

Principles of First Aid and Medical Emergencies

Course

*Principles of
Health Science*

Unit IXV

*First Aid and
CPR*

Essential Question

*Can first aid
really save
someone's life?*

TEKS

*130.202 (c) 7A,
10B*

Prior Student Learning

Adult CPR

Estimated time

1 hour

Rationale

Many emergency situations involve medical episodes instead of injury situations. Healthcare workers must prepare themselves to respond to all types of emergencies.

Objectives

Upon completion of this lesson, the student will be able to:

- Define first aid
- List the steps in administering an EpiPen (epinephrine pen) injection
- Predict appropriate responses to emergency situations
- Role play basic first aid skills

Engage

Ask the class how many of them know someone with diabetes. Anyone know someone who has suffered a stroke? Tell them that today they will learn how to recognize the signs of several medical emergencies and how to initially respond to the various situations.

Key Points

- I. First aid
 - a. The *immediate* care that you give someone with an illness or injury.
 - i. It is what you do before the emergency medical team arrives.
 - ii. Your actions can be the difference between life and death
- II. Responsibility
 - a. If you are working on a job where the company has trained you in first aid procedures, you will be expected to respond to emergencies that you have been trained to handle.
 - b. Away from work, you can decide whether to help or not – the choice is yours.
- III. Duty to Act
 - a. You have a duty to give the level of care that you will learn in this first aid course.
 - i. No one expects you to give the level of care given by a medical professional.
 - ii. You need to ask the victim if you can help them, and tell them you are trained in first aid.
 1. The victim can refuse.

2. If the victim is confused or cannot answer, assume that he or she would want you to help.

IV. Safety First

- a. Is the scene safe?
 - i. Don't become a victim yourself!
 - ii. Is there any danger for the victim?
 - iii. Are there other people around who can help?
 - iv. Where is the nearest telephone?
 - v. How many people and how many are injured or ill?
 - vi. What is your location?
- b. Personal Protective Equipment: PPE
 - i. Gloves – to protect your hands from blood and other body fluids
***Put contaminated gloves in biohazard bags if available, or double bag.
 - ii. Eye protection
 - iii. CPR mask
- c. To prevent illness, wash your hands after you give first aid.

V. Calling EMS

- a. Answer all their questions.
 - i. What is the problem?
 - ii. What is being done?
 - iii. How many victims?
- b. Always call if you don't know what to do in the emergency situation.
- c. Don't hang up until the EMS person hangs up.

VI. Assessment

- a. Check for responsiveness
 - i. "Hey, hey, are you okay?"
- b. Unresponsive: moans and groans or just does not respond
 - i. Call 911.
 - ii. First, look for life-threatening problems.
 1. Are they breathing?
 2. Open the airway (Head tilt-chin lift).
 - iii. Look for any obvious signs of injury, such as bleeding, broken bones, burns, or bites.
 - iv. Check for medical ID.
 - v. Are there items in or around the scene that would give you clues as to what might have happened to the victim?
***Nebulizer, O₂ tank, glucose monitor, fallen electrical wire, fire, empty bottles of alcohol, etc.

- VII. After the Emergency
 - a. Confidential information – don't share information except with medical professionals involved in the care of the victim.
 - b. Debrief/Counseling
 - c. Complete report form
 - i. If the emergency happens at a place of business, there may be documentation required.
 - ii. EMS or law enforcement officers may have questions for you about the emergency incident.

- VIII. Breathing Difficulties
 - a. What you might see:
 - i. Shortness of breath
 - ii. Restlessness, confusion, or anxiousness
 - iii. Slower or faster than normal breathing
 - iv. Moist, pale, or bluish-colored skin.
 - v. Noisy: wheezing, whistling, snoring
 - vi. Inability to speak
 - vii. Tripod position
 - viii. Trouble speaking
 - b. What you do
 - i. Call 911 NOW!
 - ii. Try to calm the person.
 - iii. Position of comfort
 - iv. Cool, quiet place
 - v. No physical exertion – not even walking. If you need to move the person, carry him or her.
 - vi. Assist him with his or her OWN prescribed medicine or inhaler.

