

Princeton University

Automatic External Defibrillator Program

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General

Heart disease is a significant health problem that, according to the American Heart Association, affects nearly 8 percent of all Americans and results in nearly 350,000 deaths each year. While several electrical abnormalities can result in sudden cardiac arrest, the majority begin with ventricular fibrillation. Rapid treatment of ventricular fibrillation, through the application of a controlled electrical shock, is essential to the victim's survival. The American College of Occupational and Environmental Medicine (ACOEM) recommends placement, when practical, of Automated External Defibrillators (AEDs) in sufficient workplace locations to allow initiation of resuscitation and use of the AED (the so-called "drop to shock" interval) within 5 minutes of recognized cardiac arrest.

Purpose

To ensure that the University AED Program meets appropriate portions of ACOEM's *Guidelines for the Use of Automatic External Defibrillators (AEDs) in Workplace Setting* and the Department of Health and Human Services (HHS) *Guidelines for Public Access Defibrillation Programs in Federal Facilities*, and satisfies New Jersey state laws pertaining to AED acquisition and use.

Program Responsibilities

The **University AED Program Medical Advisor**, Janet A. Neglia, M.D., Associate Director of Clinical Services, Princeton University Health Services, is responsible for medical direction and control for the University's AED program. Responsibilities include:

- Develop and/or approve all medical aspects of the program,
- Approve for use at the University type(s) of AED unit(s) that satisfy New Jersey state law,
- Select and/or approve ancillary medical equipment and supplies for the University's AED program,
- Provide written authorization for acquisition and placement of each AED unit,
- Approve type(s) and frequency of AED training provided to University personnel that will satisfy New Jersey state law and ACOEM guidelines,
- Perform a medical review each time an AED unit is used at the University,
- Act as medical liaison with local emergency medical services (EMS), such as Princeton First Aid and Rescue (PFARS), and coordinate EMS response protocols that satisfy New Jersey state law.
- In cooperation with the University AED Program Coordinator, perform annual review of all components of the University AED program and the efficacy of departmental AED programs with individual coordinators.

The **University AED Program Administrator**, Gregory D. Cantrell, CSP, Assistant Director and University Safety Engineer, Environmental Health & Safety, is responsible for administrative oversight of the University's AED Program, in consultation with the University AED Program Medical Advisor.

Responsibilities include:

- Develop and maintain a written program for the University AED program,
- Assist Departmental AED Program Coordinators in development and maintenance of departmental written program, and establishment of protocols necessary for an effective AED program (see Appendix A),
- In cooperation with the University AED Program Medical Advisor, provide timely written notification to PFARS about the acquisition of AED units, the type acquired, and its location,
- Identify and communicate relevant federal and state laws and regulations
- Conduct annual reviews of departmental AED programs,
- Annually and upon request, provide program updates and status reports to the ESRM committee,

The **Departmental AED Program Coordinator** is responsible for the day-to-day management of her/his department's AED program, in consultation with the University AED Program Medical Advisor.

Responsibilities include:

- Develop and maintain a written program and protocols for Department’s AED program that satisfy New Jersey state law and appropriate portions of ACOEM guidelines (see Appendix A),
- Ensure AED units are properly maintained and tested in accordance with manufacturer’s guidelines,
- Ensure department personnel are trained in accordance with guidelines established by the University AED Program Medical Advisor,
- Ensure that adequate AED-related supplies and recommended ancillary medical equipment are kept on-hand,
- Maintain required personnel training and unit maintenance and testing records related to the department’s AED program,
- Ensure that the University AED Program Medical Advisor is notified of any use of the department’s AED unit,
- Participate in annual program reviews.

Following is a list of Departmental AED Program Coordinators. This list, along with contact information and AED locations is available on the EHS website at <http://www.princeton.edu/ehs>.

