

National ECC Training Memo

October 15, 2002

From: Jo Haag, RN, MSN
Director, ECC Training Programs

Subject: Pediatric AED Electrode Skills

Purpose:

As with all American Heart Association courses, instructors have the flexibility to add appropriate skills above and beyond the core curricula, to meet the specific needs of an audience. This module was developed to provide pediatric (ages 1-8 years) AED skills to meet the needs of schools and other environments where children are cared for. This module does not represent the modification of any core curricula within the Basic Life Support (BLS) discipline. Instead, it is designed to complement the *BLS for Healthcare Providers*, *Heartsaver CPR With AED* (must include pediatric CPR) or the *Heartsaver AED With Pediatric CPR* Courses.

The American Heart Association is reviewing its science position on the use of AEDs for children ages 1 to 8 as a *Class: Indeterminate* recommendation. The use of AEDs for children <8 years old is not prohibited, but at the time the Guidelines 2000 were written there was insufficient evidence (sensitivity, specificity, safety, and efficacy) for the American Heart Association to recommend their use. (Reference: American Heart Association ECC Guidelines 2000; I-64.)

The ultimate intent is to provide the training network and course participants with useful information that will prepare a rescuer with a reflexive skill set to save the life of a child.

Orientation Content

1. Conduct a standard *HS CPR With AED* (Adult-Pediatric), *HS AED With Pediatric CPR*, or *BLS for Healthcare Providers* course following the appropriate course curriculum before conducting the pediatric AED skills module.
2. Read the Statement of Purpose in the Agenda to the participants.
 - a. Instructor uses manufacturer's training pads and instructions, if available
 - b. Students practice application of pads to child manikin
 - c. Scenario practice using Child CPR scenario card and adding 1-shock sequence
 - d. No testing or documentation on AHA roster. School or facility in-service roster must be used. Recommend using the attached course outline to meet the needs of showing proof that learners have participated in a course that included instruction on pediatric AED skills.
3. Demonstrate the use of age appropriate pads.
4. Students will practice pad placement, pediatric CPR-AED skills, and equipment maintenance.

Basic Life Support Provider Course With Orientation to Pediatric AED Pad Feature

NOTE: The American Heart Association has not changed its science position on the use of AEDs on children ages 1 to 8 as a *Class: Indeterminate* recommendation. The use of AEDs on children <8 years old is not prohibited, but at this time there is insufficient evidence (sensitivity, specificity, safety, and efficacy) for the American Heart Association to recommend their use. (American Heart Association Guidelines 2000; I-64.)

Instructor conducts standard BLS provider course for HS CPR, HS AED, HCP, or any HS CPR-AED combination course
Complete all skill and written testing as required. The AHA course must be completed prior to orientation session.
Statement of purpose
<u>Instructors must make the following statement about the course:</u> “This segment of the course will provide an orientation to the pediatric AED pads your program has elected to use. This training will not include American Heart Association skills testing or a written examination on the use of these pads. All instructions for use are from the manufacturer of the AED. The use of pediatric AED pads at this facility neither been reviewed nor endorsed by the American Heart Association. Any skill and knowledge testing is done under auspices of the facility or its designee.”
Introduction to session
Review the Pediatric Chain of Survival. Review the FYI “Call First vs. Call Fast” box on page 74 of the <i>Heartsaver CPR</i> text, or page 4 of the <i>Heartsaver Pediatric CPR</i> text (from the <i>HS-AED With Pediatric CPR Course</i>).
Demonstration of age appropriate pads
Instructor demonstrates correct placement of pediatric pads using a child manikin. Instructor demonstrates a single shock scenario on a child manikin.
Student practice
Practice correct placement of pads. Practice child CPR and single shock scenario. Note: Practice sessions may not be combined with standard course skill practice.
Equipment maintenance
Instructor reviews equipment maintenance procedures, pad expiration dates, storage requirements, and other information as required by either the manufacturer or facility.

Pediatric AED Pad Skills Orientation

Learning Objectives

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

1. List and describe the details the 4 universal steps required to operate an AED.
2. Describe the proper procedure for attaching the pediatric AED electrode pads in the correct positions on the victim's chest.
3. Describe the proper actions to take when the AED indicates "no shock indicated" (or "no shock advised") message.
4. Choose the correct age-appropriate electrode pad when given a patient care scenario.
5. Describe and differentiate between the "Phone Fast" and "Phone First" methods when managing a pediatric patient.
6. Describe how the typical pediatric cardiac arrest differs from that of adult cardiac arrest.