- IX. Choking
 - a. What you might see
 - i. Universal choking sign
 - ii. Ineffective or quiet cough
 - iii. High-pitched wheeze
 - iv. Cannot talk
 - b. What you do
 - *** If the students have already had the lesson on FBAO, the teacher can just quickly review the steps on how to relieve the obstructing object.
 - i. Ask, "Are you choking"?
 - ii. If he or she says yes, say that you are going to try to help.
 - 1. Activate the Emergency Service system.
 - 2. Call 911!

- iii. If an adult or child is eating and suddenly coughs and cannot breathe, talk, or make any sounds, you should ask if he or she is choking. If he or she nods, say that you are going to help, and give an abdominal thrust.
 1. Stand firmly behind the victim and wrap your arms around him or her so that your hands are in front.
 2. Make a fist with one hand.
 3. Put the thumb side of your fist slightly above the navel (umbilicus) and well below the breastbone
 4. Grasp the fist with your other hand and give a quick upward thrust into the abdomen.
 5. Give thrusts until the object is forced out and the victim can breathe, cough, or talk, or until he or she stops responding.
- iv. If the choking victim is pregnant or very large, use chest thrusts instead of abdominal thrusts.
 1. Put your arms under the victim's armpits and your hands on the center of the victim's chest. Pull straight back and upward to give the chest thrust.
 2. If the victim stops responding, then yell for help, send someone to call 911 and get an AED.
 - a. Lower the victim to the ground, face up.
 - b. If you are alone with an adult victim, you call 911, then start the steps of CPR
 - c. If you are alone with a child victim, start CPR; give CPR for about 2 minutes (5 cycles) then stop to call 911.

*****Every time you open the airway to give breaths, open the victim's mouth wide and look for the object. If you see the object, remove it with your fingers. If you do not see an obstructing object, do not put your fingers in the victim's mouth.

 - d. Keep giving sets of 30 compressions and 2 breaths until an AED arrives, the victim starts to move, or trained help arrives and takes over

X. Allergic Reaction

- a. Symptoms of a Mild Allergic Reaction
 - i. Urticaria (Itching or hives)
 - ii. Stuffy nose, sneezing
 - iii. Itching around the eyes
 - iv. Flushed face
- b. What do you do?

- i. Keep the person calm
 - ii. Help the person take his own prescribed medication for an allergic reaction.
 - iii. Keep in mind that a mild reaction may become severe in a short amount of time.
- c. Symptoms of a Severe Allergic Reaction
 - i. Dizziness
 - ii. Swollen face or tongue
 - iii. Nausea, vomiting, or abdominal cramps
 - iv. Wheezing or trouble breathing
 - v. Increased heart rate
 - vi. Fainting
- d. What do you do?
 - i. Call 911.
 - 1. Even if the victim's symptoms are relieved after medication has been administered, the victim needs to go to the hospital.
 - 2. The victim will need to be monitored for several hours after a severe reaction.
 - 3. Relieved symptoms may return.
 - ii. Assist the person in taking his or her own prescribed allergic reaction medication.
 - iii. You may not administer medications that are not prescribed to the victim.
- e. How to use an EpiPen
 - *** Show the Power Point presentation on Allergic Reaction and EpiPen Administration.
 - i. Get the prescribed epinephrine pen.
 - ii. Take off the safety cap (Follow the instructions printed on the package.)
 - iii. Hold the EpiPen in your fist, black tip pointed down.
 - iv. Press the black tip of the pen hard against the side of the victim's thigh, about halfway between the hip and knee (directly to the skin or through clothing).
 - v. Hold the pen in place for 10 seconds. Some of the medication will remain in the pen after you use it.
 - vi. After pulling the pen away from the victim's leg, rub the injection spot for 30 seconds.
 - vii. Carefully put the EpiPen back into the plastic tube after use. You'll want to give it to the medical professionals when they arrive. (Be very careful not to touch the needle end of the EpiPen with any part of your body.)
 - viii. Write down the time of the injection so you can give this information to the medical professionals.
 - ix. Stay with the victim until trained help arrives and takes over.

