

Automated External Defibrillators in the School Setting Guidelines for Implementing AED's

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Sudden Cardiac Death is an unexpected death caused by an abrupt loss of heart function. According to the American Heart Association, at least 250,000 Americans die of Sudden Cardiac Arrest (SCA) each year. SCA is not discriminatory; it affects people of all ages and states of physical fitness. As the name suggests, SCA strikes suddenly and often without warning.

Sudden Cardiac Arrest is not a heart attack but occurs when the electrical system of the heart malfunctions. This malfunction often results in arrhythmias (irregular heart beats). The most common arrhythmia causing SCA is ventricular fibrillation. Ventricular fibrillation occurs when the heart's ventricles (lower chambers) contract rapidly and ineffectively. When this occurs, the heart is unable to pump blood to the body. If this is not treated immediately, death will result within a few minutes. The treatment for ventricular fibrillation is defibrillation.

Defibrillation works by delivering a therapeutic dose of electrical current to the heart, which depolarizes the heart muscle stopping the arrhythmia, and allows a coordinated heart rhythm to return. Defibrillation can be administered by an Automated External Defibrillator (AED). An AED is computerized defibrillator that can check a person's pulse and heart rhythm, analyze the heart rhythm and advise the care giver if a "shock" is needed. All AED's have voice prompts to help guide the care giver and some have lights, text message and pictures as additional assistance.

AED's are designed to administer a shock if ventricular fibrillation is detected, otherwise a shock will not be advised. In Texas, AED's can be used by anyone who has taken a nationally recognized course in CPR/AED.

In October 2006, the University Interscholastic League (UIL) voted to require AED's in all 1300 of its member High Schools. Lt. Governor David Dewhurst has taken the implementation of AED's in Texas Public Schools a step further by announcing a major initiative calling for AED's in all 8,000 Texas Public Schools. A University Interscholastic League (UIL) survey revealed that approximately 600 of its 1300 member High Schools had AED's on campus. The UIL's rule goes into effect as of August 1, 2007.

Once a school obtains an AED, the school will be responsible for the implementation, coordination and maintenance of the AED. The Texas Health and Safety Code Chapter 779 pertains to acquisition and implementation of AED's. The health code requires a licensed practitioner write a prescription for the AED and provides immunity from civil liability for the physician who writes the

order for the AED and the person(s) who provide approved AED training accordance with in requirements of the health code. Each campus that acquires an AED will be responsible for ensuring that school personnel are properly trained, notifying the local EMS of AED acquisition, and complying with AED maintenance per the manufacturer's recommendations.

This manual is intended to support the professional school nurse in the leadership role for the implementation of the UIL's new ruling and Lt. Governor Dewhurst's initiative.

Summary of Health and Safety Code Chapter 779. Automated External Defibrillators

AED's

- must be approved by the United States Food and Drug Administration
- must be capable of recognizing the presence or absence of ventricular fibrillation or rapid ventricular tachycardia
- must be capable of determining, without operator interpretation, whether defibrillation should be performed
- once determining fibrillation should be performed, automatically charges and requests delivery of the “shock” to the individual’s heart

AED Acquisition

- a physician must write a prescription for the acquisition of the AED
- a physician must be involved in the training to ensure compliance with the requirements of Health and Safety code

Local EMS

- upon receipt of an AED, local EMS must be notified of the existence, location and type of AED
- EMS must be promptly notified when an AED has been used in an emergency situation

Training

- each user of the AED must receive training in CPR and use of an AED
- the training must be in accordance the American Heart Association, American Red Cross or another nationally recognized association

Maintenance

- AED must be maintained per manufacturers guidelines
- AED must be tested per manufacturers guidelines

Civil Liability

- A person who in good faith administers emergency care, including the use of an AED, at the scene of an emergency is not liable in civil damages unless the act is willfully wantonly negligent.
- A person or entity that acquires an AED is not liable for civil damages for the prescription for the AED, the AED training, or acquisition of the AED unless the entity’s conduct is willfully or wantonly negligent.
- Any entity that acquires an AED and negligently fails to comply with the requirements of Health and Safety Code, Chapter 779 is liable for civil damages.



Richardson Independent School District

Sample

AED/CPR Protocol

I. Scope

This document describes the protocol and procedures of Richardson ISD relating to its early defibrillation program utilizing employees who serve as trained responders in CPR and defibrillation therapy in the event of a medical emergency.

II. Purpose

Richardson ISD has established a protocol for the use of the AED and to assist in the care of the Sudden Cardiac Arrest (SCA) victim.

III. Training Requirements

Any employee that is expected to provide emergency care to a patient of a SCA will be trained in CPR and AED use. This training will conform to the American Heart Association standards or another nationally recognized training organization and will be taught by authorized AED instructors. AED-trained employees will renew CPR and AED training every two years.

