

Automated External Defibrillators

University of Tennessee Safety Procedure GS-010

Document Contact: EHS
Date effective: March 15, 2010
Revision Date: May 12, 2022

Purpose

The purpose of this procedure is to provide guidance for proper management of AEDs on campus.

Scope and Applicability

This shall apply to all places of employment on the UTK campus where students, staff and faculty are present. This program applies to the acquisition, distribution, use, training, and maintenance of AEDs. Note that all AEDs on campus are owned by the University of Tennessee, Knoxville.

Abbreviations and Definitions

Abbreviations

AED – Automated External Defibrillator

CAB – Chest Compressions, Airway, Breathing

CPR – Cardiopulmonary Resuscitation

EHS – campus Environmental Health and Safety

EMS – Emergency Medical Services

Roles and Responsibilities

Program Manager: Geoff Woolard

Office: 865-974-5084

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Mailing address (Program Manager and Alternate)

Environmental Health and Safety
1425 Tee Martin Drive
414 East Stadium Hall
Knoxville, Tennessee 37996-3503

Medical Director: Dr. Spencer Gregg, UT Student Health

Phone: 865 974-5222

Email: drgregg@utk.edu

Student Health Center

EHS shall:

- i. Determine which buildings on campus need an AED



- ii. Notify department heads of buildings of the need to have an AED
- iii. Serve as a technical resource for questions and comments for the AED program and periodically review compliance with this program.
- iv. Post the most recent edition of this plan on the EHS website.
- v. Review and revise this written plan periodically and upon notice of the need for changes.
- vi. Maintain a database of where AEDs are housed on campus. Locations are noted on the following map: <https://maps.utk.edu/?id=314#!ce/31775>
- vii. Notify department heads of any changes or important information (e.g. product recalls), related to AEDs.
- viii. Maintain AEDs that belong to EHS
- ix. Inspect AEDs of selected units.
- x. Maintain records as required.
- xi. Submit copies of this plan to outside first responders (EMS provider for Knox County/City of Knoxville) and the medical director
- xii. Submit copies of Appendix A (Automated External Defibrillator Use Report) to the medical director, following the use of an AED.
- xiii. Conduct periodic program audits. See Appendix E
- xiv. Develop an annual AED report
- xv. Purchase AEDs and register AED to maintain consistency
- xvi. Schedule and advertise CPR/AED classes on campus periodically
- xvii. Maintain a contract for CPR/AED instruction
- xviii. Coordinate installation of AEDs with department designees and Facilities Services
- xix. Provide a spare (temporary replacement) for AEDs that are taken out of service following lost, use, etc. when possible

Department Heads or Designee

- i. Notify staff members of the location of the nearest AED. This may be done by any of the following:
 - a. E-mail
 - b. Posting on bulletin boards
 - c. Staff meeting
 - d. Other means based on the department's communication plan
- ii. Ensure that department owned AEDs are inspected, tested and maintained in accordance with the manufacturer's specification
- iii. Ensure staff who are likely to use an AED are adequately trained, including periodic refresher programs.
- iv. Maintain records as necessary.
- v. Perform an annual audit using Appendix E
- vi. Notify EHS as soon as possible when an AED has been used

Medical Director:

- i. The medical director shall supervise and endorse the placement of AEDs
- ii. Review Appendix A submitted from EHS following use of an AED on campus.

Procedures

Purchasing an AED

AEDs that are purchased shall meet the requirements of Tennessee Codes Annotate (TCA 1200-12-1-.19(5)) and the American Heart Association guidelines. Models that are purchased shall be consistent with other units on campus. This reference can be found at the bottom of Appendix C in this document. EHS must be contacted prior to purchase, unless the department has an existing AED.

Distribution and Location

Structures that are connected (e.g. the Student Services and the Communications) may be considered a single building. EHS will approve the location of AEDs in buildings on campus in coordination with the medical director. In addition; consideration should be given to the potential for a cardiac arrest based on several factors such as occupant age, health and the type of activity being performed. Total occupant load of the building may also be considered when purchasing an AED.