XI. Heart Attack

a. What you might see:

**** Students should have already had the lesson on CPR, so this should take the form of a quick review.

- i. Chest discomfort
- ii. Pressure, squeezing, fullness, or pain (“heartburn”)
- iii. Lasts for 5 minutes or longer, OR goes away then returns
- iv. Other upper body discomfort
 1. One or both arms, back, neck, jaw, or stomach pain
 2. A person having a heart attack may have an uncomfortable feeling, such as pain or pressure, in the chest or other areas of the body.
- v. Shortness of breath
- vi. Cold sweat
- vii. Nausea
- viii. Lightheadedness

b. What you do:

- i. Have the victim sit or lie in a comfortable position.
- ii. Tell someone to call 911 and get the AED if available,
- iii. Be ready to start the steps of CPR and use the AED if the victim stops responding.

XII. Fainting

a. When it might occur:

- i. Stands without moving for a long period of time, especially if it is hot weather
- ii. Suddenly stands after squatting or bending down
- iii. Receives bad news

b. What you might see:

- i. Victim feels dizzy or light-headed
- ii. Victim feels weak

c. What you do:

- i. Help the victim lie flat on the floor, if the person is dizzy but still responds.
- ii. If the person faints and then starts to respond:
 1. Ask the victim to continue to lie flat on the floor until all dizziness goes away.
 2. If the victim remains dizzy, raise the victim’s legs just above the level of the heart and keep them elevated until the victim is no longer dizzy.
 3. If the victim fell, look for injuries caused by the fall.
 4. Once the victim is no longer dizzy, help the victim

to sit up very slowly, and briefly remain sitting, before slowly standing.

XIII. Diabetes and Low Blood Sugar

- a. Low blood sugar in a person with diabetes:
 - i. Has not eaten or has vomited
 - ii. Has not eaten enough food for the level of activity and amount of insulin already in the bloodstream
 - iii. Has injected too much insulin
- b. What you might see:
 - i. A change in behavior, such as confusion or irritability
 - ii. Sleepiness or even not responding
 - iii. Hunger, thirst, or weakness
 - iv. Sweating
 - v. Pale skin color
 - vi. A seizure
- c. What to do if the victim is responding and can sit up and swallow:
 - i. Give him or her something containing sugar to eat or drink:
 - 1. Fruit juice, packet of sugar or honey, or non-diet soda
 - 2. Do not give foods that contain little or no sugar such as diet soda, artificial sweetener, or chocolate
 - ii. Have the victim sit quietly or lie down.
 - iii. If the victim does not feel better within a few minutes after eating or drinking, call 911.
- d. What to do if victim is unable to sit up or swallow, or has stopped responding:
 - i. Call 911
 - ii. Do not give the victim anything to eat or drink. It may cause more harm.
 - iii. If no head, neck, or spine injury is suspected, roll the victim onto his or her side to help keep the airway open.
 - iv. If the victim is having a seizure, follow the steps listed for seizure interventions.
 - v. Be prepared to start the steps of CPR or AED use.

XIV. Stroke

- a. What you might see:
 - i. Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
 - ii. Sudden confusion and trouble speaking or understanding
 - iii. Sudden trouble seeing with one or both eyes

- iv. Sudden trouble walking, dizziness, and loss of balance or coordination
- v. Sudden severe headache with no known cause
- b. What you do:
 - i. Call 911.
 - ii. There are medicines the hospital can give to help prevent a stroke or diminish the effects of a stroke, but you must get the victim to the hospital ASAP when the symptoms first occur.
 - iii. If the victim becomes unresponsive, start the steps of CPR.