Designated AED/CPR Responders

The following employees will be trained in the use of CPR/AED. It is the goal to have at least one trained responder available during school hours. Suggested responders include principal or assistant principal, nurse, office personnel, counselors, librarian, all coaches and/or trainers, orchestra/band directors, drill team directors, and cheerleading sponsors. List the names in the order they should be called in an emergency.

Name	Position	Phone
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

Location of AEDs

Suggested locations include the trainer's office and school office or a central location.

1. _____
2. _____
3. _____

Indications for AED Use

The AED unit should be used only on a patient who is:

1. Unconscious
2. Not breathing
3. Has no signs of circulation
4. Over 1 year of age

School Hours Procedure

Assess scene safety

1. Is the scene free of hazards?
2. Rescuer makes sure there are no hazards. Some examples are:
 - a) Electrical Dangers (downed power lines, electrical cords, etc.)
 - b) Chemical Dangers (hazardous gases, liquids or solids, smoke)
 - c) Harmful People (anyone that could potentially harm you)
 - d) Traffic (make sure you are not in the path of traffic)
 - e) Fire, flammable gases such as medical oxygen, cooking gas, etc.
 - f) Wet surfaces (dry surface desirable for AED use)
 - g) Metal surfaces (AED should not be used on a metal surface)

Sample

Assess the emergency and determine if the patient is:

Unconscious
Not breathing
Has no signs of circulation
Over 1 year of age

If the above criteria are present:

Call the office to activate the system

Office staff will:

1. Call 911.¹
2. Notify the Designated Responders to retrieve the AED and report to the scene.

Begin CPR until a Designated Responder arrives with AED

1. Follow the appropriate CPR protocol of the American Heart Association or the American Red Cross adult/child CPR/AED procedures.
2. Open airway (A)
3. Check for breathing (B) – if not breathing, or if breathing is ineffective, give two slow breaths. Observe universal precautions using gloves and ventilation mask, if available. If breathing, place in the recovery position and monitor breathing closely.
4. Check for signs of circulation such as pulse and coughing, or movement (C)
5. If no signs of circulation, a designated responder will apply AED immediately. If AED is not immediately available, begin chest compressions and breathing (CPR) until AED arrives.

When Designated Responder arrives with AED, press ON/OFF button to release lid (this turns AED on). Follow verbal prompts given by AED.

Apply electrode pads

Note: **For a child (1 to 8 years of age):** Pediatric Electrode Pads must be used

For an adult (over 8 years of age): Adult Electrode Pads must be used

1. To use the adult electrode pads, pull red handle (the adult pads should be the standard electrode pads pre-connected in the unit).
2. If the child electrode pads are required, use the child electrode pads that are stored in the black case attached beneath the AED unit. Disconnect the adult connector and insert the pink connector attached to the child pads connector.
3. Follow voice prompts to apply electrode pads.

¹ The caller should give the 911 operator the following information: type of emergency, CPR/AED initiated, address of facility, location of emergency, and the phone number they are calling from. Be prepared to give further information requested by the 911 operator and DO NOT HANG UP UNTIL DIRECTED BY 911.

4. The two red blinking pad indicators lights on top of the AED machine will turn green once the pads have been applied appropriately (if light never turns green, check that the pads are plugged into machine).
5. Apply the AED electrodes with caution if a victim has:
 - a. Nitroglycerin patch on the chest (remove patch carefully and then apply AED)
 - b. Internal pacemaker (pacemaker may interfere with rhythm analysis; do not place electrodes directly over pacemaker)
 - c. Excessive chest hair (may need to shave chest hair if unable to place the pads securely)
 - d. Wet skin (if victim sweating profusely or wet for some other reason, dry chest before applying pads)

Sample

Stand clear of victim and refrain from using cell phones or portable radios while machine evaluates heart rhythm

H. While patient is receiving care, office personnel should:

1. Call the parent/guardian/family of the patient.
2. Call the Student Services Emergency Response Line: 469-593-0911
3. **Call the Directors of Health Services (469-593-7445) and Central Athletics (469-593-0120). Explain the emergency, what care is planned and what emergency responders have been called.**

Shock Advised

- A. Clear area, making sure no one is touching the victim.
- B. Push SHOCK button when prompted.
- C. Device will analyze the victim's heart rhythm and advise shock up to three times.
- D. After three shocks device will prompt to check pulse (or for breathing and movement) and if absent, start CPR.
- E. If pulse or signs of circulation such as normal breathing and movement are absent, perform CPR for one minute.
- F. Device will countdown one minute of CPR and will automatically evaluate victim's heart rhythm when CPR time is over.