- Public Safety – Thomas Glospe, Twylen Hicks, Lt. David Tricoche
- UHS – Brenda Como
- Art Museum – Albert Wise, Ed Murfit, Gail Everett
- Firestone Library – April Miller, James Thomas
- CoGeneration Plant – Eric Wachtman
- Athletics Department – Greg Paczkowski, Matt Brzycki, Jenn Lister
- Frist Campus Center – Laurie Hall

Criteria for Placement of AEDs and Supplies

The ACOEM recommends placement, when practical, of AEDs in sufficient workplace locations to allow initiation of resuscitation and use of the AED (the so-called “drop to shock” interval) within 5 minutes of recognized cardiac arrest. Written requests for AED units must be submitted for approval to the University AED Program Medical Advisor, who will consider such requests in consultation with the Director of Risk Management, the Director of Environmental Health and Safety, and the University AED Program Administrator. Placement of AEDs and supplies will be considered by utilizing, in part, the following criteria:

- Departments or other functional areas that are staffed with trained and certified first responders.
- Locations considered to present a higher than normal risk for occupants to suffer sudden cardiac arrest, such as athletic facilities.
- Wherever mandated by regulatory requirements.

Departmental AED Written Program and Protocols

Each AED-user department must establish written program and protocols that include at least the following components:

- Coordination with University AED Program Medical Advisor,
- Identification of authorized AED and ancillary equipment,
- Location and/or assignment of AED units,
- Training and/or certification requirements for personnel,
- Procedures for
 - maintenance and replacement of AED and ancillary equipment,
 - use of AEDs,
 - contacting Public Safety,
 - interfacing with other health care providers,
 - post event debriefing
 - recordkeeping.

- Quality assurance program that addresses medical review of AED use, recordkeeping, and methods for program evaluation.

Records Retention

Departments must maintain maintenance and testing records required by this program for a period of two years (e.g., current year and immediate past year). Records that reflect the current status of employee training should be maintained until the next training cycle is complete. All other records, including those associated with AED use or post event debriefings, should be maintained indefinitely.

Annual Program Review

The University AED Program Administrator will annually conduct a review of all components of the University's AED program and make appropriate recommendations for improvement or remediation. An outline of the annual review is found in Appendix B.

Appendix A

Defibrillator Program Protocol



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I. PURPOSE

The Princeton University AED Program is established to provide the availability of early defibrillation to victims of cardiac emergencies by trained responders. Currently, AED units are placed in University Health Services (UHS), Athletics Department, Department of Public Safety, Firestone Library, Art Museum, CoGeneration Plant, Frist Campus Center, and notification has been given of these locations to local first responder personnel.

Following are guidelines for the day-to-day operation of an AED Program within any user department.

II. GLOSSARY OF TERMS

A. DEFINITIONS

1. AED Program Medical Advisor is the Associate Director of Clinical Services, Janet A. Neglia, M.D., Princeton University Health Services.
2. Departmental AED Coordinator is an employee of the user department who oversees the AED Program, maintenance of the AED Units, and training of the employees.
3. AED Healthcare Provider, Lay Responder / Rescuer (LRR) is an employee of the Department who is appropriately trained and certified to operate an AED Unit during his/her time at work.
4. First Responder-Defibrillation is a Department of Public Safety Officer who has obtained additional training and certification in the use of an automatic external defibrillator (AED) and then subsequently certified in Emergency Response.
5. Emergency Medical Technician-Defibrillation (EMT-D) is an Officer of the local Municipalities or a member of the Princeton First Aid and Rescue Squad who is currently certified as an EMT-B and has obtained additional training and certification in the use of an automatic external defibrillator (AED).
6. EMT-D Agency is the Princeton First Aid and Rescue Squad, and Mercer County Intensive Care Unit (MICU).
7. AED Unit is the Medtronic Lifepak 500, Medtronic CRPlus Defibrillator, or other equipment that complies with the "Guidelines for Public Access Defibrillation Programs in Federal Facilities" and has been approved for use at the University.
8. Defibrillation is an electric "SHOCK" delivered to the heart to correct certain life threatening heart rhythms.