XV. Seizures

- a. Some Causes of Seizures
 - i. Head injury
 - ii. Low blood sugar
 - iii. Heat-related injury
 - iv. Poisons
- b. What you might see:
 - i. Loss of muscle control
 - ii. Fall to the floor or ground
 - iii. Jerking movements of the arms and legs, and sometimes other parts of the body
 - iv. Unresponsiveness
- c. What to do:
 - i. Protect the victim from injury.
 - 1. Move furniture or other objects out of the victim's way.
 - 2. Place a pad or towel under the victim's head.
 - ii. Note the time the seizure started.
 - 1. How long a seizure last is important for health providers to know.
 - 2. If the seizure last over 5 minutes, it is **critical** to call 911, even if the victim is a known epileptic.
 - iii. Activate the EMS system
 - iv. If you do not suspect a head, neck, or spine injury, roll the victim onto his or her side.
 - v. Stay with the victim until he or she starts responding.
 - 1. The victim may have some memory loss.
 - 2. Help reorient the victim by telling him what happened, where he is, and that you are there to help him.
 - vi. After the seizure, check to see if the victim is breathing; if the victim does not respond, start the steps of CPR.
- d. What **not** to do:
 - i. Do not hold the victim down.

- ii. Do not put anything in the victim's mouth.

XVI. Shock

a. Causes:

- i. Results when vital organs are deprived of blood and nourishment
- ii. Loss of blood (even if you cannot see it)
- iii. Severe heart attack
- iv. Bad allergic reaction

b. What you might see:

- i. Weak, rapid, or irregular pulse
- ii. Cold, clammy, pale, or bluish skin
- iii. Rapid, shallow breathing
- iv. Weakness, fainting, or dizziness
- v. Confusion, anxiety, or loss of consciousness

c. What to do

- i. Call 911.
- ii. Help the victim lie on his or her back.
- iii. If there are no leg injuries, elevate the feet to just above the level of the heart (12 inches).
- iv. If the victim begins to choke or vomit, turn the head to one side so that vomit will not block the airway.
- v. Loosen any tight clothing.
- vi. Use pressure to stop bleeding that you can see.
- vii. Cover the victim with a blanket to keep him or her warm.
- viii. DO NOT give the victim anything to eat or drink.

Activity

- I. Form eight groups. As a group, decide the proper actions in response to the scenario. Role play the situation explained in the scenario and the first aid actions agreed upon. See Scenario Packet.

Assessment

Written Test

Role Play Rubric

Materials

FBAO manikin

EpiPen trainers

Allergic Reaction Power Point

Scenario Packet

Scenario Key

Accommodations for Learning Differences

Students needing reinforcement will receive one-on-one help in practicing

the steps of EpiPen use.

For enrichment, the students may contact the school nurse to find out what the campus plan is for various medical emergencies. They will report their findings to the class.

National and State Education Standards

National Healthcare Foundation Standards and Accountability Criteria:
Foundation Standard 2

2.11 interpret verbal and nonverbal communication

2.14 Recognize the elements of communication using a sender-receiver model.

2.15 Apply speaking and active listening skills

2.22 Use medical abbreviations to communicate information

Foundation Standard 10: Technical Skills;

Healthcare professionals will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

Accountability Criteria

10.1 Technical Skills

10.12 Apply skills to obtain training or certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid. Additional technical skills may be included in a program of study based on career specialties.

TEKS

130.202 (c)(7)(A) explain the concept of teaming to provide quality health care; and

130.202 (c)(10)(B) relate industry safety standards such as standard precautions, fire prevention, safety practices, and appropriate actions to emergency situations.

Texas College and Career Readiness Standards

Science Standard,

I. Nature of Science C. Collaborative and safe working practices

Demonstrate skill in the safe use of a wide variety of apparatuses, equipment, techniques, and procedures.

Cross-Disciplinary Standards,

I. Key Cognitive Skills D. Academic Behavior: 1. Self monitor learning needs and seek assistance when needed, 3. Strive for accuracy and precision, 4.

Persevere to complete and master task. E. Work habits: 1. Work independently, 2. Work collaboratively

II. Foundation Skills A. 2. Use a variety of strategies to understand the meaning of new words. 4. Identify the key information and supporting details.

