**CANADIAN RED CROSS**  
**EMERGENCY CARE**  
**WORKBOOK ANSWER KEY**

**Chapter 1: The Responder**

### Key Terms

**Abandonment:** Ending care of an ill or injured person without that person’s consent or without ensuring that someone with equal or greater training will continue that care.

**Confidentiality:** Protecting a person’s privacy by not revealing any personal information you learn about the person except to law enforcement personnel or more advanced medical care.

**Consent:** Permission to provide care, given by an ill or injured person to a responder.

**Duty to act:** A legal responsibility of some individuals to provide emergency care; done only in certain necessary circumstances.

**Emergency medical responder (EMR):** A responder who has successfully completed a recognized training program in the care and transportation of an ill or injured person.

**Emergency medical services (EMS) system:** A network of community resources and medical personnel that provides emergency care to people who are injured or suddenly ill.

**First responder:** A person trained in emergency care who may be called on to provide such care as a routine part of his or her job; often the first trained professional to respond to emergencies.

**Good Samaritan laws:** Laws that protect people who willingly give emergency care while acting in good faith, without negligence, and within the scope of their training.

**Interpersonal communication:** The process of speaking and listening to other people at an emergency scene; can be verbal or nonverbal.

**Medical control:** The process that allows a physician to provide direct care given to an ill or injured person by pre-hospital professionals.

**Negligence:** The failure to provide the level of care a person of similar training would provide, thereby causing injury or damage to another.

**Refusal of care:** The declining of care by a person.

**Standard of care:** The minimal standard and quality of care expected of an emergency care provider.

**Test Your Knowledge**


**Do You Know...**


**What Would You Do?**

1. No, you are not at work, therefore, you are acting as a public responder and do not have a duty to act; 2. **c**; 3. **Blood—wear personal protective equipment; Traffic—position the vehicle to protect yourself and the injured person, put reflectors or other such objects around the area to warn traffic, have the person move away from the traffic if possible**

**Chapter 2: The Emergency Scene**

### Key Terms

**Emergency move:** Moving a person before completing care; done only in certain necessary circumstances.

**Hazardous materials:** Substances that are harmful or toxic to the body; can be liquids, solids, or gases.
Automated external defibrillator (AED): An electronic device that shocks a person’s heart to stop certain dysrhythmias.
Cardiac arrest: A condition in which the heart has stopped functioning.
Cardiopulmonary resuscitation (CPR): A technique that combines rescue breathing and chest compressions for a person whose breathing and heart have stopped.
Cardiovascular disease: A disease of the heart and blood vessels; commonly known as heart disease.
Cholesterol: A fatty substance made by the body and found in certain foods.
Circulatory emergencies: Sudden illnesses or injuries involving the heart or blood vessels.
Congestive heart failure: A condition in which the heart loses its pumping ability, causing fluid build-up in the body; results in heart failure.
Coronary arteries: Blood vessels that supply the heart muscle with oxygen-rich blood.
Dysrhythmia: A disturbance in the conduction of electrical impulses within the heart.
Heart: A fist-sized muscular organ that pumps blood throughout the body.
Heart attack: A sudden illness involving the death of heart muscle tissue when it does not receive enough oxygen-rich blood; also called myocardial infarction (MI).
Nitroglycerin: A medication often prescribed to people diagnosed with angina.

Risk factors: Conditions or behaviours that increase the chance that a person will develop a disease.
Stroke: A disruption of blood flow to a part of the brain that causes permanent damage; also called a cerebrovascular accident (CVA).
Transient ischemic attack: A temporary disruption of blood flow to the brain; sometimes called a mini-stroke or TIA.
Ventricular fibrillation: A life-threatening dysrhythmia in which the heart muscle quivers rather than pumping blood.
Ventricular tachycardia: A life-threatening dysrhythmia in which the heart muscle contracts too quickly for an adequate pumping of blood to the body.

Do You Know…
1. OPQRST; 2. The person’s heart starts beating, another trained responder takes over, advanced medical care is now in place, the AED tells you to stop, you are too exhausted to continue, the scene becomes unsafe; 3. Facial droop: have person smile; arm weakness: have person close his eyes and hold arms out; speech abnormalities: have person say, “You can’t teach an old dog new tricks”; 4. TIA; 5. Answers may include the following: smoking, high-fat diet, high blood pressure, obesity, lack of routine exercise, high blood cholesterol, family history of cardiovascular disease, age, gender

Fill in the Blanks
1.