The AED should be located in a central place, near a phone in order to call 911 and that is accessible during times when the building is occupied. Trained personnel who use mobile AEDs shall have a cell phone with them while the AED is in the field. Consideration should be given to placing the AED where it:

- Won't be subject to physical damage, theft, temperature or humidity extremes
- Is readily visible and available for use. Note that signs may be used to identify the device's location where necessary.

University Police have purchased AEDs, which are kept in their squad cars. A list of AEDs on campus and their location is maintained by the AED program manager. Locations can be viewed within the UTK website map.

Training and Information

It is suggested that department heads notify employees in their building, at least annually, of where the nearest AED is located.

All employees should be familiar with emergency procedures, which include medical emergencies.

It is recommended that Department heads have a sufficient number of employees trained in CPR/AED if their building contains an AED. Trained personnel will be present when the building is open. Refresher training and record keeping are mandatory. Departments shall be responsible for keeping a list of individuals who have been trained. Training results must be forwarded to the Office of Employee and Organizational Development using appropriate forms and to the AED program manager.

CPR and AED courses are available locally through the American Red Cross, the American Heart Association or other programs recognized by the Tennessee Emergency Medical Services Board. Note that Appendix B, section 6, provides a list of other approved training courses. Environmental Health and Safety maintains a contract for CPR/AED training.

Use

When an unconscious victim is discovered, the following protocol will be followed:

Responder

Check the scene to make sure it is safe (e.g. no electrical hazards or chemical hazards) Shake and shout at victim. If no response;

Have someone call 911. If no one is available, call 911 and return immediately to the victim.

Have someone retrieve the AED. Begin the CABs or CPR.

Utilize AED if necessary and the instructions/training provided

Police Dispatcher

Immediately dispatch an officer and call for an ambulance. The ambulance should be summoned right away. (DO NOT wait for the responding officer to arrive and authorize).

Upon arrival of the responding officer, obtain as much pertinent information as possible and communicate to EMS.

Once EMS is on the scene they are in charge of further rescue efforts for the victim.

Notification

Following any event involving the use of an AED, the responder must complete the AED Use Report (See Appendix A) and send it to EHS by one of the following means:

Mail:

Environmental Health and Safety
1425 Tee Martin Drive
414 East Stadium Hall
Knoxville, Tennessee 37996-3503

Fax: to 865-974-0094 or

e-mail: safety@utk.edu

EHS shall forward a copy of the AED Use Report to the medical director for review.

Campus police must then notify EHS to ensure that supplies are restocked.

Maintenance, Repair, and Removal from Service

Departments that have purchased an AED shall maintain the device in accordance with the manufacturer's specification. AEDs should be checked at least monthly to ensure it is available for use. All repairs shall be made by a factory authorized representative.

Spent batteries should be managed in accordance with the manufacturer's guidance. If there are no recommendations with respect to battery disposal, contact EHS at 974-5084.

The manufacturer's standards must be followed after use of an AED. A record shall be kept of all repairs and maintenance of the device.

Departments shall schedule AED maintenance to the extent feasible so as to minimize down time. EHS shall be notified immediately when an AED is removed from service, found to be missing, or inoperative. Efforts shall be made to provide a replacement unit as soon as possible. A sign shall be placed on the AED's case or cabinet when it is removed from service. The sign shall indicate that the AED is out of service and the location of the nearest unit.



Coordination with Emergency Responders

A copy of this written document will be given to the EMS provider for the Knox County/City of Knoxville for their use, comments and coordination. Revisions shall be submitted by EHS to appropriate off-site responders.

Program Review

Each department shall conduct an annual review of its AED program using the Annual Departmental AED Review Checklist found in Appendix E. The AED program manager shall collect the departmental reviews and including with the comprehensive review. Results shall be provided to the Safety Committee and others as deemed necessary.

