



Millersville University

# Automated External Defibrillator Procedure

Department of Environmental Health and Safety

EHS Standard Operating Procedure- 4.2

1/18/23

## TABLE OF CONTENTS

1.0 PURPOSE

2.0 SCOPE

3.0 RESPONSIBILITY

3.1 ENVIRONMENTAL HEALTH AND SAFETY

3.2 MEDICAL OVERSIGHT

4.0 DEFINITIONS

5.0 PROCEDURES

5.1 RESPONSE

5.1.1 GENERAL

5.1.2 AED

5.1.3 FIRST RESPONDER

5.2 POST INCIDENT

6.0 TRAINING

7.0 PROCUREMENT

7.1 PURCHASING

7.2 LOCATION

7.3 NOTIFICATION OF LOCAL EMS

8.0 ADMINISTRATION

8.1 INSPECTION

8.2 MAINTENANCE

9.0 REFERENCES

ATTACHMENT A: AED Inspection and Maintenance Spreadsheet

## **1.0 PURPOSE:**

Millersville University (MU) is committed to preventing loss of life, and maintaining a safe environment for students, faculty, staff, and visitors. This procedure is designed to provide guidance regarding the location, use, and maintenance of Automated External Defibrillators (AED's) at Millersville University.

CPR and early defibrillation have proven to be significant factors in improved out-of-hospital cardiac arrest survival rates. An AED is a device that can be placed onto a victim's chest to assess the heart's rhythm and, if needed, automatically deliver an appropriate level of electrical shock to the victim's heart, hopefully restoring normal heart rhythm. For this reason, AED's have been provided throughout the campus and are available for use during a cardiac arrest event. Proper maintenance and care of the AED units is also critical to the proper functionality of the units.

## **2.0 SCOPE:**

This plan applies to all Millersville University employees, students, and visitors and shall apply to all university buildings and facilities. The plan outlines the process by which AED's will be purchased, installed, maintained, and used at Millersville University.

The AED will enable University personnel, students, or members of the public to deliver early defibrillation to victims in the first critical moments after a sudden cardiac arrest. The plan should be used as an initial tool prior to the arrival of properly trained and certified first responders and is meant to provide a lifesaving bridge during the first moments after a sudden cardiac arrest.

## **3.0 RESPONSIBILITY:**

### **3.1 ENVIRONMENTAL HEALTH AND SAFETY (EHS)**

The Director of EHS Office acts as the Program Coordinator for the Millersville University AED Program and is responsible for:

- I. Approving installation of AEDs at selected locations throughout the campus.
- II. Working with Facilities Operations on the placement and mounting of all AED's and related components/equipment/signage.
- III. Serving as the point of contact for trained AED/CPR users.
- IV. Coordinating enrollment and training of university employees to become AED users.
- V. Inspecting and maintaining the AED's (with the assistance of Facilities Operations and other departments)
- VI. Program oversight and day-to-day administration

### **3.2 MEDICAL OVERSIGHT**

Utilization of an AED requires medical oversight by a licensed physician. The MU Health Services department and Medical Director provide the necessary medical oversight of the AED Program. The Medical Director authorizes the initial use of the AED's and establishment of the AED program. They are also

involved in other aspects of the AED program such as training, quality control, and incident review. The Medical Director reviews every event in which an AED is used and is available to conduct post-incident sessions for university employees involved in AED use.

#### 4.0 DEFINITIONS

**Automated External Defibrillator:** portable, life-saving device designed to treat people experiencing sudden cardiac arrest, a medical condition in which the heart stops beating suddenly and unexpectedly.

**Defibrillation:** administering a controlled electric shock to allow restoration of the normal heart rhythm.

**Fibrillation:** muscular twitching involving individual muscle fibers acting without coordination.

**Program Coordinator:** the professional who oversees the administrative activities of a designated program.

**Responder:** a person trained in CPR, First Aid, and the use of an AED, or a layperson attempting resuscitation efforts as a Good Samaritan.

**Status Indicator:** small window on the front handle of the AED that displays the results of the most recent self-test. Self-tests are automatically conducted weekly, monthly, and after battery installation, or by turning the power on. The indicator will display a green check mark or a red "X".

**Sudden Cardiac Arrest:** the abrupt loss of heart function, breathing, and consciousness from a problem with the heart's electrical system, which disrupts the heart's pumping action and stops blood flow to the body.

