CHAPTER OVERVIEW

Cardiac arrests are a leading cause of death in the USA. There are 424,000 out-of-hospital cardiac arrests occurring annually in the United States. After students attend this course, they will understand how to recognize a cardiac emergency, how to begin hands only CPR, and when to call 911. Students will also consider ways to promote both school or community wide CPR training programs and the installation of AED's.

OBJECTIVES AND RESOURCES

Knowledge Objectives
After teaching this grade, students will be able to:

• Recognize someone who has collapsed and is in need of medical attention
• Understand Hands-Only CPR
• Know where to go to learn more about Hands-Only CPR
• Understand what an AED is and how it works

Skill Objectives
After teaching this grade, students will be able to perform the following skills;

• Recognize someone in Cardiac Arrest
• Call 911 and providing the appropriate information to dispatchers
• Begin Hands-Only CPR

Common Core
The following common core objectives are met with this program

• Health Intended Learning Objectives: Students will write for a purpose, using what they learn about heart health
  o Students will write for a purpose, using what they learn about heart health
  o Write to inform others about the importance of more people in the community knowing how to recognize a cardiac arrest and the simple steps to save a life
  o Write to persuade others to help start CPR programs, place AED’s in the community
  o Demonstrate understanding of the importance of more people who are able to recognize and act in a cardiac arrest emergency through discussion activities
Reading and Preparation

- Review “Be the Beat” (www.bethebeat.heart.org)
- Review the objectives for this grade
- Review supporting material as needed from the American Heart Association guidelines

Support Material

- LCD Projector, Overhead Projector, Smart Board, or Projection Screen
- CPR Manikins
- Writing Paper

Enhancements

- Additional support material is available at the teaching channel www.teachingchannel.org
- Utilize transitions when switching topics. You may want to ask teachers how this works and review the following http://www.teachingchannel.org/videos/managing-transitions
- American Heart Association Website www.heart.org

TEACHING TIPS AND ACTIVITIES

- It is imperative that the instructor believes in risk reduction efforts. The attitude of the instructor toward the material is critical in fostering an environment where the students can appreciate the significance of the material.
- Having supporting material and props, such as manikins, pictures, and videos will help permanent learning occur.
- Meet with the teacher prior to your presentation to gather information on the best ways to teach his/her class
  - Is there a student of the day that can be used to help?
  - Are there transitions that work well for them?
  - How does the teacher streamline questions and comments?
  - Are there any problem children in the class and how does the teacher work with them?
# PRESENTATION OVERVIEW

<table>
<thead>
<tr>
<th>Total time: 110 Minutes</th>
<th>Activity Type</th>
<th>Time</th>
<th>Content</th>
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<tr>
<td><strong>Welcome</strong></td>
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<tr>
<td>Introduction</td>
<td>Discussion</td>
<td>5 minutes</td>
<td>Meet Teacher / Introduction</td>
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<tr>
<td><strong>Lecture Day 1</strong></td>
<td></td>
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<tr>
<td>I. What are we here for?</td>
<td>Lecture/Discussion</td>
<td>2 minutes</td>
<td>Healthy Living / Hands Only CPR</td>
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<tr>
<td>II. Chain of Survival</td>
<td>Lecture/Discussion</td>
<td>10 minutes</td>
<td>Role of the Lay Person, Early Access, Early CPR, Early Defibrillation, Early ACLS, Early Advanced Care</td>
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<tr>
<td><strong>Practical Day 2</strong></td>
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</tr>
<tr>
<td>I. Hands Only CPR</td>
<td>Group Activity/Discussion</td>
<td>55 minutes</td>
<td>Chain of Survival/CPR</td>
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<tr>
<td>II. Thank You</td>
<td>Discussion</td>
<td>3 minutes</td>
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</tbody>
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WELCOME

Introduction

Time: 5 Minutes

Content: Meet teacher and Students

Activity Type: Discussion

Purpose

Use the introduction time to introduce yourself to the teacher and students. This time can be used to learn about the students in the class and the transitions the teacher uses to manage the students.

Instructor Directions

1. Introduce yourself and your crew to the teacher
2. Ask the teacher if there is anything in particular you should know about the students (see teaching tips above)
3. Once the teacher introduces you to the students, you can introduce yourself and crew
4. When possible wear your department uniform

LECTURE DAY 1

I. What are we here for?

Time: 2 Minutes

Activity Type: Lecture/Discussion

Purpose

To allow students an opportunity to explore the significance and concerns associated with Cardiac Emergencies and Healthy Living. Use this time to understand what the students already understand

Discussion Topics

1. Ask the students why they think you are there
2. Once given a minute you can explain they are the first link in someone’s survival in the event of a cardiac emergency

II. Chain of Survival

Time: 10 Minutes

Activity Type: Lecture/Discussion

Purpose

A strong chain of survival can improve chances of survival and recovery for victims of heart attacks, strokes, and other emergencies.