Recordkeeping

The following records must be maintained

1. Periodic maintenance, repair and inspection records
2. Record of employee training
3. Other records as defined by the equipment manufacturer
4. Record of Use (Appendix A)
5. Record of transmittal to responding EMS agency and their approval of the plan, placement and program
6. Physician approval of installation location

The records shall be maintained for at least 10 years. In the event of an accident or failure of the AED, where litigation could occur, the record shall be kept for a longer period of time. Records 1, 2, and 3 from this section shall be kept by the department that owns the AED. Records 4 and 5 shall be maintained by EHS.

References

Tennessee Codes Annotated (TCA) 63-6-218

Tennessee Codes Annotated (TCA) 68-140 section 701 through 709 Tennessee Codes Annotated (TCA) 1200-12-010-.19

UT System Policy Parent: SA0100 – Safety and Environmental Health Program

Appendices

Appendix A - Automated External Defibrillator Use Report

Appendix B - Tennessee Codes Annotated 1200-12-01-.19 AED Programs

Appendix C – American Heart Association Guidelines

Appendix D – Map of AED Locations on Campus

Appendix E – Annual Departmental Program Audit Checklists

Appendix F – Comprehensive Annual AED Program Review

Disclaimer

The information provided in these guidelines is designed for educational use only and is not a substitute for specific training or experience.

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Appendix A: Automated External Defibrillator (AED) Use Report

Date and time of Use: _____ Location: _____

AED model used: _____

Patient Information

Name: _____ Age: _____ Sex: _____ Race: _____

Patient condition upon your arrival (circle)

Conscious	Breathing	Pulse	CPR administered
Unconscious	Not breathing	No Pulse	No CPR administered

What action did you take? _____

Was an AED shock needed? Yes No Was a shock delivered? Yes No

Did pulse return? Yes No Did breathing return? Yes No

Was CPR performed? Yes No By whom? _____

Did the patient become conscious? Yes No

Condition on arrival of EMS? _____

Outcome (if known): _____

Names of all AED responders: _____

Date: _____

Please submit report Campus Environmental Health and Safety at:

Mail: Environmental Health and Safety, 1425 Tee Martin Drive, 414 East Stadium Hall, Knoxville, TN 37996-3503 | Fax: to 865-974-0094 | e-mail: safety@utk.edu

Appendix B:

Tennessee Codes Annotated 1200-12-01-.19 Automated External Defibrillator Programs

- (1) Each entity shall submit a written notice to the local primary emergency medical services provider or emergency communications district that provides the following information:
 - a. The name of the entity, the owner of the AED, and a contact person and an alternate with telephone numbers, and mailing address of the placement facility;
 - b. the street location and site within the facility where the AED shall be placed, means to access the AED, hours during the day when the AED may be available, and whether the AED may be used off-site;
 - c. Description of the AED by manufacturer and model;
 - d. Listing of the area emergency medical services and contact information for the EMS agency and emergency communications district;
 - e. the name and contact information of the physician supervising the AED placement; and,
 - f. How the use of the AED is coordinated with the local EMS system.
- (2) Each entity shall maintain and submit a copy of a written AED plan to the local primary emergency medical services provider or emergency communications district that includes:
 - a. Designation of the training programs adopted by the entity to prepare expected users;
 - b. A list of individuals appropriately trained and authorized;
 - c. Plan of action for proper use of the AED;
 - d. Registration with local emergency medical services with acknowledgement by their representatives of the AED placement, plan, and program;
 - e. Description of how the AED program coordinates with EMS and the dispatching entity;
 - f. Maintenance and testing procedures necessary to maintain the device, as well as sample forms to document proper maintenance; and,
 - g. Reports that shall be made of AED use along with other records to be maintained by the program.
- (3) Each entity shall complete a report of the use of an AED and submit a copy to the responding EMS agency and the supervising physician to document the following:
 - a. Time of use or deployment of the device;
 - b. The model of AED used;
 - c. Names of the AED responders;
 - d. Patient information, when known, to include name, age, race, and gender of the patient;
 - e. Condition of the patient upon arrival of AED responders and resuscitative actions taken;
 - f. Condition of the patient upon arrival of EMS; and,
 - g. Patient outcome.
- (4) Each placement of an AED shall be supervised and endorsed by a physician with an unrestricted license to practice medicine or osteopathy in Tennessee.
- (5) Each automated external defibrillator shall comply with the provisions of T.C.A. § 68-140- 710 and shall perform the following capabilities:
 - a. Analyze heart rhythm and deliver electrical impulses (countershocks) for at least thirty
 - b. (30) minutes after deployment;
 - c. Deliver visual or audible warnings of low battery power;
 - d. Provide an audible or visual warning of loose connections of the electrodes; and

