHAPTER 1 REVIEW

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

1. The modern Emergency Medical Services (EMS) system has been developed to provide what is known as _____ or _____ - _____ - _____ care.
2. In 1966 the National Highway Safety Act charged the United States _____ with developing EMS standards.
3. All transporting prehospital personnel should, at a minimum, be trained to the level of _____, using a standardized curriculum taught by qualified instructors.
4. The type of specialty hospital in which surgery teams are available on a round-the-clock basis is the _____ .
5. The specially trained EMS personnel who obtain information about emergency situations from callers and who also provide instructions for emergency care to callers are _____ .
6. The _____ system has the capability of automatically identifying the caller's phone number and location.
7. A(n) _____ is an EMT who has passed specific additional training programs and is authorized to provide some level of advanced life support (ALS).
8. The process of continuous self-review with the purpose of identifying aspects of the EMS system that require improvement is known as _____ .
9. Standing orders that allow EMTs to give certain medications or perform certain proce-

dures without speaking directly to a physician are examples of _____ -
_____ medical direction.

10. An EMT has responsibility for a patient until _____
_____ to hospital personnel has been properly completed.

LISTING EMT BASICS

Complete the following lists.

1. List at least seven of the ten categories in which the National Highway Traffic Safety Administration Technical Assistance Program sets standards for EMS systems.

2. List three types of specialty hospitals.

3. List two responsibilities of Emergency Medical Dispatchers.

4. List the four general levels of EMS training and certification.

5. List at least four roles and responsibilities of the EMT.

6. List three ways that an EMT can participate in public health.

EMS BASICS TRUE OR FALSE

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

- _____ 1. As an EMT, your authority to give medications and provide emergency care is an extension of the Medical Director's license to practice medicine.
- _____ 2. As an EMT, you will be one of the many persons and professions that come together to form an EMS system.
- _____ 3. Legal and ethical issues that affect physicians and nurses are not the concern of EMTs.
- _____ 4. Trauma centers are not yet considered "specialty" hospitals.
- _____ 5. Certification as an EMT requires only that a person successfully complete the DOT EMT National Standard Training Program.
- _____ 6. Keeping yourself safe is your second priority after patient safety when providing medical care.
- _____ 7. The care an individual patient requires may range from simple emotional support to life-saving CPR.
- _____ 8. You must never abandon care of the patient at the hospital until transfer to hospital personnel has been properly completed.
- _____ 9. As an EMT you should be able to lift and carry a minimum of 175 pounds.
- _____ 10. Good personality traits are really not very important to an EMT with excellent clinical skills.
- _____ 11. Good quality continuing education can often take the place of an original EMT training course.

- _____ **12.** Many states use the National Registry examinations as their certification exams.
- _____ **13.** Quality improvement is designed and performed to ensure that the public receives the highest quality prehospital care.
- _____ **14.** The EMT has no direct role in the quality improvement process.
- _____ **15.** Striving for quality in the care you personally give to patients and as a collective part of an ambulance squad upholds the highest standards of the EMS system.
- _____ **16.** Medical research does not play an important role in patient outcomes.

Chapter 1 Answer Key

HANDOUT 1-1: Chapter 1 Quiz

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

HANDOUT 1-2: In the Field

- 1.The emergency dispatcher; an Emergency Medical Responder (the deputy); the EMTs on Unit 5; the Paramedics from the ALS unit; the emergency room personnel at the hospital
- 2.Personal safety; safety of patient; patient assessment; patient care; lifting and moving; transport; transfer of care

HANDOUT 1-3: Chapter 1 Review

- 1.prehospital; out-of-hospital
- 2.Department of Transportation
3. EMT
- 4.trauma center
- 5.Emergency Medical Dispatchers
- 6.enhanced 911
- 7.Advanced EMT
- 8.quality improvement
- 9.off-line
- 10.transfer of care

HANDOUT 1-4: Listing EMT Basics

- 1.Regulation and Policy, Resource Management, Human Resources and Training, Transporta-

tion, Facilities, Communications, Public Information and Education, Medical Direction, Trauma Systems, Evaluation

2. Trauma centers, burn centers, pediatric centers, poison control centers, stroke centers, cardiac centers

3. To obtain appropriate information from callers and to provide medical instructions for emergency care

4. Emergency Medical Responder, EMT, AEMT, Paramedic

5. Roles and responsibilities include personal safety, safety of the crew, safety of the patient and bystanders, patient assessment, patient care, lifting and moving, transport, transfer of care

6. Injury prevention programs, public vaccination programs, and disease surveillance

HANDOUT 1-5: EMS Basics True or False

- | | | | | | | | |
|----|---|-----|---|-----|---|-----|---|
| 1. | T | 6. | F | 11. | F | 16. | F |
| 2. | T | 7. | T | 12. | T | | |
| 3. | F | 8. | T | 13. | T | | |
| 4. | F | 9. | F | 14. | F | | |
| 5. | F | 10. | F | 15. | T | | |

CHAPTER 2

The Well-Being of the EMT

HANDOUT 2-1 Evaluating Content Mastery Student's Name

EVALUATION

CHAPTER 2 QUIZ

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

_____ 1. It is important that an EMT takes care of his or her own health and well-

being by focusing on:

- A. getting any work-related injury treated at a hospital.
- B. double gloving on every call.
- C. prevention and wellness.
- D. showering after every shift.

_____ 2. Organisms that cause infection, such as viruses and bacteria, are:

- A. toxins. C. venoms.
- B. pathogens. D. poisons.

_____ 3. Equipment and procedures that protect you from the blood and body

fluids of the patient are referred to as:

- A. infective body fluid measures.
- B. isolated infection controls.
- C. preventive control substance standards.
- D. Standard Precautions.

_____ 4. Gloves, masks, and gowns are examples of:

- A. HEPA. C. PPE.
- B. CDC. D. OSHA.

_____ 5. The positive form of stress that helps people work under pressure and respond effectively is:

- A. distress. C. eustress.
- B. anxiety. D. residual tension.

_____ 6. A communicable disease that results in an infection that causes inflammation of the liver is:

- A. influenza. C. AIDS.
- B. hepatitis. D. MRSA.

_____ 7. The goal of the critical incident stress debriefing is to:

- A. assign blame for the incident.
- B. assist patients to recover.
- C. assist emergency care workers in dealing with the stress of an incident.
- D. allocate funds for ambulance services.

_____ 8. The first stage of stress is also known as:

- A. alarm reaction.
- B. resistance.
- C. exhaustion.
- D. surprise.

_____ 9. The stage of grieving in which a patient seeks to postpone death, even

for a short time, is:

A. anger. **C.** acceptance.

B. bargaining. **D.** denial.

_____ **10.** It is important that the EMT follow the same path in and out of a crime scene to:

A. expedite patient care.

B. assist the police officer in scene control.

C. prevent disturbing the crime scene.

D. thoroughly document the location of the crime.

_____ **11.** The agency that has issued strict guidelines detailing precautions against exposure to blood-borne pathogens is the:

A. American Red Cross Corporation.

B. Centers for Disease Control and Prevention.

C. Occupational Safety and Health Administration.

D. Citizens for a Progressive America.

_____ **12.** Which of the following materials is NOT recommended for gloves to be used when there is the potential for contact with blood and other body fluids?