SCENARIO 1

You are at a local restaurant. You notice an obviously pregnant woman a few tables away coughing repeatedly. The coughs are becoming less forceful. Her husband starts to slap her on the back.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

SCENARIO 2

A 22-year-old woman was found unconscious in her apartment by her mother. The mother informs you that her daughter is an insulin-dependent diabetic who has been ill for two days and vomiting.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 3

A 16-year old female walks into a metal pole at the edge of the sidewalk. You see her grab her head and scream with pain. She falls to the ground, and her arms and legs start to jerk.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 4

It is a sunny, clear day and your PE teacher thought it would be a good time for your class to build some endurance. The assignment is to run 2 miles on the $\frac{1}{4}$ -mile track. Your best friend, Sharley Sue, usually keeps up while running laps. Today she is lagging far behind. You look back and see her stopped, bending over and supporting herself with her hands on her knees.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 5

You and Kelly always have lunch together. It is one of the things you look forward to each day. Today in the cafeteria they are serving a totally gross meal. You and Kelly talk Mark into sharing his sack lunch with you. The three of you split the sandwiches, share the chips, and there is even one cookie for each of you. Afterward, as the group is laughing and talking about a girl who wore an ugly pink dress to prom, Kelly says her arms are itching. Her face starts to turn red.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 6

It is family night. Your 2 uncles and 14 cousins join your small family at Martin's Mexican Restaurant. First there are the nachos, then chips and dip, enchiladas, fajitas, and finally the ice cream/cinnamon dessert. You thought the waitress was going to get back strain from bringing out all that food. After the meal is finally over, you cannot wait to get home, and away from the noise and your obnoxious uncles. Just as you all are heading toward the door, Uncle Bill says he feels a bit nauseous and lightheaded. You notice he is sweating profusely. He reaches in his pocket and pulls out and eats 3 Tums. While you are watching him and wondering just how he could fit anything else into his stomach, he passes out.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 7

Your 89-year-old, crazy grandmother is at your house for Thanksgiving dinner. Although your parents dining set seats 12, there is not enough room for everyone to sit at the dining room table. You're hoping you can sneak off to the living room to eat at the card tables your mother set up for the younger kids. Just as you have your plate filled high with delectable goodies and turn to walk out of the kitchen, your dad says "There is room at the table for you." To which you reply, "Gee, thanks". Just your luck – the place right next to crazy grandma is vacant and seems to have your name on it. You reluctantly take your seat and try to make the best of it. At least the food is good.

Sure enough, Grandma regales the group with one of her wild, surely half-true, stories. She does this while continuing to eat the turkey dressing and cranberry sauce. You notice that she seems to get confused about the details of her tale and starts having difficulty speaking. Some of the dressing, tinged with cranberry sauce, is coming out the left side of her mouth.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Scenario 8

Susie has had allergies all her life. Today she got stung by a bee and was beginning to panic. You help her get her EpiPen out of her purse. Thanks to the first aid training you had at school, you knew how to administer it, which was a good thing since Susie was shaking too badly to manage giving the shot to herself. She did begin to calm down within minutes of the EpiPen administration, but soon became very weak and dizzy. She gets confused as to what had just happened. Her skin feels old and clammy.

Assessment Steps/ What are you looking for? What do you ask?

What type of emergency is this?

First Aid Action:

Teacher Key

- Scenario 1: FBAO emergency
- Scenario 2: Low blood sugar/diabetic emergency
- Scenario 3: Seizure emergency
- Scenario 4: Breathing problems emergency
- Scenario 5: Allergic reaction emergency
- Scenario 6: Cardiac emergency
- Scenario 7: Stroke emergency
- Scenario 8: Shock emergency

Role Play Rubric

Student:_____ Class:_____

Title:_____ Other Group Members:_____

Date:_____

Scoring criteria	5 Excellent	4 Good	3 Needs Some Improvement	2 Needs Much Improvement	1 N/A
Relates to audience.					
Provides a fluent rendition of scenario.					
Role plays scenario with feeling and expression.					
Varies intonation.					
Presents characters appropriately.					
Gives the scenario its full range.					
Breaches are easily identified.					

Scale:

30-35 A Excellent

25-29 B Good

19-24 C Needs Some Improvement

13-18 D Needs Much Improvement

7-12 F Not Appropriate

TOTAL=

Comments