<table>
<thead>
<tr>
<th>CPR Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>1-Rescuer</strong></td>
</tr>
<tr>
<td><strong>Compressions</strong></td>
</tr>
<tr>
<td><strong>Ventilations</strong></td>
</tr>
<tr>
<td><strong>Depth of compressions</strong></td>
</tr>
<tr>
<td><strong>Compression rate</strong></td>
</tr>
<tr>
<td><strong>Hand/finger arrangement</strong></td>
</tr>
</tbody>
</table>
Do You Know…
1. Animals, wires, tripping hazards, possible low lighting, items balanced on ledge; 2. Have person put pets in another room, move or remove tripping hazards, turn on any lights, remove items from ledge; 3. To protect an injured person, to protect any responders, to warn oncoming traffic 4. Location of emergency, extent of emergency, apparent dangers, apparent number of ill or injured people, behaviour of people at the scene

Fill in the Blanks
1. a. Fire; b. Crime scene; c. Traffic; d. Hazardous materials; e. Multiple people injured

What Would You Do?
1. Gloves, helmet, protective eyewear, bright vest, appropriate footwear; 2. b; 3. c

Test Your Knowledge
1. c; 2. a; 3. c; 4. d; 5. c; 6. a; 7. b; 8. c

Chapter 3: Preventing Disease Transmission

Key Terms
AIDS (acquired immune deficiency syndrome): A condition caused by the human immunodeficiency virus (HIV).
Airborne transmission: The transmission of a disease by inhaling infected droplets that become airborne when an infected person coughs or sneezes.
Bacteria: One-celled microorganisms that may cause infections.
Blood-borne pathogens: Bacteria and viruses present in human blood and body fluids that can cause disease in humans.
Direct contact transmission: The transmission of a disease by touching an infected person’s body fluids.
Hepatitis: A viral infection of the liver.
Herpes: A viral infection that causes eruptions of the skin and mucous membranes.
HIV (human immunodeficiency virus): The virus that destroys the body’s ability to fight infection. The resultant state is referred to as AIDS.
Immune system: The body’s group of responses for fighting disease.
Immunization: A specific substance containing weakened or killed pathogens that is introduced into the body to build resistance to specific infection.
Indirect contact transmission: The transmission of a disease by touching a contaminated object.

Infection: A condition caused by disease-producing microorganisms, also called pathogens or germs, in the body.
Infectious disease: Disease capable of being transmitted from people, objects, animals, or insects.
Meningitis: An inflammation of the brain or spinal cord caused by a viral or bacterial infection.
Pathogen: A disease-causing agent; also called a microorganism or germ.
Tuberculosis (TB): A respiratory disease caused by a bacterium.
Vector transmission: The transmission of a disease by an animal or insect bite through exposure to blood or other body fluids.
Virus: A disease-causing agent, or pathogen, that requires another organism to live and reproduce.

Do You Know…
1. A pathogen present, enough of the pathogen, person is susceptible to the pathogen, there is a route of entry; 2. Answers may vary; 3. Exposure determination, identification of who will receive training, protective equipment, and vaccination, procedures for evaluating details of an exposure incident

What Would You Do?
1. Wear gloves, a mask, a gown, and protective eyewear; 2. b; 3. d

Test Your Knowledge
1. c; 2. b; 3. d; 4. c; 5. a; 6. d

Chapter 4: Human Body Systems

Key Terms
Body system: A group of organs and other structures working together to carry out specific functions.
Cell: The basic unit of all living tissue.
Circulatory system: A group of organs and other structures that carry oxygen-rich blood and other nutrients throughout the body and remove waste.
Digestive system: A group of organs and other structures that digest food and eliminate wastes.
Endocrine system: A group of organs and other structures that regulate and coordinate the activities of other systems by producing chemicals that influence the activity of tissues.
Genitourinary system: A group of organs and other structures that eliminate waste and enable reproduction.
Integumentary system: A group of organs and other structures that protect the body, retain fluids, and help prevent infection.
Musculoskeletal system: A group of tissues and other structures that support the body, protect internal organs, allow movement, store minerals, manufacture blood cells, and create heat.
Nervous system: A group of organs and other structures that regulate all body functions.
Organ: A collection of similar tissues acting together to perform specific body functions.
Respiratory system: A group of organs and other structures that bring air into the body and remove wastes through a process called breathing, or respiration.
Tissue: A collection of similar cells acting together to perform specific body functions.
Vital organs: Organs whose functions are essential to life, including the brain, heart, and lungs.

Fill in the Blanks
1.
2. A reference position of the body where a person is standing erect, looking forward, feet flat, arms at the sides, and palms facing forward.