A. Latex **C.** Cotton

B. Vinyl **D.** Synthetics

_____ **13.** Personal protective equipment includes all of the following EXCEPT:

A. HEPA respirator. **C.** scrubs.

- B.** vinyl gloves. **D.** goggles.
- _____ **14.** In cases where TB is suspected, use a:
- A.** HEPA respirator. **C.** cotton mask.
- B.** PPD gown. **D.** surgical mask.
- _____ **15.** A situation that would usually call for the use of a gown as protection would be one involving:
- A.** venous bleeding. **C.** a patient with a diagnosis of TB.
- B.** childbirth. **D.** a patient with a fractured leg.
- _____ **16.** The set of conditions resulting from a patient's immune system being attacked by the human immunodeficiency virus is known as:
- A.** hepatitis B. **C.** kephosis.
- B.** TB. **D.** AIDS.
- _____ **17.** The three words that sum up the actions required to respond to danger are:
- A.** run, regroup, reattack. **C.** observe, react, control.
- B.** plan, observe, react. **D.** evade, escape, eliminate.
- _____ **18.** A delayed stress reaction is more commonly known as a(n):
- A.** overload. **C.** psychosis.
- B.** toxicity. **D.** post-traumatic stress disorder.
- _____ **19.** The test that can detect exposure to tuberculosis is the:
- A.** PSA test. **C.** SAT test.
- B.** TST test. **D.** Elisa test.
- _____ **20.** Under the Ryan White CARE Act, the officials in every emergency

response organization who gather facts about possible emergency responder exposure to infectious diseases are the:

- A.** reporting officers. **C.** designated officers.
- B.** logistics officers. **D.** on-scene officers.

REINFORCEMENT

IN THE FIELD

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

You and your partner are dispatched to the scene of a motor vehicle accident. As you approach the scene, you note that a large tanker truck has overturned in the middle of the road. The truck's driver is trapped in the cab. You are also informed by dispatch that a bystander has reported that the truck has placards displayed on its exterior.

1. What should you do at this point?
2. If you determine that the truck carries hazardous materials, what should you do next?

CHAPTER 2 REVIEW

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

1. _____ are spread by tiny droplets sprayed during breathing, coughing, or sneezing.
2. Standard Precautions are also referred to as _____.
3. OSHA rules state that employers must develop a written exposure control plan and must provide emergency care providers with training, immunizations, and proper _____.
4. _____ refers to the introduction of disease or infectious materials.
5. Protective eyewear should provide protection from the _____ and the _____.
6. EMS personnel treating a patient suspected of having TB should use a(n) _____ or _____ respirator.
7. The infectious disease that kills the largest number of health-care workers in the United States each year is _____.
8. The _____ is the time between contact and first appearance of symptoms.
9. The main culprits in the transmission of many deadly infectious diseases are _____ and _____.
10. The _____ Act mandates a procedure by which emergency personnel can seek to find out if they have been exposed to potentially life-threatening diseases while providing patient care.

11. Hepatitis B and HIV/AIDS are examples of _____ diseases.
12. Stress has a positive form called _____ and a negative form called _____.
13. Signs and symptoms of a(n) _____ include the onset of difficulty breathing or chest pain just after a catastrophe.
14. An EMT can maintain well-being by adopting _____ health practices such as exercise, eating right, and regular checkups.
15. The great pandemic of 1918 and the recent H1N1 outbreak are both examples of the _____ virus.
16. A(n) _____ is a process in which a team of trained peer counselors and mental health professionals meet with rescuers and health-care providers who have been involved in a major incident.
17. To reduce stress, consider reducing the consumption of _____ and _____, which can have negative effects, including anxiety and disturbance of sleep patterns.
18. Wearing safe clothing and carrying a radio are two ways that the EMT can _____ for danger.
19. When there is an accident involving chemicals or when containers holding them begin to leak, there can be a(n) _____, which may pose serious dangers to you as an EMT.
20. The EMT's first priority at scenes involving violence is to be certain that the _____.

LISTING WELL-BEING BASICS

Complete the following lists.

1. List at least five key elements of the OSHA standards designed to protect emergency responders who have been exposed to blood-borne pathogens.

2. List at least five signs or symptoms of stress.

3. List four types of calls that have a higher-than-normal potential for causing stress in EMS personnel.

4. List and define five emotional stages a dying patient may go through.

5. List and explain the actions required of the EMT to respond to danger.

WELL-BEING BASICS TRUE OR FALSE

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

- _____ 1. Keeping yourself safe is your first priority when providing medical care as an EMT.
- _____ 2. Diseases are caused by pathogens, which may be spread through the air or by contact with blood or other body fluids.
- _____ 3. In the practice of prehospital emergency care, all body fluids must be considered infectious.
- _____ 4. Under OSHA guidelines, employers and employees share responsibility for precautions against exposure to blood-borne pathogens.
- _____ 5. Recent legislation has made it possible for emergency care providers to be notified if a patient with whom they have had contact turns out to be infected by a disease or virus.
- _____ 6. It is imperative that the EMT changes gloves between every patient contact.
- _____ 7. Because EMTs wear protective gloves while with patients, hand washing is not essential immediately after each call.
- _____ 8. An N95 or HEPA respirator should be worn after contact with an HIV-positive patient.
- _____ 9. In some jurisdictions, when a patient is suspected of having an infection spread by droplets, a surgical-type mask may be placed on the patient if he is alert and cooperative.
- _____ 10. TB is highly contagious.

- _____ **11.** HIV/AIDS presents a greater risk to health-care workers than hepatitis and TB.
- _____ **12.** Clean and sanitary conditions of the emergency response vehicles and work sites are the responsibility of both the EMT and the employer.
- _____ **13.** According to CDC guidelines, exposure to airborne pathogens may occur when you share “air space” with a TB patient.
- _____ **14.** An EMT exposed to blood-borne pathogens should seek medical attention within four weeks of the exposure.
- _____ **15.** If a contaminated patient is brought into an ambulance, the vehicle should be considered contaminated and should not be used again until it is thoroughly decontaminated.
- _____ **16.** Emergencies are rarely stressful.
- _____ **17.** Post-traumatic stress disorder is caused by a cumulative stress disorder.
- _____ **18.** Relaxing at the bar with your partner is a good way to unwind after a tough call.
- _____ **19.** The CISM process is controversial.
- _____ **20.** Prevention is the best way to minimize illness and injury.

Chapter 2 Answer Key

HANDOUT 2-1: Chapter 2 Quiz

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

HANDOUT 2-2: In the Field

1. Before approaching the truck, you should, from a safe distance, use binoculars to try to identify the placards on the truck. Check the *Emergency Response Guidebook* to see what the placards indicate.
2. If the placards indicate the truck carries hazardous materials, call for assistance from appropriate specialized teams before attempting to assist the driver. Provide basic emergency care only after the scene is secured and patient contamination is limited. Follow your local protocols concerning protective clothing.