Pediatric Cardiac Arrest Statistics

In 1999 a nationwide total of 923 deaths due to all diseases of the heart was reported in children and adolescents 1 to 19 years of age (299 deaths in children 1 to 9 years of age and 624 deaths in children 10 to 19 years of age). This number includes sudden cardiac arrest but also includes in-hospital deaths and a wide variety of cardiovascular deaths that were not sudden.

When children and young adults develop cardiac arrest, the mechanism and terminal cardiac rhythm usually differ from those observed in older adults. Most cardiac arrests in the young are *not* sudden, and most are not cardiac in origin. Instead most children who develop cardiac arrest develop respiratory problems and hypoxia *before* cardiac arrest, so that cardiac arrest is a secondary event. In one study of children and adolescents 1 to 19 years of age in cardiac arrest, only 7% of the young victims demonstrated a shockable rhythm. The vast majority of victims in this study demonstrated non-shockable rhythms.

Learning Checklist

Take a moment to review the key information you learned in this section:

- ✓ The universal steps required to operate an AED are:
 - POWER ON the AED first!
 - SELECT the appropriate age-specific electrode pads
 - ATTACH the AED to the patient's chest using the age appropriate electrode pads. For most children less than 8 years of age you are directed to place one pad on the child's chest between the nipples and the other pad on the child's back between the shoulder blades
 - ANALYZE the rhythm
 - SHOCK (if shock is indicated)

Training Memo 10/15/2002 Pediatric AED Electrode Skills

Learning Checklist cont'd

- ✓ When the AED indicates “no shock indicated” or “no shock advised”:
 - Check for signs of circulation
 - If signs of circulation are present, check for breathing. If breathing is inadequate, assist breathing. If breathing is adequate, place the patient in the recovery position, but leave the AED attached to the patient.
 - If signs of circulation are not present, resume CPR for 1 minute, then recheck for signs of circulation
 - If no signs of circulation, analyze the rhythm
 - After rhythm analysis, follow the “shock indicated” or “no shock indicated” steps

- ✓ “Phone Fast” method is the procedure used to treat most children less than 8 years of age. This method places greater emphasis on ensuring an open airway and providing rescue breaths than it does on the delivery of rapid defibrillation.
 - Pediatric cardiac arrest frequently results from progressive shock or a respiratory emergency rather than sudden collapse secondary to an arrhythmia.

- ✓ “Phone First” method is used when managing most adult patients and children who were born with heart defects.
 - This method emphasizes rapid defibrillation. If alone, call 911, then defibrillate the victim.

Children with special health care needs should be identified and information about their medical background gathered. Although no single tool to communicate this sort of information has been found to be superior, you may consider using a standardized emergency information form.

Training Memo 10/15/2002 Pediatric AED Electrode Skills

Pediatric AED Pad Skills Orientation

Purpose: Management of a pediatric cardiac arrest in a child victim requiring the use of pediatric AED electrodes.

Setup: Assign 1 participant as a CPR/AED rescuer, and 1 as a 911* caller and retriever of the AED (or observer). The remaining participants are assigned to the peer practice group.

Scenario	Scenario Assignments/Discussion	Assessment Findings	Expected Rescuer Actions
<p>Child CPR and pediatric pads with AED</p>	<ul style="list-style-type: none"> • You are a first grade teacher. You have been notified that you have a student who was recently diagnosed with a congenital heart defect. During class this student collapses at her desk. She is approximately 6 years old and was not a victim of any recent injury. A teacher's aide is in the classroom with you. <p>Extra Practice Scenarios</p> <ul style="list-style-type: none"> • You are a physician/nurse/respiratory therapist/nurse's aide working in a clinic. A preschooler in the waiting room suddenly becomes limp and collapses. • You are a first responder trained and equipped with an AED. You are called to a nearby park. When you arrive, a 5-year-old boy is lying next to a picnic table. He is cyanotic and unresponsive. Bystanders report he suddenly became limp and unresponsive. There are no injuries to the child. 	<ul style="list-style-type: none"> • Unresponsive • Not breathing • No signs of circulation • AED Arrives • "Shock advised" for first 3 shocks • After 3 shocks, "no shock indicated" Signs of circulation and breathing return 	<ul style="list-style-type: none"> • Check response (none) • Direct colleague to phone 911* and get the AED • CPR Rescuer: Open airway, assess breathing (none) • Provide rescue breaths that cause chest to rise • Check for signs of circulation (none) • Perform chest compressions • AED Rescuer: Begin use of AED (POWER ON, <u>Select pediatric pads</u>, begin to apply pads) • AED Rescuer: "Clear," analyze – "shock advised" – "clear," shock 3 times as prompted. Then "clear" and analyze: "no shock indicated" • Check for signs of circulation (present) • Check for adequate breathing (present)