III. CERTIFICATION AND TRAINING REQUIREMENTS FOR DEPARTMENT MEMBERS

- A. AED Healthcare Provider / AED Lay Responder / Rescuer (LRR) will be initially certified and shall maintain current certification in a program through a nationally recognized training organization such as the American Heart Association (AHA) or American Red Cross (ARC) in CPR and the use of an automatic external defibrillator (AED).
- B. The Department AED Coordinator will ensure compliance with these requirements and maintain all the documents and records concerning the implementation of the “University AED Program”. The AED Program medical advisor will receive copies of these records annually.

IV. AUTHORIZED EQUIPMENT

- A. Only equipment approved by the AED Program Medical Advisor will be utilized.
 - 1. The approved AED Units to be used is the Medtronic Lifepak 500 and the Medtronic CRPlus.
 - 2. Defibrillation pads to be used must be compatible with the Medtronic Lifepak 500 AED and CRPlus. In the event a University AED unit is used to treat a person, the AED Lay Responder / Rescuer (LRR) should ask Mobile Intensive Care Unit (MICU) personnel for replacement pads prior to leaving the hospital and placing the AED back in service.

NOTE: The unit located in the Urgent Care area is part of the emergency “crash cart” and does not comply with the above. Currently, this unit the Hewlett-Packard Heartstream is not intended for use by the AED lay responder. It will be used by trained medical staff only and is exempt from this protocol. This unit is tested daily and logs are kept separate from the other AED units in UHS.

V. ASSIGNMENT OF AED UNITS

- A. AED Units should be uniquely identified for reporting purposes.
- B. AED Units will be placed in service by designated AED Coordinator.
- C. AED Units removed from service will be kept by the AED Coordinator. The University AED Program Administrator should be notified immediately whenever a unit is removed from service.
- D. AED Units used by a department in a fixed location will be placed in a manner that complies with the “Guidelines for Public Access Defibrillation Programs in Federal Facilities”.

FOR EXAMPLE AED Locations and Unit Numbers

Unit Number XXX Employee Health (hallway, Garden Level opposite Rm G05)

VI. EQUIPMENT CHECKS

- A. At 0300 hours each day, unless being used, the AED unit performs a Self-Diagnostic Test. To further ensure proper operation of the unit, the AED Coordinator's will assign the AED Unit to its proper fixed location¹ and will fill out an AED Unit Operator's Checkout Sheet² and complete the following steps prior to putting the unit in service, monthly, and after any application of the unit.
1. Check the unit for foreign substances, clean as necessary.
 2. Check the unit for exterior damage or cracks.
 3. Examine the accessory cables for damaged, cracked, broken or bent connectors.
 4. Check the package containing the conduction pads to be sure the seal is not broken and that the expiration date has not passed. Replace the pads if necessary and obtain a second set from MICU as soon as possible.
 5. Conduct a check to confirm any problems that may have been detected by the AED Unit's Self-Diagnostic Test.
 - a. Open the exterior cover.
 - b. Check the screen for any messages that may indicate a potential operational problem. Messages may include "Battery Low", "Replace Battery" or "Call for Service". If any messages are noted, the unit shall not be placed in service. The message is to be marked on the checklist and the procedure for reporting damaged equipment shall be followed. A blank screen indicates that unit is working properly.
 - c. Close the exterior cover.
 6. Due to the AED Unit's sensitivity to temperature extremes, the AED Unit will be carried in manner approved by the Medical Director.
 7. AED Coordinator should maintain an adequate supply of Defibrillation Patient Report Forms.
 8. Any equipment problems or damage will be noted on the AED Unit Checkout sheet by the Department AED Coordinator.

VII. USAGE OF THE AUTOMATED EXTERNAL DEFIBRILLATOR (AED)

¹ AED Location List Unit Checkout sheet

² AED Unit Operator's Checkout Sheet

- A. Utilize the Automated External Defibrillator (AED) in accordance with training. The AED Lay Responder / Rescuer (LRR) should not allow other University personnel to use an AED Unit unless that the person is currently trained to operate the AED Unit.