3. What Would You Do?

Scenario 1
1. a. Proximal, b. Distal; 2. Superior; 3. c

Scenario 2
1. d; 2. Nausea and vomiting; 3. Respiratory and circulatory

Test Your Knowledge
1. b; 2. d; 3. a; 4. c; 5. a; 6. b; 7. d

Chapter 5: Assessment

Key Terms
Blood pressure (BP): The force exerted by blood against the blood vessel walls as it travels throughout the body.
Brachial artery: A large artery located in the upper arm.
Carotid arteries: Arteries located in the neck that supply blood to the head and neck.
Glasgow Coma Scale (GCS): A standardized system used to determine a person’s level of consciousness; often performed on people with suspected head injuries.
Head-tilt/chin-lift: A method of opening the airway when there is no suspected head or spine injury.
Jaw thrust: A method of opening the airway when there is a suspected head or spine injury.
Level of consciousness (LOC): A person’s state of awareness, ranging from being fully alert to unconscious.
Mechanism of injury (MOI): The event or forces that caused the person’s injury.
Primary survey: A check for conditions that are an immediate threat to a person’s life.
Respiratory rate: The number of times a person breathes per minute.
Secondary survey: A check for injuries or conditions that could become life-threatening if not cared for.
Signs: Any observable evidence of injury or illness, such as bleeding or an unusually pale skin colour.
Symptoms: Something the person tells you about his or her condition, such as “my chest hurts,” or “I feel sick to my stomach.”
Vital signs: Important information about the person’s condition, obtained by checking level of consciousness, breathing, pulse, skin characteristics, blood pressure, and pupils.

<table>
<thead>
<tr>
<th>Body System</th>
<th>Major Components</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Airway, lungs</td>
<td>Supplies body with oxygen through breathing</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>Bones, muscles, joints, ligaments, tendons</td>
<td>Provides structure to body; protects internal organs; allows movement; produces heat; manufactures blood components</td>
</tr>
<tr>
<td>Nervous</td>
<td>Brain, spinal cord, nerves</td>
<td>Regulates body; transmits messages to and from the brain</td>
</tr>
<tr>
<td>Digestive</td>
<td>Mouth, esophagus, stomach, intestines</td>
<td>Breaks down food and eliminates waste</td>
</tr>
<tr>
<td>Integumentary</td>
<td>Skin, hair, nails</td>
<td>Helps prevent infection; assists with temperature regulation; assists in production of vitamins</td>
</tr>
<tr>
<td>Circulatory</td>
<td>Heart, arteries, veins, capillaries, blood</td>
<td>Transports nutrients and oxygen to body cells; removes wastes</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Glands</td>
<td>Secretes hormones and other substances into blood and onto skin</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>Uterus and genitalia</td>
<td>Reproduction</td>
</tr>
<tr>
<td></td>
<td>Kidneys and bladder</td>
<td>Removes wastes from the circulatory system; regulates water balance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Cavity</th>
<th>Major Structures in the Cavity</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cranial</td>
<td>Brain</td>
</tr>
<tr>
<td>b. Spinal</td>
<td>Spinal cord</td>
</tr>
<tr>
<td>c. Thoracic</td>
<td>Heart, lungs</td>
</tr>
<tr>
<td>d. Abdominal</td>
<td>Liver, pancreas, intestines, stomach, kidneys, spleen</td>
</tr>
<tr>
<td>e. Pelvic</td>
<td>Bladder, rectum, reproductive organs</td>
</tr>
</tbody>
</table>
Do You Know…
1. Interview the person and bystanders; check vital signs; do a head-to-toe examination; 2. Location of emergency, phone number, name, what happened, number of people involved, condition of people, care being given; 3. Answers may include the following: unconsciousness, difficulty breathing, no breathing, no pulse or signs of circulation, severe bleeding, persistent pain or pressure in the chest or abdomen, vomiting or passing blood, poisoning, sudden illness requiring assistance, head injuries, neck injuries, or spine injuries, broken bones, imminent childbirth, an incident above the responder’s level of training or control; 4. Stethoscope, blood pressure cuff, pupil light, watch

Fill in the Blanks
1. 

<table>
<thead>
<tr>
<th>Scene Survey</th>
<th>Vital Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Survey</td>
<td>Blood pressure</td>
</tr>
<tr>
<td>Secondary Survey</td>
<td>Alert and oriented</td>
</tr>
<tr>
<td>Ongoing Survey</td>
<td>Equal and reactive to light</td>
</tr>
</tbody>
</table>

2. 