HANDOUT 2-3: Chapter 2 Review

1. Airborne pathogens
2. infection control
3. personal protective equipment
4. Contamination
5. front; sides
6. N95; HEPA
7. hepatitis B
8. incubation period
9. blood; body fluids
10. Ryan White CARE
11. blood-borne
12. eustress; distress
13. acute stress reaction
14. preventive

15.influenza

16.critical incident stress debriefing

17.alcohol; caffeine

18. plan

19.hazardous materials incident

20.scene is safe

HANDOUT 2-4: Listing Well-Being Basics

1.Infection exposure control plan; adequate education and training; hepatitis B vaccination; personal protective equipment; methods of control; housekeeping; labeling; postexposure evaluation and follow-up

2.Irritability with family, friends, or coworkers; inability to concentrate; difficulty in sleeping; nightmares; loss of appetite; loss of interest in sexual activity; anxiety; indecisiveness; guilt; isolation; loss of interest in work

3.Multiple-casualty incidents; calls involving infants or children; severe injuries; abuse and neglect; death of a coworker

4.Denial (“not me”); anger (“why me?”); bargaining (“OK, but first let me . . .”); depression (OK, but I haven’t . . .”); acceptance (“OK, I’m not afraid.”)

5.Plan: know what to do in an emergency and prepare in advance; observe: be aware of the surroundings and potential sources of danger; react: the “three Rs” of reacting are (1) retreat to a safe location, (2) radio for help, and (3) reevaluate the situation for safety

HANDOUT 2-5: Well-Being Basics True or False

1. T

2. T

- 3. T
- 4. T
- 5. T
- 6. T
- 7. F
- 8. F
- 9. T
- 10. T
- 11. F
- 12. T
- 13. T
- 14. F
- 15. T
- 16. F
- 17. F
- 18. F
- 19. T
- 20. T

A.not allowing the weight to get close to your body.

B.keeping the lifted weight close to your body.

C. keeping your feet together.

D. locking out your knees.

_____ **5.**Which of the conditions below is NOT one that permits the use of an emergency move?

A. The scene is hazardous.

B.Care of life-threatening injuries requires repositioning.

C.A stable patient's position is hampering a police investigation.

D.You need to reach other patients who require urgent care.

_____ **6.**Patients who weigh 600 pounds or more may require a specialty built stretcher called a(n):

A. Stokes basket. **C.** barometric stretcher.

B. bariatric stretcher. **D.** deluxe stretcher.

_____ **7.**The technique used when quickly removing a patient from a vehicle is called:

A. log rolling. **C.** rapid extrication.

B. the long-axis drag. **D.** the Stokes move.

_____ **8.**Unresponsive patients *without* suspected spinal injuries should be placed in the:

A. position of comfort. **C.** recovery position.

B. Fowler's position. **D.** Trendelenburg position.

_____ **9.**The method that should be used when moving a patient onto a long

spine board is the:

A. log roll. **C.** direct ground lift.

B. cradle lift. **D.** firefighter's lift.

_____ **10.** The method commonly used to transfer a patient from a bed at home

to a stretcher is the:

A. extremity lift. **C.** firefighter's carry.

B. direct ground lift. **D.** draw-sheet method.

REINFORCEMENT

IN THE FIELD

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

Mark said, “Greg overreacted,” and Jim replied, “Yeah, he endangered the patient. Suppose the guy had a broken neck or something! He’s just lucky the guy was all right.” Overhearing this conversation, you are naturally curious and ask, “What happened?”

The two other EMTs tell you that there was a motor-vehicle collision—a high-speed crash in which the cars were found T-boned and the passengers seriously injured. When Greg’s ambulance arrived, it was assigned by EMS command to care for the patients in car B. After approaching the cars, Greg did a quick scene size-up, including assessing for scene safety. The position in which the cars came to rest after impact made access on the driver’s side impossible, so Greg looked into the passenger-side window of car B. He could see that the driver, who appeared unresponsive, had a large cut over his left eyebrow that was bleeding profusely. An initial assessment of the passenger revealed no obvious injuries.

It was at this point that Greg called EMS command and asked for additional resources, including the heavy rescue team. He then immediately extricated the passenger to gain access to the driver. Despite the fact that Greg now had access to the driver and could start patient care, he was unable to extricate the driver without the assistance of heavy rescue. Eventually, the heavy rescue team disentangled the driver from the dash. He was then transported to the trauma center.

1. What action taken by Greg might have troubled Jim and Mark?

Did Greg do the right thing?

2. Which patient-moving technique should have been used by Greg?

3. If the driver had not appeared to be seriously injured, what should have happened differently?

CHAPTER 3 REVIEW

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

1. The proper use of your body to facilitate lifting and moving a patient is called _____.
2. A major cause of EMT injuries is _____ while lifting.
3. When possible, it is safer and more efficient to move a patient over distances on a _____ device.
4. When lifting a patient-carrying device, it is best to use a(n) _____ number of people.
5. When using the power grip, hands should be kept at least _____ inches apart when possible.
6. The most common emergency drags are all _____ - _____ drags.
7. During a _____, the patient is stabilized manually before being removed from a vehicle onto a long spine board.
8. Usually patients are transported over rough terrain or out of the woods via a(n) _____ stretcher.
9. To slide a patient from an ambulance stretcher to a hospital bed, the EMT would use the _____ - _____ method.
10. Ideally, a minimum of _____ people would be used to move a stretcher over rough terrain or long distances.

BODY MECHANICS BASICS

Write the word or words that complete the following points to keep in mind to ensure safe lifting and carrying.

1. Position your _____ properly—on a firm, level surface and shoulder width apart.
2. When lifting, use your _____ and not your back to do the lifting.
3. When lifting, never _____ or attempt to make any _____ other than the lift.
4. When lifting with one hand, do not _____.
5. Keep the weight as close to your _____ as possible.
6. When carrying a patient on stairs, use a(n) _____ when possible.
7. Keep your back in a(n) _____ - _____ position.
8. Avoid reaching more than _____ to _____ inches in front of the body.
9. When pushing or pulling, _____, rather than _____, whenever possible.
10. If a weight is below waist level, push or pull from a(n) _____ position.

LIFTING AND CARRYING MATCHING

I. Write the letter of the patient-carrying device in the space provided next to the situation for which it is appropriate.

- A. Long backboard
- B. Scoop stretcher
- C. Basket stretcher
- D. Stair chair
- E. Short backboard
- F. Bariatric stretcher

- _____ 1. A patient is found seated in the front seat of a car after a collision.
- _____ 2. An elderly woman has fallen between the toilet and the bathtub.
- _____ 3. A hunter has twisted her knee in the woods.
- _____ 4. A child has fallen out of a tree fort.
- _____ 5. A middle-aged male has chest pain in his two-story brownstone house.
- _____ 6. An 850-pound woman needs an interfacility transfer.

II. Write the letter of the classification of patient move in the space provided next to the patient move it describes.

- A. Emergency move—one-rescuer carry
- B. Emergency move—one-rescuer drag
- C. Nonurgent move—no spinal injury evident

- _____ 1. Cradle
- _____ 2. Incline

- _____ **3.**Draw-sheet method
- _____ **4.**Blanket
- _____ **5.**Clothes
- _____ **6.**Piggyback
- _____ **7.**Pack strap
- _____ **8.**Extremity
- _____ **9.**Foot
- _____ **10.** Direct ground

Chapter 3 Answer Key

HANDOUT 3-1: Chapter 3 Quiz

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

HANDOUT 3-2: In the Field

1. Greg decided to perform an urgent move of the stable patient based on urgent need to gain access to the unstable patient. Emergency medical practice allows this deviation from the rule that potentially injured trauma patients need spinal immobilization before movement if such delays in packaging the patient would compromise other patients.
2. Greg could have used the rapid extrication technique, explained in detail in chapter 3, “Gaining Access and Rescue Operations.” This technique is used to move patients when an initial assessment has determined an urgent move is needed to save that patient’s life or the life of another to whom access is blocked by the first patient.
3. Based on the mechanism of injury, both patients should have received spinal immobilization via short board or vestlike extrication device, then been transferred to a long backboard.

