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DEFINITION

Automated External Defibrillators (AEDs) are devices that shock the heart to restore a normal heartbeat after a life-threatening irregular rhythm (including sudden cardiac arrest).

Why AEDs in Schools?

For every minute defibrillation is delayed, survival decreases by 7 percent to 10 percent. If defibrillation is delayed by more than 12 minutes, the chances of survival (in adults) are less than 5 percent. Typically, a child in cardiac arrest would have to wait for experienced medical personnel to evaluate if the rhythm required a shock. What has been shown in adults is that the earlier they receive a shock, the greater the chances for survival.

What are the Chances the School will need a Defibrillator?

- The risk of cardiac arrest in high school athletes is .5 to 1.0 per 100,000 athletes.
- The risk in adult population 35 years of age and older is ~1/100 to 1/200.
- The leading cause of death in adults 35 to 40 is sudden cardiac arrest.
- The adult risk is 100 to 200 times the estimated risk in children and adolescents and those under 35.


LEGAL SUPPORT FOR THE PROGRAM

There are three levels of support for the use of AEDs in Duval County Schools.

1. Federal Cardiac Arrest Survival Act
2. Florida Good Samaritan Laws
3. Duval County School District Policy.

Federal Cardiac Arrest Survival Act

Federal Statute No. 768.1325 states, “...any person who uses or attempts to use an automated external defibrillator device on a victim of a perceived medical emergency, without objection of the victim of the perceived medical emergency, is immune from civil liability for any harm resulting from the use or attempted use of such device...”
Florida Good Samaritan Laws

401.2915 and 768.13 Florida Statutes protect:

- Even untrained users of AEDs from liability provided that they act in good faith.
- Even if a victim dies, AED users who have acted in good faith are protected.

Duval County School District Policy

The Duval County School Board will be asked to authorize the use of defibrillators in a perceived medical emergency as authorized by the provisions of 401.2915, F.S. Statutory authority is established through 1011.41, 1001.42, F.S. Laws implemented include 401.2915, 768.1325, 1001.42, F.S.

Selection of the units

The units that have been selected are safe for children as young as age 1 (Following the American Heart Association Guidelines). For ease of maintenance and logistical purposes all future units will be of the same manufacturer.

Installation of units

An appropriate site will be determined for location of the AED. DCPS maintenance personnel will mount the AED cabinet on the wall. Determining factors in the location of the site are as follows.

1. Central location
2. Accessibility at all times (no locked doors)
3. Secure
4. Located near a phone
5. Available to trained staff members (AED/CPR trained)

Note: Risk Management (AED Coordinator) must be contacted for permission to relocate the unit.

PROTOCOL FOR USE

Indications for AED use:

Upon arrival to the scene of a suspected cardiac arrest, the rescuer must begin steps of assessing the need for initiation of CPR with integration of an Automated External Defibrillator (AED). The use of
an AED is critical for the survival of the cardiac arrest victim. If the victim is assessed to be unresponsive with no pulse, the AED is to be used. Early defibrillation is critical for the following reasons.

- Ventricular Fibrillation is the frequent cardiac rhythm in cardiac arrest victims.
- Electrical defibrillation is the most effective method of treatment for VF.
- VF, if left untreated, can quickly convert to asystole within minutes (no electrical activity in the ventricle causes the heart to stop beating).
- If defibrillation is performed within 6-10 minutes of cardiac arrest, the adult or child victim can survive neurologically intact.

Steps for AED use:

1. Assess for unresponsiveness.
2. If victim is unresponsive, call 911 and retrieve AED.
3. Begin CPR. (Follow latest CPR Protocol)
4. Remove AED from the wall-mounted case. NOTE: The alarm will sound when the AED is removed. (Someone other than the responder should turn the alarm off).
5. Operate the AED.
   a. Open the lid of the AED and follow the voice prompts provided by the AED.
   b. Some skin preparation may be necessary for good pad adhesion and electrical contact. (chest hair, and cleaning, use the materials provided in the “ready kit”)
   c. Apply the pads to the victim and allow the AED to determine necessity for shock.
   d. Follow the voice prompts.
      i. If SHOCK is indicated, the AED will instruct the rescuer to push the SHOCK button. NOTE: some units are fully automatic the AED will administer a shock on its own if it is indicated.
      ii. If no SHOCK is advised and the victim is not breathing, administer CPR in accordance with your training.
Special Situations in AED use:

1. AED adult electrode pads are used for victims 8 years and older weighing more than 25Kg (approximately 55 pounds)

2. AED pediatric electrode pads may be used on children or infants up to 8 years or up to 25Kg (55 pounds). If the child appears older or larger, use the adult defibrillation electrodes.