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>Normal vs. Not Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of consciousness: unresponsive</td>
<td>X</td>
</tr>
<tr>
<td>Breathing: 10, shallow, and regular</td>
<td>X</td>
</tr>
<tr>
<td>Pulse: 100, strong, and regular</td>
<td>✓</td>
</tr>
<tr>
<td>Skin: pale, cool, and clammy</td>
<td>X</td>
</tr>
<tr>
<td>Blood pressure: 120/60</td>
<td>✓</td>
</tr>
<tr>
<td>Pupils: equal and reactive to light</td>
<td>✓</td>
</tr>
</tbody>
</table>

3. 

**ABC**: Airway, Breathing, Circulation
**SAMPLE**: Signs and symptoms, Allergies, Medications, Past medical history, Last meal, Events before the incident
**AVPU**: Alert, Verbal, Painful, Unresponsive
**OPQRST**: Onset, Provoke, Quality, Region (or Radiate), Severity, Time
**APGAR**: Activity, Pulse, Grimace, Appearance, Respiration

4. 

<table>
<thead>
<tr>
<th>Observation</th>
<th>Vital Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/72</td>
<td>Blood pressure</td>
</tr>
<tr>
<td>Alert and oriented</td>
<td>Level of consciousness</td>
</tr>
<tr>
<td>Equal and reactive to light</td>
<td>Pupils</td>
</tr>
<tr>
<td>14, regular, and deep</td>
<td>Breathing</td>
</tr>
<tr>
<td>Dilated and fixed</td>
<td>Pupils</td>
</tr>
<tr>
<td>93, weak, and thready</td>
<td>Pulse</td>
</tr>
<tr>
<td>130/P</td>
<td>Blood pressure</td>
</tr>
<tr>
<td>Pale, cool, and clammy</td>
<td>Skin</td>
</tr>
<tr>
<td>GCS of 13</td>
<td>Level of consciousness</td>
</tr>
<tr>
<td>Red, hot, and dry</td>
<td>Skin</td>
</tr>
<tr>
<td>76, regular, and full</td>
<td>Pulse</td>
</tr>
<tr>
<td>Unresponsive</td>
<td>Level of consciousness</td>
</tr>
</tbody>
</table>

5. Answers will vary

What Would You Do?
1. Answers may vary depending on the participants. Answers may include the following: administer oxygen, check blood glucose level, transport the child, perform a head-to-toe examination, interview bystanders, check vital signs

2. 

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>Normal vs. Not Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of consciousness: reactive to verbal stimuli</td>
<td>X</td>
</tr>
<tr>
<td>Breathing: 14, strong, and regular</td>
<td>✓</td>
</tr>
<tr>
<td>Pulse: 100, strong, and regular</td>
<td>✓</td>
</tr>
<tr>
<td>Skin: warm and pink</td>
<td>✓</td>
</tr>
<tr>
<td>Blood pressure: 110/60</td>
<td>✓</td>
</tr>
<tr>
<td>Pupils: equal and reactive to light</td>
<td>✓</td>
</tr>
</tbody>
</table>
**Test Your Knowledge**
1. a; 2. c; 3. d; 4. d; 5. c; 6. b; 7. a; 8. d

### Chapter 6: Respiratory Emergencies

**Key Terms**

- Acute pulmonary edema: Fluid buildup in the lungs.
- Airway obstruction: A blockage of the airway that prevents air from reaching a person’s lungs.
- Anaphylaxis: A severe allergic reaction in which the air passages constrict and restrict the person’s breathing.
- Aspiration: Taking blood, vomit, saliva, or other foreign material into the lungs.
- Asthma: A condition that narrows the air passages and makes breathing difficult.
- Breathing emergency: An emergency in which breathing is so impaired that life can be threatened.
- Bronchitis: A disease causing excessive mucous secretions and inflammatory changes to the bronchi.
- Chronic obstructive pulmonary disease (COPD): A disease characterized by a loss of lung function.
- Cyanosis: A bluish colouration of the skin and mucous membranes due to the presence of deoxygenated blood in the vessels near the skin surface.
- Emphysema: A disease in which the alveoli lose their elasticity, become distended with trapped air, and stop working.
- Epinephrine: A naturally occurring hormone; can be used to counter the effects of anaphylaxis.
- Finger sweep: A technique used to remove foreign material from a person’s airway.
- Hyperventilation: Rapid breathing that upsets the body’s balance of oxygen and carbon dioxide.
- Metered-dose inhaler (MDI): A device prescribed to many people with asthma, containing a medication that counters the effects of an asthma attack.
- Pneumonia: A group of illnesses characterized by lung infection and fluid of pus-filled alveoli, resulting in inadequate oxygen in the blood.
- Pulmonary embolism: A blockage of a pulmonary artery by a clot or other foreign material.
- Rescue breathing: A technique of breathing for a non-breathing person.
- Respiratory arrest: A condition in which breathing has stopped.