HANDOUT 3-3: Chapter 3 Review

1.body mechanics

2.twisting

3.wheeled

4. even

5. ten

6.long-axis

7.rapid extrication

8. basket

9.draw-sheet

10. four

HANDOUT 3-4: Body Mechanics Basics

1. feet

2. legs

3.twist; moves

4.compensate

5. body

6.stair chair

7.locked-in

8. 15; 20

9.push; pull

10.kneeling

HANDOUT 3-5: Lifting and Carrying Matching

Part I.

1. E
2. B
3. C
4. A
5. D
6. F

Part II.

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

10.C

- B.** practiced. **D.** responsible.
- _____ 5. When a patient refuses care, he or she must sign a(n):
- A.** codicil. **C.** DNR order.
- B.** insurance rider. **D.** release form.
- _____ 6. Refusal to go to a hospital may be a form of _____, or unwillingness to accept the idea of illness.
- A.** revenge **C.** acceptance
- B.** denial **D.** bargaining
- _____ 7. If an EMT forces a competent patient to go to the hospital against his or her will, the EMT may be charged with:
- A.** misprision. **C.** neglect.
- B.** assault. **D.** breach of duty.
- _____ 8. A legal document, usually signed by the patient and his physician, stating that the patient has a terminal illness and does not wish to prolong life through resuscitative efforts is called a(n):
- A.** surrogate statement. **C.** codicil.
- B.** DNR order. **D.** unspecified treatment order.
- _____ 9. A person whom the signer of a document names to make health-care decisions in case the signer is unable to make such decisions for himself or herself is called a(n):
- A.** proxy. **C.** designated agent.
- B.** assistant. **D.** heir.
- _____ 10. Legislative measures intended to provide legal protection for citi-

zens and some health-care personnel who administer emergency care are known as:

- A.** First Responder laws. **C.** Helping Hands legislation.
- B.** EMS Acts. **D.** Good Samaritan laws.

_____ **11.** An EMT's obligation in certain situations to provide care to a patient is referred to as a(n):

- A.** agency. **C.** proxy.
- B.** surrogate's role. **D.** duty to act.

_____ **12.** If a jury finds that an EMT had a duty to a patient, that he failed to carry out that duty properly, and that his action caused harm to the patient, the EMT would be guilty of:

- A.** failure to act. **C.** fraud.
- B.** libel. **D.** negligence.

_____ **13.** Statutes that allow a person to abandon his or her parental duties and legally drop off a child to an EMS station or other public safety building are called:

- A.** safe haven laws. **C.** Ryan White laws.
- B.** Amber laws. **D.** free parent laws.

_____ **14.** A DNR order is one example of a(n):

- A.** Good Samaritan law. **C.** warrant.
- B.** confidentiality agreement. **D.** advance directive.

_____ **15.** The principle that information about a patient's history, condition, or treatment must not be shared with unauthorized parties is called:

- A. duty to withhold. C. confidentiality.
- B. breach of duty. D. disclosure.

_____ 16. If you discover that a critically injured patient is an organ donor, as an EMT you should:

- A. not provide further care. C. notify the staff at the hospital.
- B. verify the organ donor card. D. notify the police.

_____ 17. Once police have made the scene safe, the priority of the EMT at a crime scene is to:

- A. preserve evidence. C. contact dispatch.
- B. provide patient care. D. assist the investigation.

_____ 18. Leaving a patient after care has been initiated and before the patient has been transferred to someone with equal or greater medical training is known as:

- A. assault. C. false imprisonment.
- B. abandonment. D. proximate cause.

_____ 19. The extent and limits of the job that the EMT does are referred to as:

- A. duty to act. C. limits of liability.
- B. professional practice. D. scope of practice.

_____ 20. Simply stated, liability means:

- A. moral responsibility. C. ethical responsibility.
- B. legal responsibility. D. referred responsibility.

|

REINFORCEMENT

IN THE FIELD

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

You are dispatched to 14 Mountain View Drive for a “difficulty breathing” call. There is something familiar about the address, which is in a neighborhood of fashionable homes, but you can't quite place it.

Pulling up at the residence, you quickly ensure that the scene is quiet and safe. You and your partner grab the jump kit and head for the front door. Before you can ring the bell, a man swings the door open and motions you inside. Now you know why the address is familiar. The man is Robert Gallow, a prominent figure in city politics.

He leads you upstairs, explaining as you go that his son has long suffered from cystic fibrosis. Right now, he's having extreme difficulty in breathing, and Mr. Gallow would like you to transport him to Memorial Hospital.

In the bedroom to which he leads you, you find the son, Ken, lying in bed. He appears to be in his early 20s and is obviously struggling to breathe. Yet as you approach the bed, he manages to gasp out, “Go 'way . . . no doctors . . . want to die.”

His father turns to you and says, “Don't pay him any mind. Just get him on oxygen and to the hospital.”

1. What should you do in this situation?

Later that day, you return to base. As you're getting out of your vehicle, a woman walks up. She identifies herself as a reporter for the local paper and says, “I hear there was a tough call at Bob Gallow's house with his son Kenny. You know, you can help protect yourself if you get the

straight facts into the paper. I won't have to mention your name, and I won't reveal who my sources are."

2. What should you do in this situation?

CHAPTER 4 REVIEW

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

1. In the case of a(n) _____ patient, consent to treat may be assumed.
2. When dealing with children and mentally incompetent adults, the _____ and _____ have the legal authority to give consent.
3. _____ minors are those who are married or granted legal adult status to provide consent.
4. Failure to provide the standard of care is one of three elements that must be proved in a case involving a charge of _____ against an EMT.
5. If all efforts fail and the patient does not accept your care or transportation, you must have the patient sign a(n) _____.
6. To refuse care, a patient must be _____ and understand the risks of rejecting treatment.
7. A _____ is an advance directive that prevents unwanted resuscitation.
8. An EMT who is on an ambulance and is dispatched to a call clearly has a(n) _____.
9. In many states, an off-duty EMT has no legal obligation to provide _____.
10. If the EMT is off duty and begins care, then leaves the patient before other trained personnel arrive, he may be considered to have _____ the patient.

11. _____ laws have been developed in most states to provide immunity to individuals trying to help others in emergencies.
12. The only time that confidential information about a patient may be disclosed is when the patient has signed a(n) _____.
13. A(n) _____ is a patient who has completed a legal document that allows for that patient's organs and tissues to be used by others in the event of his or her death.
14. Many lawsuits that allege negligence often involve claims of _____ during involuntary transports.
15. A(n) _____ is a place where a crime has been committed or any place that evidence relating to a crime may be found.
16. The term _____ describes a wide range of things usually invisible to the naked eye that can be found by investigators at a crime scene.
17. Many localities have _____ for reporting child, elderly, or domestic abuse.
18. Consent given by adults who are of legal age and mentally competent to make a rational decision in regard to their medical well-being is called _____.
19. The primary _____ consideration within the EMT's scope of practice is to make patient care and well-being a priority.
20. When an unconscious patient is so severely injured that his condition is life threatening, the EMT may treat the patient under the doctrine known as _____.