3. If the victim is in water or covered in water, they must be moved from the source of water or the water dried from the bare chest before the AED pads are placed.

4. If the victim has an implanted pacemaker (noted by a raised lump about the size of a deck of cards usually on the left side of the upper chest or abdomen), place the AED pad at least 1 inch to the side of the implanted device.

5. AED pads should not be placed over transdermal medication patches. Remove the medication patch before placing the AED pad to the victim’s chest.

Equipment Care:

1. The AED has pads connected to the unit. Spare pads are stored in the back pocket of the carrying case.

2. Once the pads are used, they must be replaced by a new set. Additional replacement pads can be ordered through Risk Management.

3. The AED should not leave the Duval County Schools location where it is assigned

4. If the AED unit has to be moved to facilitate a rescue, immediately notify Risk Management of the incident and where the unit has been taken.

5. Additional information on maintenance may be found in the AED Guidelines Document.

DESCRIPTION OF UNIT

- A shock cannot be administered to an individual that does not have an irregular heartbeat.

- The operating manual can be found on the CD Rom that is stored in the back pocket of the carrying case. The name of the CD Rom is “Quick Start Tool Kit.” The manual contains detailed information on safety, instructions for use, data management,
maintenance, troubleshooting, and technical data. The CD Rom also includes a 5 minute demonstration video.

- Instructive prompts guide the rescuer through each step of the rescue through intuitive voice commands and descriptive text display.

- The unit monitors patient progress and will administer more than one shock, if necessary.

- The unit is safe to use with pacemakers. The unit detects pacemaker pulses for both unipolar and bipolar pacemakers.

- The device actually measures a patient’s impedance and makes a decision as to the strength of the shock. For example, and 11-year-old would receive 176 joules. The pediatric pads will reduce defibrillation energy to a patient to 50 joules. The variable emergency range is 105 – 360 joules.

- Software inside the unit records all relevant data related to each use.

- There are two sets of pads in each unit, both are for adult use. Pediatric pads will be placed with appropriate units having contact with young children. The pediatric pads are used for ages 1-8 and are clearly marked on the unopened container.

- CPR supplies are included in the “ready kit” that is attached to the case.

**MAINTENANCE**

- A CD Rom provided inside the case of the unit covers basic maintenance issues such as: installing the battery, pads, the Rescue Ready indicator, Audible Maintenance Indicator and After a Rescue Attempt Directions.

- Audible Alarm: An audible alarm sounds when the wall mounted cabinet door is opened or when the unit is removed from hanger inside the cabinet (newer model cabinets.

  1. This function should be checked periodically

  2. If the alarm does not sound or is weak install a new 9 volt battery

- Keys: Maintain the keys in a safe secure location preferably near the cabinet. These keys function only to turn the Audible Alarm off not to lock the cabinet.
1. Never delay the rescue attempt to disarm the Audible Alarm.

2. Never disarm the alarm by removing the battery

   - Pads (ELECTRODES): Pads have a 2 year life. The expiration date can be found next to the hour glass symbol on the package. The pads are to be replaced after use and if the package has been opened (tampered with).

   - Ready Rescue Indicator: All AEDs should be checked on a daily basis to ensure the Ready Rescue Indicator (next to the AED handle) is GREEN. If for any reason it is not GREEN, or any other maintenance issues arise call Risk Management at 390-2360.

**Awareness**

Every adult and student on campus should be aware of the location of the AED unit(s) and their intended use. The units are stored in highly visible white wall hung cabinets in easily accessible locations. A CD Rom inside the AED carrying case provides a video demonstration of how to perform a rescue (choose training video and click on the “start video icon) **The video is 5 minutes long.** The school “site safety committee” is encouraged to use this source for faculty and student training as they see fit.

**PRECAUTIONS/Critical Concepts**

- Wet Conditions – Make sure the patient and environment are dry.

- Metal Surfaces – Make sure the patient is not touching any metal surface.

- Combustible materials or hazardous (explosive) environment – Remove the patient, if possible, from an area that presents a hazard.

- Do not touch the patient while the AED is assessing, charging, or shocking the patient. (voice prompts on the machine repeat this warning).

- If the patient has an internal pacemaker/defibrillator, position the pad one hand’s width (approximately 5 inches) from the pacemaker/defibrillator site.

- If the patient has trans dermal medication (nitroglycerin) patch, position the pads away from the patch.

- Never defibrillate while moving the patient.
## Contact Information

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| To order additional units or accessories | Cardiac Science  
1900 Main Street, Suite 700  
Irvine, California 92614  
1-800-965-1400  
FAX: 1-866-445-5711  
Customer Service: 1-800-991-5465  
http://www.cardiacscience.com |