VIII. INTERFACING WITH OTHER HEALTH CARE PROVIDERS

- A. AED Lay Responder / Rescuer (LRR) shall comply with all policies and procedures required by this program and their training.
- A. AED Lay Responder / Rescuer (LRR) shall follow the approved procedures when delivering patient care. Upon arrival of the Mercer County Intensive Care Unit (MICU), the AED Lay Responder / Rescuer (LRR) shall follow their instructions. The AED Unit will stay with the MICU and later be returned to Public Safety.
- C. The AED Lay Responder / Rescuer (LRR) in charge of patient care will give a verbal report to the MICU responders.

IX. REPORTING REQUIREMENTS AND PROCEDURES

- A. A Defibrillation Patient Report must be completed on every patient to whom the AED Unit is applied, regardless of whether shocks were actually performed. All reports are to be completed by the AED Lay Responder / Rescuer (LRR) immediately following the incident.
- B. The AED unit will be turned over to the Department of Public Safety, the Princeton First Aid and Rescue Squad, or the Mercer County Intensive Care Unit who will provide the printout for the event.
- C. The printout will generate an "AED Event Report" that will include an Event Log, Event Summary and Test Log. The AED Lay Responder / Rescuer (LRR), or a member of the Princeton University Health Service, the Princeton First Aid and Rescue Squad, or the Mercer County Intensive Care Unit (MICU) is to fill out the patient information at the top of the report by hand.
- D. The following reports must be distributed:
 - 1. An AED Event Report and Defibrillation Patient Report to the hospital where the patient is taken.
 - 2. Department of Public Safety's Report, an AED Event Report, Defibrillation Patient Report to the AED Program Medical Advisor, Janet A. Neglia, M.D. and the University AED Program Administrator, Gregory Cantrell.
 - 3. Department of Public Safety's Report, an AED Event Report, and the

Defibrillation Patient Report to the Department of Public Safety Shift Supervisor.

4. An AED Event Report and Defibrillation Patient Report shall be given to the BLS Squad that transported the patient to the hospital.

The AED Unit will be taken “**out of service**” until the Departmental AED Coordinator can complete an AED Unit Checkout Sheet and insure that the unit is working properly and can be placed back in service.

X. PROCEDURES FOR CONTACTING THE PUBLIC SAFETY / EMS PERSONNEL

A. In any cardiac emergency the following procedures should be followed:

1. The AED Lay Responder / Rescuer (LRR) on the scene will assess the scene in accordance to their training course session and activate the EMS System by calling “911” and inform them of the location and nature of the emergency themselves or by having a bystander complete this task.
2. The Department of Public Safety Dispatcher will dispatch the Princeton First Aid and Rescue Squad and advise the local municipal Police Department Communications Officer that a the AED Lay Responder / Rescuer (LRR) is on the scene and that a Department of Public Safety AED Officer and AED Unit are also responding. The Department of Public Safety Communications Officer will update the additional responding personnel as appropriate.
3. The AED Lay Responder / Rescuer (LRR) will remain with the victim and render aid in accordance to their training.
4. Upon the arrival of the a member of the Princeton University Department of Public Safety, the local Municipal Police, the Princeton First Aid and Rescue Squad, or the Mercer County Intensive Care Unit (MICU) the AED Lay Responder / Rescuer (LRR) in charge of patient care will give a verbal report to the arriving personnel. This report should include information regarding the use of the AED and if possible, specific patient information. The AED Lay Responder / Rescuer (LRR) will then render aid as requested by these personnel.

XI. POST EVENT DEBRIEFING PROCEDURES

A. Promptly after the event the following should be conducted:

1. It is mandatory that AED Program Medical Advisor, Dr. Janet A. Neglia be notified within a 24 hour period by the AED Lay Responder / Rescuer or the Department of Public Safety Shift Supervisor.

2. It is recommended that the AED Lay Responder / Rescuer (LRR) and assisting personnel speak to someone from the University's Employee Assistance Program (EAP) at University Health Services. Follow up appointments are not required but encouraged.
3. The AED Program Medical Advisor, University AED Program Administrator, Lay Responder / Rescuer (LRR), Department of Public Safety representative and other personnel as appropriate will conduct a "debriefing meeting" where all aspects of the performance of the system, personnel, AED Unit, protocols will be addressed with a non-judgmental eye toward validating or improving effectiveness and identify and problem areas that need to be addressed. Every effort should be made to schedule the "debriefing meeting" within two weeks of any incident.