MEDICAL/LEGAL AND ETHICAL ISSUES LISTING

Complete the following lists.

1. List the two things that must be monitored frequently when transporting a restrained patient.

2. List four actions you might take to convince a patient who is refusing care to accept transport to a hospital.

3. List the three conditions that must be proven for a legal finding of negligence to be made against an EMT.

4. List at least three types of incidents that many states require health-care professionals to report to authorities.

5. List five actions you can take to help police by preserving evidence at a crime scene.

MEDICAL/LEGAL AND ETHICAL ISSUES TRUE OR FALSE

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

- _____ 1. Within the scope of practice of an EMT, the primary ethical consideration is to make patient care and well-being a priority, even if this requires some personal sacrifices.
- _____ 2. Consent, or permission from the patient, is required for any treatment or action by the EMT.
- _____ 3. An unconscious patient must regain consciousness before consent can be granted and treatment can begin.
- _____ 4. Expressed consent must be obtained from patients who are physically or mentally able to give it.
- _____ 5. It is not legally necessary to explain all procedures to the conscious patient.
- _____ 6. Emergency care for a patient identified as an organ donor should not differ from the care provided to any other patient.
- _____ 7. Children and mentally incompetent adults are legally allowed to provide consent for their treatment.
- _____ 8. Patients who are mentally competent have the right to refuse medical care.
- _____ 9. A release form is designed to protect health-care providers from liability arising from the patient's informed refusal of treatment and transport.
- _____ 10. If an EMT follows the appropriate steps when treating patients who refuse care, it is a guarantee that he will be free from liability.
- _____ 11. An EMT may be able to "arrest" a patient who refuses care in order to provide

necessary treatment.

- _____ **12.** In all cases of refusal, the EMT should advise the patient to feel free to call back at any time if he has a problem or wishes to be cared for or transported.
- _____ **13.** A DNR order is an actual legal document.
- _____ **14.** It is better to be criticized or sued for saving a life than for letting a patient die.
- _____ **15.** In most cases the oral requests of a family member are a sufficient reason to withhold care.
- _____ **16.** Patient refusal is a major cause of legal actions against EMS systems or EMTs.
- _____ **17.** Lawsuits against EMTs are actually quite common.
- _____ **18.** An EMT's duty to act continues throughout the call.
- _____ **19.** The duty to act is always clear in the situations that EMTs face.
- _____ **20.** Good Samaritan laws do not prevent someone from initiating a lawsuit, nor will they protect the rescuer from being found liable for acts of gross negligence and other violations of the law.

Chapter 4 Answer Key

HANDOUT 4-1: Chapter 4 Quiz

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

HANDOUT 4-2: In the Field

- 1.**Ken is an adult, and if he is competent, he should make his own health-care decisions unless he named his father as his health-care proxy. Attempt to determine if Ken is competent. Contact medical direction for guidance. Discuss the consequences of refusing treatment with Ken. Be sure that he signs a refusal of care if treatment is refused.
- 2.**Patient confidentiality is the controlling factor. Inform her that you are not allowed to discuss patient care issues by law and refer her to your department's public information officer or appropriate supervisor.

HANDOUT 4-3: Chapter 4 Review

- 1.**unconscious
- 2.**parents; guardians
- 3.**Emancipated
- 4.**negligence
- 5.**refusal form
- 6.**mentally competent
- 7.**DNR order
- 8.**duty to act
- 9.** care
- 10.**abandoned
- 11.**Good Samaritan
- 12.**written release
- 13.**organ donor
- 14.**improper restraint

- 15. crime scene
- 16. microscopic evidence
- 17. hotlines
- 18. expressed consent
- 19. ethical
- 20. implied consent

HANDOUT 4-4: Medical/Legal and Ethical Issues Listing

- 1. Mental status and vital signs
- 2. Spend time speaking to the patient; inform the patient of the consequences of not going to the hospital; consult medical direction; contact family members for their help in convincing the patient; call law enforcement personnel; try to determine why the patient is refusing care
- 3. Findings must be made that (1) the EMT had a duty to the patient; (2) the EMT did not provide the standard of care; and (3) the actions or inactions of the EMT caused harm to the patient.
- 4. Domestic abuse; child abuse; elder abuse; violence; sexual assault; intoxicated persons with injury; mentally incompetent persons with injury; intoxicated person with injuries
- 5. Remember what you touch; minimize your impact on the scene; avoid using the phone; move furniture as little as possible; stay in the immediate area of the patient at the scene; do not use the bathroom; make a statement about your actions/observations at the scene if necessary

HANDOUT 4-5: Medical/Legal and Ethical Issues True or False

- 1. T
- 2. T

- 3. F
- 4. T
- 5. F
- 6. T
- 7. F
- 8. T
- 9. T
- 10. F
- 11. F
- 12. T
- 13. T
- 14. T
- 15. F
- 16. T
- 17. F
- 18. T
- 19. F
- 20. T

- _____ 5. The term that refers to a position closer to the midline is:
- A. medial. C. posterior.
B. lateral. D. anterior.
- _____ 6. _____ are added to the beginnings of root words to modify or qualify their meaning.
- A. Suffixes C. Compounds
B. Prefixes D. Descriptors
- _____ 7. Which of the following is NOT an example of an acronym?
- A. EMS C. CPAP
B. CPR D. WNL
- _____ 8. The medical term _____ refers to “both sides” of something.
- A. ventral C. superior
B. bilateral D. unilateral
- _____ 9. The abdomen is divided into _____ parts, called _____.
- A. six; abdominals C. four; sections
B. four; quadrants D. three; bilaterals
- _____ 10. The term that describes a patient who is transported in the seated position is:
- A. the Fowler position. C. the position of comfort.
B. the prone position. D. the supine position.

REINFORCEMENT

IN THE FIELD

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

You and your crew are dispatched for a call about a fall at a home. As the ambulance pulls up to a one-family house, you survey the scene. A truck for Cleaner Sweep Chimney Services is parked in the driveway. There is scaffolding around a chimney at the east end of the house. At its base, two men are kneeling over a third person who is lying supine on the ground. The scene appears to be safe, so you grab your jump kit and approach. As you do, one of the men runs over to you and tells you that the crew had been repointing the chimney when Al lost his footing and fell about 18 feet to the ground.

Your patient is not conscious when you begin your initial assessment. After determining that he is breathing adequately, you note a large laceration on the left side of the patient's jaw. You also note that an area on the outside of the patient's left arm, just above the elbow, is swollen and deformed. There is also a large laceration on the front of the patient's upper left thigh just above the kneecap, which is bleeding profusely.

1. Describe the location of the injury to the patient's head.
2. Describe the location of the injury to the patient's arm.
3. Describe the location of the injury to the patient's lower extremity.

CHAPTER 5 REVIEW

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

1. Use of the _____
_____ ensures that health-care providers will use the same starting point when describing the body and will understand one another's references.
2. A(n) _____ is the kind of flat surface that would be formed if you sliced straight through an imaginary human body.
3. The _____ line is one that is drawn vertically from the middle of the armpit to the ankle.
4. The elbow is _____ to the shoulder because the elbow is farther away from the torso than the shoulder.
5. Anatomically speaking, the nose is _____ to the mouth.
6. The _____ - _____
_____ extends vertically from the midarmpit to the ankle.
7. The _____ "*-itis*" is used to describe inflammation.
8. The shoulder is _____ to the elbow.
9. The study of body function is known as _____.
10. A medical term that is made up of two or more whole words is known as a _____.