- e. Incorporate an internal event record providing the time of activation, times of rhythm analysis, and times of delivery of countershocks.
- (6) The following training programs in cardiopulmonary resuscitation and AED use are consistent with the scientific guidelines of the American Heart Association and have been approved by the Tennessee Emergency Medical Services Board.
- a. Heartsaver AED and Basic Life Support for Healthcare Professional CPR and AED Courses of the American Heart Association
 - b. Advanced Cardiac Life Support Course of the American Heart Association (for Healthcare professionals in conjunction with Basic Life Support for Healthcare Providers)
 - c. Workplace First Aid and Safety; Adult CPR/AED Training Course of the American Red Cross
 - d. AED Training Course of the American Red Cross (in conjunction with Adult and Professional Rescuer CPR courses)
 - e. AED Course of the National Safety Council (in conjunction with AHA, NSC, or ARC Adult CPR Courses)
 - f. Heartsaver FACTS Course of the National Safety Council or American Heart Association;
 - g. Medic First Aid family of programs for Basic Life Support for Professionals and AED Training by EMP International, Inc.
 - h. American Safety and Health Institute programs for Basic CPR and AED education and training.
 - i. Coyne First Aid CPR and AED training program.

Authority: T.C.A. §§4-5-202, 68-140-504, 68-140-505, and 68-140-705. **Administrative History:** Original rule filed January 24, 2002; effective April 9, 2002. Amendment filed August 15, 2005; effective October 29, 2005.

Appendix C

2015 American Heart Association Guidelines for CPR and ECC

<https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/>

Appendix D

Map of AED Locations on Campus

<https://maps.utk.edu/?id=314#!ce/21430.31775?ct/27641.0>

Appendix E

Annual Departmental AED Program Review

Use the back of this sheet or a separate sheet for additional comments. Questions about this checklist of the AED program should be directed to Mark Smith or April Case in Environmental Health and Safety at 974-5084. Copies of the written plan can be found at: ehs.utk.edu

Program Element	Status	Comments or Action
Is there an inventory of AEDs?		
Are the AED located in a suitable environment (temperature, humidity, etc.)?		
Are AEDs visible and accessible where provided?		
Are AEDs being inspected at least monthly?		
Is the inspection process documented?		
Are the expiration dates on the pads and batteries being tracked?		
Have all AEDs on campus been registered with the appropriate authorities?		
Has staff been trained in CPR and AED use by an approved source?		
Has the training been documented and is it current?		
Does staff in the department know who is authorized to use an AED?		
Have any AEDs been repaired or removed from service?		
Have repairs been documented?		
Has any AED been used on a person and has this been documented?		
Other items for review		

Review conducted by: _____ Date: _____

Department: _____

Appendix F

Comprehensive Annual AED Program Review

This form must be completed annually the AED program manager or his/her alternate.

Program Element	Status	Comments or Action
Does the campus have a written plan for AEDs?		
Has the plan been reviewed/revised within the past two years?		
Does the plan accurately reflect current practice?		
Has the medical director approved the plan and has this fact been documented?		
Has the local primary emergency medical services provider or emergency communications district approved the plan?		
Has a person or department been identified to manage this program?		
Has a medical director been identified?		
Is there a master inventory of AEDs?		
Is there written approval from a physician with respect to approved locations?		
Has each department that owns an AED submitted an annual review?		
Are there any outstanding items?		
Have there been any recalls or safety notices associated with the AEDs on campus?		
Other program elements		

Review conducted by: _____ Date: _____