**Do You Know…**
1. Mechanical and Anatomical; 2. Unusual breathing, gasping, wheezing, noisy breathing, skin is moist, skin is flushed, skin is pale, skin is ashen, or skin is bluish, shortness of breath, restlessness and anxiety, dizziness or lightheadedness, chest pain, tingling in hands and feet, use of accessory muscles to breathe, tripod positioning; 3. The person begins to breathe, you need to start CPR, another trained responder takes over, advanced medical care is now in place, you are too exhausted to continue, the scene becomes unsafe; 4. Jaw thrust

**Fill in the Blanks**
1. 

2. 

<table>
<thead>
<tr>
<th>Type of Emergency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choking</td>
<td>1. An obstruction in the airway</td>
</tr>
<tr>
<td>Asthma</td>
<td>2. A narrowing of the air passages</td>
</tr>
<tr>
<td>Emphysema</td>
<td>3. A disease in which carbon dioxide/oxygen exchange is not effective</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>4. Swelling of the air passages due to a reaction to an allergen</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>5. A disease causing mucous secretions to the bronchi</td>
</tr>
<tr>
<td>Hyperventilation</td>
<td>6. Breathing faster than normal</td>
</tr>
</tbody>
</table>

**What Would You Do?**
1. d; 2. a; 3. b; 4. False (adults should have one ventilation every 5-6 seconds)

**Test Your Knowledge**
1. b; 2. d; 3. a; 4. c; 5. a; 6. b; 7. c; 8. b

### Chapter 7: Airway and Ventilation

**Key Terms**

- Bag-valve-mask (BVM) resuscitator: A hand-held ventilation device consisting of a self-inflating bag, a one-way valve, and a face mask; can be used with or without supplemental oxygen.
Flowmeter: A device used to regulate in litres per minute (lpm) the amount of oxygen administered to a person.

Hypoxia: A decrease in oxygen in the blood.

Nasal cannula: A device used to administer oxygen through the nostrils to a breathing person.

Nasopharyngeal airway (NPA): A curved tube inserted into the nose to assist in maintaining an open airway.

Non-rebreather mask: A special mask combined with a reservoir bag, used to administer high-concentration oxygen to a breathing person through a mask covering both the nose and the mouth.

Oropharyngeal airway (OPA): A curved plastic tube inserted into the mouth and positioned at the back of the throat to keep the tongue from blocking the airway.

Oxygen cylinder: A steel or alloy cylinder that contains 100 percent oxygen under high pressure.

Oxygen delivery device: A device used to administer oxygen from an oxygen cylinder to a person.

Pressure regulator: A device attached to an oxygen cylinder that reduces the delivery pressure of oxygen to a safe level.

Resuscitation mask: A pliable, dome-shaped device that fits over the nose and mouth; used to administer oxygen and assist with rescue breathing.

Suctioning: The process of removing matter such as saliva, vomitus, or blood from a person’s mouth and throat by means of a mechanical or manual device.

Ventilation: The process of providing oxygen to the lungs through rescue breathing or by other means.

Ventilation devices: Devices used to help with ventilation.

Do You Know…

1. Do not operate around an open flame or sparks or in close proximity to an AED; do not stand oxygen tank upright unless secured; do not use grease, oil, or petroleum products to lubricate the regulator

Fill in the Blanks

1.  

3. Across: 2. oropharyngeal; 8. oxygen; 13. nasopharyngeal; 14. cannula; 15. non-rebreather; 17. petroleum

Down: 1. scissor; 3. resuscitation; 4. earlobe; 5. disease; 6. regulator; 7. cylinder; 9. higher; 10. minute; 11. valve; 12. catheter; 16. suction

What Would You Do?

1. a; 2. b; 3. c; 4. d; 5. c; 6. Turn the head to the side and attempt to clear vomit from the mouth/airway. If this does not work, use a portable suction device to clear the airway.

Test Your Knowledge

1. a; 2. d; 3. c; 4. d; 5. c; 6. b; 7. c; 8. a; 9. d; 10. b

Chapter 8: Circulatory Emergencies

Key Terms

Angina: Chest pain or pressure resulting when the heart needs more oxygen-rich blood than it is getting; pain or pressure usually lasts less than 10 minutes.

Asystole: The absence of electrical activity in the heart.