MEDICAL TERMINOLOGY TRUE OR FALSE

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

- _____ 1. Anatomy refers to the body's structures and functions.
- _____ 2. The directions *left* and *right* always refer to the EMT's left and right.
- _____ 3. The imaginary midline divides the body into upper and lower halves.
- _____ 4. The term *lateral* refers to a position farther away from the midline.
- _____ 5. Anatomically speaking, the elbow is distal to the hand.
- _____ 6. There is one midclavicular line centered between the two clavicles.
- _____ 7. In the Fowler's position, a patient is seated.
- _____ 8. The term *intra-abdominal* indicates the exterior surface of the abdomen.
- _____ 9. To maintain a professional demeanor, EMTs should always use medical terminology when speaking to patients.
- _____ 10. *Palmar* refers to the palm of the hand and *plantar* refers to the sole of the foot.

Chapter 5 Answer Key

HANDOUT 5-1: Chapter 5 Quiz

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

HANDOUT 5-2: In the Field

1. The injury is on the left mandible.
2. The wound is on the lateral surface of the patient's left arm, superior to the elbow.
3. The upper thigh wound is on the anterior surface of the left lower extremity superior to the knee.

HANDOUT 5-3: Chapter 5 Review

1. standard anatomical position
2. plane
3. midaxillary

4. distal
5. superior
6. midaxillary line
7. suffix
8. proximal
9. physiology
10. compound

HANDOUT 5-4: Medical Terminology True or False

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

CHAPTER 6

Anatomy and Physiology

HANDOUT 6-1: Evaluating Content Mastery Student's Name

EVALUATION

CHAPTER 6 QUIZ

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

- _____ 1. When the body cannot get enough oxygen, it makes ATP via:
- A. aerobic metabolism. C. digestion.
B. anaerobic metabolism. D. lacrimation.
- _____ 2. The principal organ of the renal system is the:
- A. ureters. C. kidney.
B. nephron. D. ladder.
- _____ 3. The organ that produces eggs in a female is the:
- A. vagina. C. fallopian tubes.
B. ovary. D. labia.
- _____ 4. This division (region) of the spinal column is subject to injury because it is NOT supported by another part of the skeleton:
- A. Thoracic C. Sacral
B. Lumbar D. Coccyx
- _____ 5. The pelvis is commonly referred to as the:

- A.** hip. **C.** hamstring.
B. thigh. **D.** shin.

_____ 6. The scapula and acromion are parts of the:

- A.** pelvis. **C.** ankle.
B. shoulder. **D.** wrist.

_____ 7. Inferiorly, the knee connects with the:

- A.** radius and fibula. **C.** tibia and fibula.
B. femur and tibia. **D.** ulna and tibia.

_____ 8. The body contains how many different types of muscle?

- A.** Two **C.** Four
B. Three **D.** Five

_____ 9. After inhaled air goes through the larynx, the NEXT part of the respiratory system the air passes as it moves to the lungs is the:

- A.** bronchus. **C.** epiglottis.
B. larynx. **D.** trachea.

_____ 10. The chamber that pumps oxygen-rich blood out of the heart for distribution to the rest of the body is the:

- A.** right atrium. **C.** left atrium.
B. right ventricle. **D.** left ventricle.

_____ 11. The largest artery in the body is the:

- A.** aorta. **C.** carotid.
B. pulmonary. **D.** femoral.

_____ 12. The organ that produces sperm is the:

A. scrotum. **C.** testes.

B. penis. **D.** epididymis.

_____ **13.** The blood vessels where gases, nutrients, and waste products are exchanged between the body's cells and the bloodstream are the:

A. arteries. **C.** capillaries.

B. venules. **D.** arterioles.

_____ **14.** The component of the blood that has a primary function of carrying oxygen to tissue is:

A. red blood cells. **C.** white blood cells.

B. plasma. **D.** platelets.

_____ **15.** The pressure created in the arteries when blood is forced out of the heart is referred to as:

A. radial. **C.** femoral.

B. systolic. **D.** diastolic.

_____ **16.** The adequate supply of oxygen and nutrients to the organs and tissues of the body is called:

A. automaticity. **C.** perfusion.

B. conduction. **D.** autonomicity.

_____ **17.** The central nervous system is made up of the brain and the:

A. sensory nerves. **C.** motor nerves.

B. spinal cord. **D.** endocrines.

_____ **18.** The substance that regulates acidity and is produced by the kidneys is called:

- A.** chyme. **C.** blood.
B. bicarbonate. **D.** testosterone.

_____ **19.** The endocrine system produces chemicals called:

- A.** hormones. **C.** dioxins.
B. carotenes. **D.** biles.

_____ **20.** Body functions such as digestion and heart rate are controlled by
the:

- A.** central nervous system. **C.** autonomic nervous system.
B. peripheral nervous system. **D.** automatic nervous system.

CHAPTER 6 REVIEW

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

1. When oxygen is used to break down glucose, it is called _____ metabolism.
2. Bones are connected to bones by _____, while muscles are connected to bones by _____.
3. The kidneys filter out a waste product called _____.
4. The spinal column is made up of _____.
5. The _____ contains the heart, lungs, and major blood vessels.
6. The _____ consists of the acetabulum and the ball at the head of the femur.
7. The elbow is an example of a(n) _____ joint.
8. The property that allows the heart to generate and conduct electrical impulses on its own is _____.
9. During respiration, gas exchange with the bloodstream takes place in the small sacs called _____.
10. The passive section of the respiratory cycle in which the intercostal muscles and diaphragm relax is known as _____.
11. The respiratory anatomy of infants and children differs from that of adults in that the _____ is narrower, softer, and more flexible.
12. Because the chest walls of infants and children are softer, they rely more on the

- _____ for breathing.
13. The upper chambers of the heart are the _____, while the lower chambers are the _____.
 14. The _____ carries oxygenated blood from the lungs to the heart.
 15. The membrane-enclosed fragments of specialized cells that release chemical factors needed to form blood clots are _____.
 16. When the left ventricle of the heart is relaxing and refilling, the pressure remaining in the arteries is the _____ blood pressure.
 17. _____ and _____ are the names for the organs that produce sperm and eggs respectively.
 18. The peripheral nervous system is made up of _____ nerves and _____ nerves.
 19. The layers of the skin are the _____, the _____, and the _____.
 20. The _____ produces chemicals called hormones that help to regulate many body activities and functions.

ANATOMY AND PHYSIOLOGY TRUE OR FALSE

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

- _____ 1. The whiplash often accompanying car accidents poses a special danger to the sacral spine.
- _____ 2. The ulna is the inner and larger bone of the lower leg.
- _____ 3. The heart muscle has its own blood supply through the coronary artery system.
- _____ 4. The cricoid cartilage forms the lower portion of the trachea.
- _____ 5. The left ventricle is the strongest and most muscular part of the heart.
- _____ 6. The cardiac conduction system delivers waste gases to the lungs, where they can be expelled from the body.
- _____ 7. The femoral artery is the main source of blood supply to the upper arm.
- _____ 8. The primary function of the red blood cells is to carry oxygen to the tissues and carbon dioxide away from the tissues.
- _____ 9. In a blood pressure reading of 120/80, the 120 refers to the diastolic pressure while the 80 refers to the systolic pressure.
- _____ 10. Perfusion is a life-threatening condition that requires immediate treatment.
- _____ 11. The skin plays an important part in regulating the body's temperature.
- _____ 12. The epidermis contains no blood vessels or nerves.
- _____ 13. The endocrine system secretes epinephrine, which is critical to the body's use of glucose.