No Shock Advised

- A. Device will prompt to check pulse (or breathing and movement) and if absent, start CPR.
- B. If pulse or signs of circulation such as normal breathing and movement are absent, perform CPR for one minute.
- C. If pulse or signs of circulation are present, check for normal breathing.
- D. If victim is not breathing normally, give rescue breaths according to training.
- E. AED will automatically evaluate victim's heart rhythm after one minute.

Continued Care

- A. If victim regains signs of circulation, such as breathing and movement, place them on their side, in the recovery position, and monitor their breathing closely.
- B. The AED continues to evaluate cycles of heart rhythms, shocks (if advised) and CPR is performed if required until professional help arrives.
- C. Victim must be transported to hospital.
- D. Leave AED attached to victim until EMS arrives and disconnects AED.
- E. Turn over care of the victim to EMS personnel. Once they have arrived, follow the directions of EMS personnel for further actions.

After School Hours Procedure

A. Athletic Director/athletic trainer covered events:

1. Determine unresponsiveness of victim
2. Activate system:
 - a. Call 911
 - b. Alert athletic staff of emergency by sending a runner to inform the athletic director or trainer.

3. If present, the athletic director/trainer, or a designee, will retrieve the AED.
4. If a CPR and/or AED trained person is available, CPR and AED procedures should be initiated according to American Heart Association/American Red Cross protocol until EMS arrives.
5. Follow procedure outlined above. See sections VII (D) through X (E).
6. Following event call the Student Services Emergency Response Line (469-593-0911) and leave a message regarding the emergency.

Sample

B. Other school events (if AED is available)

1. Determine unresponsiveness of victim
2. Activate system:
 - a. Call 911
 - b. Alert the supervising staff member of the emergency.
3. If present, the supervising staff member, or a designee, will retrieve the AED.
4. If a CPR and/or AED trained person is available, CPR and AED procedures should be initiated according to American Heart Association/American Red Cross protocol until EMS arrives.
5. Follow procedure outlined above. See sections VII (D) through X (E).
6. Following event call the Student Services Emergency Response Line (469-593-0911) and leave a message regarding the emergency.

After Use

- A. The designated responder will document the event using the RISD AED Incident Report and will forward a copy of the completed form to the Oversight Physician and the Program Coordinators.
- B. A copy of the AED use information (if available) will be sent within 48 hours (weekdays) of the emergency to the Oversight Physician and the Program Coordinators.
- C. The AED will be wiped clean after each use.
- D. The CHARGE PAK and all electrode pads (2 adult and 1 child) must be replaced to restore the unit. The new adult connector and pads are to be connected to the AED unit, ready to be used.
- E. Contents of attached resuscitation kit must be replaced if used.
- F. Supervisory staff will conduct post-event debriefing.

Physician Oversight

Physician Oversight for Richardson ISD will be provided by Dr. George Markus. Physician Oversight will include the following items:

- A. Review and approval of policies and procedures defining the standards of patient care and utilization of the AED.
- B. Review of each AED incident report.
- C. Provide prescription for AED.

Program Coordination

Program Coordination for Richardson ISD will be provided by the Athletic Director and the Health Services Director. Program Coordination will include the following items:

- A. Selection of one AED emergency response team leader per campus.
- B. Coordination of training for Designated Responders.
- C. Coordinating equipment and accessory maintenance.
- D. Revision of guidelines as required.
- E. Monitoring the effectiveness of this system.
- F. Communication with the medical director on issues related to medical emergency response program including post event reviews.

Quality Assurance

- A. A RISD AED Incident Report should be completed after each use of an AED.
- B. Each RISD AED Incident Report is to be reviewed by the Oversight Physician and Program Coordinators.
- C. Appropriate maintenance will be performed on each AED unit (as indicated below).

AED Maintenance

- A. The AED will perform an automatic self-diagnostic test that includes a check of battery strength and an evaluation of the internal components.
- B. A building staff member, assigned by the building principal, will perform a daily AED check following the procedure checklist. The procedure checklist will be initialed at the completion of the daily check. The procedure checklist will be posted with the AED.
- C. If the OK icon is NOT present on the readiness display, contact an AED Program Coordinator or designee immediately.
 - 1. If the red battery icon is visible, the battery needs to be replaced. You may continue to use the AED if needed.
 - 2. If the attention icon (exclamation point inside triangle) is visible, the AED needs service. You may attempt to use the AED if needed.
 - 3. If the wrench icon appears, the AED is not usable. Continue to provide CPR until another AED is brought to the victim or EMS arrives to take over care.
- D. The CHARGE PAK and Adult and Child electrode pads are to be replaced every two years as indicated on the expiration date.
- E. The campus AED emergency response team leader shall keep the designated responders informed of any changes in AED availability due to maintenance or otherwise.

Sample

Signature of Oversight Physician

Date

Signature of Program Coordinator

Date
