

Arizona Peace Officer Standards and Training

Basic Curriculum Lesson Plan

LESSON TITLE: FIRST AID - RESPIRATORY/CARDIAC EMERGENCIES 8.1

SUBJECT:	First Aid (Respiratory/Cardiac Emergencies)
AZ POST DESIGNATION:	8.1.5, 8.1.8 and 8.1.15
HOURS:	3.5
COURSE CONTENT:	Descriptions of the respiratory and cardiac systems. Describes treatment for obstructed airways for infants, children and adults. Also addressed is cardiac emergencies and treatment.
PERFORMANCE OBJECTIVES:	<p>Upon completion of this course of instruction, students using notes, handouts and other support materials as references, within the allotted time, will:</p> <ul style="list-style-type: none">8.1.5 Identify the following major body system:<ul style="list-style-type: none">A. Respiratory.8.1.8 Demonstrate (or) identify the proper techniques for CPR, including:<ul style="list-style-type: none">A. Adult – one (1) rescuer.B. Child – one (1) rescuer.C. Infant – one (1) rescuer.D. Foreign body obstruction:<ul style="list-style-type: none">1. Conscious.<ul style="list-style-type: none">a. Adult.b. Child.c. Infant.2. Unconscious.<ul style="list-style-type: none">a. Adult.b. Child.

c. Infant.

E. Mouth-to-mask CPR.

8.1.15 Given written, verbal and visual descriptions of persons suffering from the following medical conditions, identify signs and symptoms, appropriate treatment steps and appropriate management procedures for treatment:

A. Heart problems.

B. Respiratory emergencies.

DATE FIRST PREPARED: January 1998

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REVIEWED – REVISED :	David Kleinman	
REVIEWED – REVISED :	SME Committee	DATE: December 1998
REVIEWED – REVISED :	Officer Tim Taylor, SME Chairman	DATE: October 2003
REVIEWED – REVISED :	Officer Tim Taylor, SME Chairman	DATE: February 2004
REVIEWED – REVISED :	AZPOST Staff	DATE: January 2011
REVIEWED – REVISED :	First Aid SME Group	DATE: November 2017
REVIEWED – REVISED :	AZPOST (DocX)	DATE: March 2022
AZ POST – APPROVAL:	Don Yennie	DATE: November 2017
AZ POST – APPROVAL:	Lori Wait	DATE: March 2022

INSTRUCTOR REFERENCES:

CLASS LEVEL: Student

TRAINING AIDS:

INSTRUCTIONAL STRATEGY: Interactive lecture and class discussion.

SUCCESS CRITERIA: 70% or higher on a written, multiple-choice examination.

COMPUTER FILE NAME: Respiratory Cardiac Emergencies

DATE RELEASED TO THE SHARE FILE: May 27, 2022

I. INTRODUCTION

- A. Instructor – (self) introduction.
- B. Preview of performance objectives.

II. RESPIRATORY SYSTEM

P. O. 8.1.5A

- A. Provides for the oxygenation of blood and the elimination of carbon dioxide from the body.
- B. Components:
 - 1. Mouth and nose – this is where air is taken in and expelled.
 - 2. Larynx – voice box (easily damaged).
 - 3. Trachea – air tube (easily damaged).
 - 4. Lungs – where the exchange of gasses takes place.
 - 5. Diaphragm – the major muscle of respiration (located between the lungs and the stomach).
 - 6. Ribs – provide protection and support for the lungs.
- C. Infants and children.
 - 1. All structures are less developed and more easily damaged.
 - 2. All actions taken to help resuscitate must be done with the size of the infant or child taken into consideration.

III. RESPIRATORY EMERGENCIES

P. O. 8.1.15E

- A. Are respirations adequate? (< 8 OR > 24)
- B. Respiratory distress – care.
 - 1. Activate Emergency Medical Services (EMS).
 - 2. Maintain airway.
 - 3. Check for obstruction.
 - 4. Calm the patient.