THE CIRCULATORY SYSTEM

Demonstrate your knowledge of the body's circulatory system by correctly labeling its major arteries and veins on the diagram below.

THE CIRCULATORY SYSTEM

Demonstrate your knowledge of the body's circulatory system by correctly labeling its major arteries and veins on the diagram below.

The diagram shows a human silhouette with the circulatory system highlighted. The heart is centrally located. Major arteries are shown as thick, dark lines branching out from the heart to the head, arms, and legs. Major veins are shown as thinner, lighter lines branching out from the limbs and torso back to the heart. Labels 1 through 8 point to specific vessels: 1 (head), 2 (right arm), 3 (heart), 4 (left arm), 5 (hand), 6 (leg), 7 (torso), and 8 (foot).

MAJOR ARTERIES

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

MAJOR VEINS

1. _____

2. _____

3. _____

Major Arteries

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Major Veins

- 1.
- 2.
- 3.

Chapter 6 Answer Key

HANDOUT 6-1: Chapter 6 Quiz

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

HANDOUT 6-2: Chapter 6 Review

- 1.aerobic**
- 2.ligaments; tendons**
- 3. urea**
- 4. 33 vertebrae**
- 5.thoracic cavity**
- 6.hip joint**
- 7. hinge**
- 8.automaticity**
- 9. alveoli**
- 10.exhalation**
- 11.trachea**
- 12.diaphragm**
- 13.atria; ventricles**
- 14.pulmonary vein**
- 15.platelets**
- 16.diastolic**
- 17.Testes; ovaries**
- 18.sensory; motor**
- 19.epidermis; dermis; subcutaneous layers**
- 20.endocrine system**

HANDOUT 6-3: Anatomy and Physiology True or False

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

HANDOUT 6-4: The Circulatory System

Major Arteries

1. Carotid
2. Pulmonary
3. Aorta
4. Brachial
5. Radial
6. Femoral

7. Posterior tibial

8. Dorsal pedis

Major Veins

1. Pulmonary

2. Superior vena cava

3. Inferior vena cava

B. SAO₂. **D.** FiO₂.

_____ **5.** An airway that is open to allow air to move in and out is called:

A. active. **C.** palliated.

B. patent. **D.** perfect.

_____ **6.** The volume of air that is moved in and out during one breathing cycle is called:

A. hourly volume. **C.** minute volume.

B. inspired volume. **D.** tidal volume.

_____ **7.** The air inside the space between the mouth and the lungs is called the:

A. airway space. **C.** live air space.

B. ventilation space. **D.** dead air space.

_____ **8.** Specific receptors in the brain and vessels that register oxygen and carbon dioxide levels are called:

A. baroreceptors. **C.** microvilli.

B. chemoreceptors. **D.** carboxy receptors.

_____ **9.** The force exerted by proteins in the blood that tends to attract water away from the area around the body cells and pulls it toward the bloodstream is called:

A. hydrostatic pressure. **C.** cellular osmotic pressure.

B. plasma oncotic pressure. **D.** attractive pressure.

- _____ 10. Pressure created inside the blood vessels that pushes fluid out of the vessels is called:
- A. plasma oncotic pressure. C. partial pressure.
 - B. hydrostatic pressure. D. cellular osmotic pressure.
- _____ 11. Specialized cells that measure the pressure inside blood vessels are called:
- A. chemoreceptors. C. oncotic receptors.
 - B. fluid receptors. D. stretch receptors.
- _____ 12. The amount of blood that returns to the heart prior to contraction is called:
- A. afterload. C. contractility.
 - B. preload. D. stroke volume.
- _____ 13. The amount of blood moved by the heart in one minute is called:
- A. stroke volume. C. cardiac output.
 - B. preload. D. afterload.
- _____ 14. Hypoperfusion is another name for:
- A. shock. C. stress.
 - B. distress. D. V/Q mismatch.
- _____ 15. An exaggerated response by the immune system to a particular substance is called:
- A. hyperperfusion. C. hypersensitivity.
 - B. hypertrophy. D. hypermetabolism.

REINFORCEMENT

IN THE FIELD

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

You are dispatched to a residence for a chest pain call. As you enter the living room, you notice that the patient is seated on the couch. He is pale, diaphoretic, and having trouble staying awake. His wife said he just got into a big fight with his son and began having chest pain. He has a cardiac history, so he took one of his prescribed nitroglycerin pills. After placing the patient on high concentration oxygen by nonrebreather mask and performing the primary assessment, you recognize that the patient's blood pressure is low, his breathing is faster than normal, and his pulse is fast.

1. How would the patient's low blood pressure affect his preload and afterload?
2. How would these changes to preload and afterload affect the patient's cardiac output?
3. How is the patient's body attempting to compensate for these changes?

CHAPTER 7 REVIEW

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

1. _____ is the use of oxygen to break down sugar to make ATP.
2. _____ are receptors in the brain and vessels that measure the levels of oxygen and carbon dioxide.
3. _____ is the definition of shock.
4. The amount of air moved by the lungs in one minute is called the _____.
5. _____ is the degree to which fluid and substances can pass through the capillary walls.
6. Afterload is a function of _____.
7. Cardiac output is defined as _____ times _____.
8. Fluids reside in the body in the _____ and _____ spaces.
9. The force of the contraction of the heart is known as _____.
10. When either perfusion or ventilation is not adequate to supply the body, it is called a _____.
11. An abnormal decrease in the total amount of water in the body is called _____.

12. Swelling associated with the movement of water is called _____.

13. The most common digestive disorders are _____ and

_____.

14. Hypersensitivity is more commonly known as a(n) _____

_____.

15. The _____ _____ _____ plays

a major role in the regulation of the dilation and constriction of blood vessels.

UNDERSTANDING PATHOPHYSIOLOGY TRUE OR FALSE

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

- _____ 1. Hyperperfusion is synonymous with shock.
- _____ 2. Preload is a function of systemic vascular resistance.
- _____ 3. Dead air space is the air found at the bottom of the lungs.
- _____ 4. Tidal volume is the amount of air moved in one minute.
- _____ 5. The concentration of oxygen in the air that a person breathes in is called the fraction of inspired oxygen.
- _____ 6. Contractility refers to the force of the contraction of the heart.
- _____ 7. Seventy percent of the water in the body is found in the interstitial space.
- _____ 8. An allergic reaction to a substance is also known as hypersensitivity.
- _____ 9. Swelling caused by the accumulation of fluid where it should not be is called dehydration.
- _____ 10. The body metabolizes sugar to produce chemoreceptors.

PATHOPHYSIOLOGY LISTING

List four ways respiratory function can be disrupted.

List eight signs of neurologic impairment.

List three ways fluid balance can be disrupted.

List four types of blood vessel dysfunction.



Chapter 7 Answer Key

HANDOUT 7-1: Chapter 6 Quiz

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

HANDOUT 7-2: In the Field

- 1.The reduced blood pressure will reduce both preload and afterload.
- 2.A reduction in both preload and afterload will reduce cardiac output by reducing stroke volume by not filling the heart as completely or efficiently.
- 3.The body will try to compensate for the reduced stroke volume by increasing heart rate to increase cardiac output to normal levels. The patient will also increase his breathing to try to correct the ventilation/perfusion mismatch caused by the decreased cardiac output.