Discussion Topics

1. According to the American Heart Association (AHA)
   a. Every day nearly 1160 Americans suffer cardiac arrest at home, work, or in a public place and only 10.4% survive.
   b. CPR can more than double or triple a victim’s chance of survival
   c. Cardiac arrest can happen to anyone at any time. Many victims appear healthy with no known heart disease or other risk factors
   d. Unless CPR and defibrillation are provided within minutes of collapse, few attempts at resuscitation are successful
e. Even if CPR is performed, defibrillation with an AED is required to stop the abnormal rhythm and restore a normal heart rhythm
f. New technology has made AED’s simple and user friendly

2. Chain of Survival
   a. Ideally, someone must recognize an impending cardiac arrest or otherwise witness the cardiac arrest and activate the EMS system. Many people fail to recognize and activate the EMS system
   b. Bystander CPR must be provided immediately after the patient has collapsed. Properly performed CPR can keep the heart in a shockable ventricular fibrillation for 10-12 minutes longer
   c. Most adults who can be saved from cardiac arrest are in ventricular fibrillation or pulseless ventricular tachycardia. Early defibrillation is the link in the chain most likely to improve survival. Public access defibrillation may be the key to improving survival rates in out-of-hospital cardiac arrests. It is the greatest value when the other links in the chain do not fail.
   d. Early advanced cardiac life support by paramedics is another critical link in the chain of survival. In communities with survival rates of 20% or greater, a minimum of two of the rescuers are trained to the advanced level.

III. What is CPR

Time: 35 Minutes
Activity Type: Lecture/Discussion

Purpose
To provide the knowledge to students on what a cardiac arrest is and what to do when it is recognized. Most people who experience cardiac arrest at home, work, or in a public location die because they don’t receive immediate CPR from someone on the scene.

Discussion Topics
1. Heart Attack VS Sudden Cardiac Arrest
   a. Sudden cardiac arrest is an electrical problem when the heart suddenly stops beating normally and pumping blood to the brain and vital organs. In most cases, there are no warning signs or symptoms and someone will collapse suddenly. When sudden cardiac arrest occurs, the victim may collapse, doesn’t respond to gentle shaking, stops normal breathing, and after two rescue breaths, still isn’t breathing normally. Cardiac arrest strikes immediately and without warning. Victims can go from standing and talking to suddenly flat on the ground.
   b. A heart attack is a “plumbing” problem caused by a blockage in the heart’s blood vessels, causing the heart muscle to die. Symptoms include chest pain, pain in the left arm, between shoulder blades and or jaw, difficulty in breathing, dizziness, nausea and vomiting, and sweating. Usually there are more warning signs with a heart attack and people have time to get to a hospital while they are still conscious. When blood flow is severely reduced in coronary arteries (the blood vessels that bring blood to the heart muscle itself) it can cause a heart attack.
   c. Heart attacks, drowning, drug overdose, and any other problem that prevents someone from breathing can lead to cardiac arrest. In a cardiac arrest, seconds count. The person does not have adequate blood pumping to vital organs. Immediate CPR is vital to help keep the person alive until help or an AED arrives.
2. Have the students discuss AED’s and Hands-Only CPR
   a. What are the roles of AED’s?
   b. What is the role of a bystander?
   c. Have AED’s and Hands-Only CPR saved lives?
3. Work in groups to discuss various ways they can increase the awareness in public
   a. Educate the public in recognizing Cardiac Emergencies
   b. Training in Hands-Only CPR
   c. Knowing when to call 911
   d. Knowing where AED’s are located and how to use them
4. Discuss with students ways to promote school and community wide CPR training programs
5. Discuss with students programs to assist with installing AED’s in public buildings
PRACTICAL DAY 2

I. Hands Only CPR

Time: 55 Minutes
Content: Chain of Survival / CPR
Activity Type: Group Activity / Discussion

Purpose
To allow the students an opportunity to practice recognizing an emergency, calling 9-1-1, and to begin Hands-Only CPR. Knowing these important tasks can more than double a person’s chance of survival.

Instructor Directions
1. Hands-Only CPR is CPR without mouth-to-mouth breaths. It is recommended for use by people who see a teen or adult suddenly collapse in an “out of hospital” setting such as a school, at home, or a park.
2. Students will be divided into small groups
   a. Recognize a problem exists
   b. Practice trying to wake up victim (Shake and shout)
   c. Call 9-1-1 and begin Hands-Only CPR
3. Hands-Only CPR consists of two steps
   a. Call (or send someone to call) 9-1-1
   b. Push hard and fast in the center of the chest
4. When calling 911
   a. Stay on the phone until the dispatcher tells you to hang up
   b. Answer the questions from the dispatcher (Location, what is the emergency, how old the person is, etc)
   c. When answering the questions it will not delay the arrival of help
5. When conducting hands-only CPR
   a. Push hard and fast in center of chest
   b. The instructor will walk around to make sure hands are placed correctly and the chest compression rate is appropriate

II. Thank You

Time: 3 Minute
Content: Thank the students for their attention
Activity Type: Lecture

Purpose
This time is used to thank the students and teachers for their time and attention. Reassure the students that they are the first step in saving a life. Without recognizing an emergency exists, help will not be on the way.