5. Remove from the scene if problems are related to substances at the scene.
6. Put the patient in a position of comfort.
- C. Opening the airway: (Demonstration & practical exercise)
 1. Head tilt/chin lift.
 2. Modified jaw thrust.
- D. Rescue breathing. (Demonstration & practical exercise)
 1. Mask to mouth.
 - a. The preferred method of artificial respiration. **P. O. 8.1.8E**
 - b. Make a seal with the patient's face and mask (covering both the nose and mouth).
 - c. Press tightly to the patient's face.
 - i. Show one (1)-handed and two (2)-handed seals.
 - ii. Two (2)-handed is the preferred method.
 - d. Use a mask, but follow the same steps as for mouth to mouth.
 - e. If using an adult mask on a child, then turn the mask upside down.
 2. Mouth to mouth. (Demonstration & practical exercise)
 - a. Activate EMS.
 - b. Open the airway.
 - c. If obstructed, clear with the appropriate treatment. **P. O. 8.1.8D**
 - d. Make a seal with the rescuer's mouth to the victim's.
 - e. Pinch the patient's nose closed.
 - f. The rescuer exhales, inflating the victim's lungs. Approximate the amount of breath according to the size of the patient.
- E. **Mental exercise:**

1. At a motor vehicle collision (MVA) you find a woman behind the wheel of a heavily-damaged vehicle. She is unconscious and unresponsive. You do not see her breathing.
 - a. What do you do first? (Call EMS)
 - b. What is your first intervention? (Open the airway.)
 - c. What do you check for? (Spontaneous respirations.)
 - d. If none, how do you treat it? (Mask to mouth breathing.)
 - e. What technique do you use? (Jaw thrust.)

F. Obstructed airway.

P. O. 8.1.8D

1. Causes of airway obstruction.
 - a. The tongue is the most common problem.
 - i. Usually occurs during unconsciousness when the patient's head flexes forward.
 - ii. Treatment is moving the head into a neutral position.
 - b. Foreign objects are common in children.
 - c. Tissue damage when trauma has happened to the face or neck. Swelling occurs and constricts the airway.
 - d. Diseases, such as infection, may cause swelling. Anaphylaxis often causes extreme and rapid swelling. (Define "Anaphylaxis" for the students.)

P. O. 8.1.11.2C&F

2. Completely-obstructed airway.

- a. The patient is unable to talk.
- b. The patient is in obvious distress.
- c. Cyanosis – the bluish discoloration around mucous membranes, such as lips and eyelids that come from the lack of oxygen.
- d. The patient needs immediate intervention.

3. Partially-obstructed airway.

P. O. 8.1.8D

- a. The patient can often make sounds.
 - b. There is some air movement.
 - c. The patient's demeanor is less than frantic.
 - d. The rescuer's interventions are to calm and monitor the patient.
 - e. EMS should still respond.
4. Treatment for completely-obstructed airway. (Demonstration & practical exercise.)
- a. Ask the person, "Are you choking"?
 - b. Activate EMS.
 - c. Identify yourself and tell the patient that you will help.
 - d. Remember officer safety – gun side in or gun side out, depending on the environment.
 - e. Position yourself behind the patient. For a child or a small adult, kneel down.
- P. O. 8.1.8B**
- f. Locate the xiphoid process and umbilicus and place your fist midway between them with the thumb side in. Apply force upward and inward to the abdominal wall.
 - g. Force should be sufficient to lift up the patient.
 - h. Keep doing it until the object is expelled or the patient goes unconscious.
 - i. If the patient goes unconscious, gently lower the patient to the ground, be very careful of a head injury.
 - j. Open the patient's airway, check for spontaneous breathing and look for a foreign object in the mouth.
 - k. With adults, you can put fingers in the mouth to take the object out.
 - l. Attempt to ventilate.
 - m. If you cannot ventilate, then reposition the head and try again.
 - n. Begin CPR with chest compressions. (Define for students.)
 - o. After the first set of compressions, prior to delivering breaths, check for objects.

- p. If the object is seen, remove. Continue CPR checking for objects after every set of compressions.
- q. Once the airway is clear, check for spontaneous breathing and if none, then do rescue breathing and check for circulation.

5. Infant choking.

P. O. 8.1.8C

- a. Get the child from the parent. (Demonstration & practical exercise.)
- b. Tell the parent to call for EMS.
- c. Hold the infant on your forearm or put the infant on a table.
- d. If a conscious infant, check for breathing.
- e. If obstructed, hold the infant face down and provide support by firmly holding the jaw.