HANDOUT 7-3: Chapter 7 Review

- 1.Aerobic metabolism
- 2.Chemoreceptors
3. Shock
- 4.minute volume
- 5.Permeability
- 6.systemic vascular resistance
- 7.stroke volume, heart rate
- 8.intravascular, intracellular, interstitial
- 9.contractility
10. V/Q mismatch

11.dehydration

12. edema

13.nausea, vomiting

14.allergic reaction

15.autonomic nervous system

HANDOUT 7-4: True or False

1. F

3. F

5. T

7. F

9. F

2. F

4. F

6. T

8. T

10.F

HANDOUT 7-5: Listing

1. Disruption of respiratory control, disruption of pressure, disruption of lung tissue
2. Altered mental status, inability or difficulty speaking, visual or hearing disturbance, inability or difficulty walking, paralysis, weakness, loss of sensation, pupil changes
3. Fluid loss, fluid distribution, edema
4. Loss of tone, permeability, hypertension, systemic vascular resistance

CHAPTER 8

Life Span Development

HANDOUT 8-1: Evaluating Content Mastery Student's Name

EVALUATION

CHAPTER 8 QUIZ

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

_____ 1. Patients younger than 1 year of age are called:

- A.** neonates. **C.** infants.
B. toddlers. **D.** preschool.

_____ 2. The soft spot on the top of the head where the skull bones have not fused yet is called:

- A.** foramen magnum. **C.** fontanel.
B. fossa. **D.** fibrinogen.

_____ 3. A startled infant who reaches out and grabs with her fingers and arms is exhibiting the:

- A.** Palmer reflex. **C.** Moro reflex.
B. rooting reflex. **D.** sucking reflex.

_____ 4. Children begin to be involved with peer groups when they reach:

- A.** toddler age. **C.** school age.
B. adolescence. **D.** preschool age.

_____ 5. The most obvious change to school age children is the loss of their:

- A. primary teeth. C. fontanel.
- B. wisdom teeth. D. innocence.

_____ 6. Body image is of tremendous concern to children who reach:

- A. adulthood. C. school age.
- B. adolescence. D. middle adult.

_____ 7. Children have a two- to three-year growth spurt during:

- A. adolescence. C. preschool age.
- B. school age. D. adulthood.

_____ 8. Cancer often develops in this stage of life:

- A. Middle adulthood C. Early adulthood
- B. Late adulthood D. Adolescence

_____ 9. Depression and suicide is alarmingly common for which age group:

- A. Middle adulthood C. Adolescence
- B. Preteenagers D. Senior citizens

_____ 10. The stage of life when all body systems are deteriorating is:

- A. middle adulthood. C. young adulthood.
- B. late adulthood. D. all of the above.

REINFORCEMENT

IN THE FIELD

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

A. You are dispatched to a local park for an accidental injury. Upon arrival, you find a semicircle of adolescent girls around a portable outdoor toilet. As you approach, an adult teacher informs you that your patient is a 14-year-old female who suffered an accidental laceration of the external genitalia sliding down a broken metal slide. The patient is inside the portable toilet and is visibly upset. Another teacher is trying to coax her out of the toilet.

1. What age-specific concerns are especially troubling to the patient?
2. How will you address those concerns?

B. You are called to the residence of an elderly couple. The wife tells you that her 88-year-old husband has been sick with nausea and vomiting for the past three days and can't get out of bed to go to the doctor's office. The wife states that he is usually very active and "sharp as a tack." You find the patient lying in bed.

1. What physiologic age-related changes will present a challenge when interviewing and obtaining a history from the patient?
2. How will you address those challenges?

CHAPTER 8 REVIEW

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

1. An infant's ability to grab your finger when you place it in his or her palm is called the _____.
2. The "soft spot" where the skull bones meet is called a _____.
3. _____ describes the infant's need for an orderly predictable environment.
4. _____ children receive less time with their parents, and they require more general supervision.
5. Children who reach adolescence often begin partaking in _____ behaviors.
6. A personal code of ethics is developed by children who reach _____.
7. The internal conflict between where a person has come and where he or she wants to go is referred to as a _____.
8. A person reaches peak physical condition by age _____ at which time their body begins the slowing process.
9. _____ is the time of highest levels of job stress.
10. _____ and _____ are found in alarmingly high numbers in adolescents.

NORMAL VITAL SIGNS OF DIFFERENT AGE GROUPS

Complete the following chart by filling the appropriate vital sign ranges for each age group.

Age	Heart Rate	Respiratory Rate	Systolic Blood Pressure
Infant			
Toddler			
Preschool			
School Age			
Adolescence			
Early Adult			

LIFESPAN DEVELOPMENT LISTING

Complete the following lists.

1. List the eight stages of a complete human lifespan.

2. List four common reflexes in infants.

3. List four challenges facing persons in late adulthood.

Chapter 8 Answer Key

HANDOUT 8-1: Chapter 8 Quiz

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

HANDOUT 8-2: In the Field

- A. 1.** The adolescent teenage girl will be very embarrassed and self-conscious. She will also be concerned about any scars, as adolescents are very body conscious. **2.** The EMT should do everything possible to minimize her embarrassment and protect her modesty. The EMT should request to the teacher that the other girls be moved away from her. The EMT can use a jacket or blanket to cover the patient's waist and exposed area to allow her to feel more comfortable about leaving the protection of the portable toilet. To further protect her privacy, the patient should be moved to the ambulance before being examined unless there is active bleeding or other life-threatening injury. If possible, a female EMT should take the lead in examining the patient. The EMT should take extra time to calm and reassure the patient.
- B. 1.** Physiologic changes that can affect the interview process include a loss of hearing, a loss

of vision, and mental changes, including dementia and Alzheimer's. **2.** If the EMT suspects the patient is hard of hearing, or is visually impaired, the EMT should make sure to speak clearly and not too fast—but not too slowly, either. Speaking very slowly can be perceived as patronizing to elderly patients. The EMT can also use a pen and paper when the patient is hard of hearing. The EMT must take care not to misjudge a person with physical impairments as being mentally impaired. This sometimes happens with elderly patients who are hard of hearing or visually impaired. The EMT must also allow more time for the patient to respond and to physically move as requested.

HANDOUT 8-3: Chapter 8 Review

1. Palmer reflex
2. fontanel
3. Trust versus mistrust
4. School age
5. self-destructive
6. adolescence
7. midlife crisis
8. 26
9. Early adulthood
10. Depression and suicide

HANDOUT 8-4: Normal Vital Signs of Different Age Groups

Age	Heart Rate	Respiratory Rate	Systolic Blood Pressure
Infant	140–160	30–40	70–90
Toddler	80–130	20–30	70–100
Preschool	80–120	20–30	80–110
School Age	70–110	20–30	80–120
Adolescence	55–105	12–20	80–120
Early Adult	70	16–20	120

HANDOUT 8-5: Lifespan Development Listing

1. Infant, Toddler, Preschool, School age, Adolescence, Early adult, Middle adult, Late adult

2. Moro reflex, Palmer reflex, Rooting reflex, Sucking reflex.

3. Living environment, Self-worth, Financial burdens, Death and dying