XII. RECORDKEEPING

- A. The Departmental AED Coordinator will keep the following items current and in a portable binder or container.
 1. An AED Location List Sheet
 2. A list of current AED Lay Responder / Rescuer (LRR)s in the Department.
 3. AED Unit Operator's Checkout Sheets and Maintenance records for the past twelve (12) months.
 4. Any year to date reports of usage as indicated in:
Section IX. REPORTING REQUIREMENTS AND PROCEDURES.
 5. Any other current related AED information.

XIII. AED QUALITY ASSURANCE PROGRAM

1. MEDICAL REVIEW: by the AED program Medical Advisor: case by case review each time the AED is applied, (regardless of shock being administered),. These records will be kept on file by the Medical Advisor.
2. RECORD KEEPING: by the Department Program Coordinator
 - a. records of all AED-related training including names of instructors, persons trained and dates of initial, refresher and renewal classes
 - b. records of all AED locations, test logs, service and updates.
3. PROGRAM EVALUATION: by Medical Advisor, Program Coordinator and others as appropriate.
 - a. Yearly review of all components of the AED program with modifications as

necessary.

- b. Yearly assessment of efficacy of the program with modification as necessary.
4. FEDERAL AND STATE REGULATION COMPLIANCE: to be monitored by the AED Program Medical Advisor. Updates will be provided as necessary to other Princeton University AED user groups.
5. AED program Medical Advisor will continue to coordinate with local emergency medical services (Princeton First Aid and Rescue Squad (PFARS)); PFARS will receive timely notification of any logistic changes to the Princeton University AED program, i.e., purchase of new unit, any location changes, units out of services, additional user groups, etc.

Princeton University Health Services
Defibrillation Patient Report

- Name of Victim: _____
- Address of Victim: _____
- Sex: Male _____ Female _____
- Race: _____
- Weight: _____ pounds
- Date of Birth: / / = AGE _____

Location of Incident: _____

Status of Victim Upon Arrival:

Conscious _____ Unconscious _____ Semiconscious _____
Oriented _____ Confused _____ Resp.Arrest _____ Cardiac
Arrest _____

Nature of Call: Cardiac Problem _____ Respiratory _____
_____ Trama / Accident _____ Drowning _____
_____ Electrocution: _____ Poisoning _____

Onset of Symptoms: Date: / / Time: _____

C.P.R. Started On: / / at _____ hours; _____ sets

By whom: Lay Person _____
Public Safety _____
Police Dept. _____
Princeton First Aid _____
MICU _____

Defibrillation: _____ times By whom:
LRR _____
Public Safety _____
PBPD or PTPD _____
Princeton First Aid _____
MICU _____

List of Personnel on Scene

- Healthcare provider _____
- The AED Lay Responder / Rescuer(LRR) _____
- Department of Public Safety: _____
- Local Police Department: _____
- Princeton First Aid and Rescue: _____
- Mercer County Intensive Care Unit (MICU) _____

Appendix B

Annual Program Review

The University AED Program Administrator will annually conduct a review of all components of the University's AED program and make appropriate recommendations for improvement or remediation. The annual review will include at least the following components:

- Review of the University AED written program,
- Review of New Jersey state laws and ACOEM and HHS guidelines related to AED use,
- Review of written communications with PFARS or other EMS,
- Discussion and review of University AED Program Medical Advisor's responsibilities and activities,
- Discussion and review of each Departmental AED Program Coordinator's responsibilities and activities,
- Review of all departmental AED written programs,
- Review of all departmental records related to personnel training and AED locations, use, service, and testing,
- Review of all departmental AED quality assurance programs,
- Discussion of program review results with the Director of Risk Management, the Director of Environmental Health and Safety, and the University AED Program Medical Advisor,
- Report to the ESRM committee.