P. O. 8.1.8D

- i. Support the infant's body by laying the infant on your forearm.
- ii. Put the infant's crotch in the crook of your elbow.
- f. Put the infant's head lower than the trunk.
- g. Give five (5) forceful back blows with the heel of your hand between the infant's shoulder blades.
- h. After back blows, put your free arm on the infant's back, cradle between your arms and turn the infant face up while supporting the head. (Sometimes called making a "baby sandwich.")
- i. Give five (5) chest thrusts with your fingertips placed on the lower half of the sternum, approximately one (1) finger breadth below the nipple line.
- j. Repeat back blows and chest thrusts until the airway is clear or until the infant goes unconscious.
- k. For an unconscious infant, first open the airway. Tilt the infant's head so that the nose is pointing straight up.
- l. Look, listen and feel for a breath.
- m. Cover both the nose and mouth and attempt to ventilate.
- n. If the first breath does not go in, reposition the head and try again.

- o. If unsuccessful, begin CPR.
- p. After the first set of compressions, prior to delivering breaths, check for objects.
- q. If the object is seen, remove. Continue CPR checking for objects after every set of compressions.
- r. If at any time you see an object, you can pull it from the mouth.
P. O. 8.1.8D
- s. Once the airway is clear, check for spontaneous breathing and put it in the recovery position.
- t. If no breathing, begin rescue breathing and check for circulation. (One breath every two to three seconds.)

IV. HEART PROBLEMS

P. O. 8.1.15A

- A. Angina pectoris.
 - 1. Pain that occurs when the heart needs more oxygen than is available.
 - 2. Pain that comes on with exertion, but lasts less than two (2) minutes.
 - 3. Patients are usually aware of their condition and have medication(s) prescribed for it.
 - 4. The rescuer may only assist the patient in taking his/her medication.
 - 5. Care is the same as for a heart attack.
- B. Heart attack.
 - 1. Condition.
 - a. Arteries in the heart muscle become clogged and can no longer supply all parts of the heart with adequate oxygen.
 - b. Conditions, such as exertion, put a demand on the heart which in turn requires more oxygen.
 - c. Unable to meet the demand for oxygen, the part of the heart that is not properly supplied will die.
 - d. The heart may continue to pump even though part of it is dead.
 - 2. Signs:

- a. A chest discomfort that can be in the form of pain, tightness, fullness or squeezing.
 - i. Often, the pain will radiate from the chest to the neck, jaw, arms or back.
 - ii. The pain usually lasts longer than two (2) minutes. (Pain continues even at rest, unlike angina.)
 - b. Nausea/vomiting.
 - c. Shortness of breath.
 - d. Sweating.
 - e. Weakness.
 - f. Restlessness.
 - g. Lightheaded.
 - h. The patient says they think they are going to die.
 - i. Gray ashen pallor.
3. Emergency care.
- a. Activate EMS. ***INSTRUCTOR NOTE:*** *This would be a good place to familiarize officers with a portable AED, which are becoming more common.*
 - i. For adults only, you may leave the patient to make a call for EMS.
 - ii. Early defibrillation is definitive medicine for a heart attack.
 - b. Keep the patient at rest.
 - c. Place the patient in a position of comfort.
 - d. Loosen any restrictive clothing.
 - e. Cover the patient to prevent any chills.
 - f. Monitor vital signs.
 - g. Provide emotional support.

- h. Be prepared to do rescue breathing and closed-chest compressions.
- C. Closed-chest compressions. (Demonstration & practical exercise.)
- 1. If the heart is no longer functioning as a pump, then closed-chest compressions must be initiated to take over the cardiac function.
 - 2. Pulselessness **MUST** be verified. Check the carotid pulse since a radial pulse is not a reliable indication of cardiac activity.
 - 3. The patient must be on a hard surface.
 - 4. Kneel next to the patient with your knees at his/her hip and chest level.
 - 5. Locate the Center of the chest.
 - 6. With your shoulders over the midline of the patient, lock your elbows and use your body weight to compress the patient's chest at least 2 inches at least 100 times per minute.
 - 7. Release the chest compression between each repetition to allow blood flow back to the heart. **INSTRUCTOR NOTE:** *New methods in CPR are being researched, but have not been adopted for use at this time.*
- D. **Mental exercise:**
- 1. You are out at a public relations talk at a park. A woman runs up to you holding a small child. She tells you that he said he got stung by a bee and was just fine, but then started gasping.
 - a. What do you do first? (Call EMS.)
 - b. What is your first intervention? (Open the airway and check for respirations.)
 - c. If none, what do you do? (Give two breaths.)
 - d. What do you check next?
 - e. If none, what do you do? (Chest compressions.)

V. CONCLUSION

- A. Review of performance objectives.
- B. Final questions and answers.
- C. Instructor closing comment(s).