#### 5.0 PROCEDURES FOR USE

##### 5.1 RESPONSE

###### 5.1.1 GENERAL

When it is determined, through discovery, direct observation, or verbal notification, that there is a potential cardiac arrest or unconscious person, it is critical that someone get emergency medical care to the victim. The following instructions are a guide to properly responding to such an event:

- I. If alone, call for emergency medical assistance. If other individuals are available, designate who will call for help while the other(s) tend to the victim.
- II. Retrieve an AED or delegate another individual to do so (**Note: All campus AEDs are in non-secured, wall-mounted storage cabinets. Any responder can easily access a buildings AED.**)
- III. Notify emergency services by using a cell phone or any campus

- phone to dial 911.
- IV. Tell the dispatcher or emergency medical responder where the victim is located.
  - V. Stay on the line and answer all the Dispatcher's questions until told to do otherwise.
  - VI. If you are trained in AED/CPR, deliver emergency medical care to the victim until the EMS professionals arrive.
  - VII. Once EMS professionals arrive, be prepared to answer the following questions, to the best of your ability:
    - a. Was the event witnessed?
    - b. Has standard CPR been started?
    - c. How long has the victim been down?
    - d. Has the AED delivered a shock to the victim?
    - e. Who is the victim (if you know)?
    - f. Is the victim on any medications (if you know)?

### 5.1.2 AED

When the AED Plus has arrived at the patient's side, depress the power button to turn it on and the unit will automatically initiate the sequence of voice prompts and graphic illuminations for a rescue event. The sequence continues until the AED Plus is turned off or the electrodes are disconnected from the victim for an extended period.

Continue to follow the AED voice guided prompts. As soon as electrodes are attached to the victim and impedance of the connection is verified, the unit stops cycling through the above-mentioned voice and graphic illumination sequence and automatically begins analysis of the ECG rhythm. Following the results of this ECG analysis, voice prompts tell the rescuer whether a shockable or non-shockable rhythm has been detected. If a shockable ECG rhythm is present, the graphics illuminate, and voice prompts guide the rescuer through the defibrillation sequence. When no shock is advised, the AED Plus issues the audio prompts, NO SHOCK ADVISED and START CPR, and illuminates the CPR-related graphics.

A period of 2 minutes (depending upon device configuration) is then allowed for rescuer CPR. Following this "CPR period", the AED Plus automatically re-initiates a new ECG rhythm analysis.

Continue to follow the AED prompts until relieved by someone with a higher level of training and certification.

**Note:** JUDICIAL CODE (42 PA.C.S.) - GOOD SAMARITAN CIVIL IMMUNITY FOR USE OF AUTOMATED EXTERNAL DEFIBRILLATOR AND NONMEDICAL GOOD SAMARITAN CIVIL IMMUNITY provides that any person who in good faith acquires and maintains an AED or uses an AED in an emergency shall not be liable for any civil damages as a result of any acts or omissions by [such] an individual [in] using the AED, except [any] if acts or omissions intentionally designed to harm or any grossly negligent acts or omissions [which] result in harm to the individual receiving the AED treatment.

### **5.1.3 FIRST RESPONDERS**

Local EMS (Lancaster County EMS) and Fire Departments (Blue Rock Fire Rescue) may use different AED's than those supplied by the university. When EMS providers arrive, they will assume control over the incident scene. Follow any commands or actions as instructed. Responders may request your assistance in continuing CPR or other tasks. If no tasks are assigned, provide adequate space for the responders to work and remain in the area in case police or other responders need information regarding the situation.

### **5.2 POST-INCIDENT**

After any use of an AED a Post Event Review will be performed, headed by the EHS Office and involving representatives of University Health Services, University Police, Housing and Residential Programs (if the use was in a dormitory building), local EMS professionals, as well as witnesses to the event and those who took part in providing emergency care or other assistance during the event.

The event review provides important feedback to the responders and the university administration. Specific activities which were performed, and actions that can be improved upon will be discussed. Some post-event criteria which will be reviewed and evaluated include:

- I. How much time elapsed between finding the victim and calling 911?
- II. How long did it take, from the time the victim was discovered, until the AED was placed on the victim (regardless of whether it delivered a shock)?
- III. What lessons can be learned from this event to improve future emergency medical care responses and AED use?

Responders to incidents involving cardiac arrest may need emotional support and help so as not to damage their emotional health. Any MU employee who takes part in delivering emergency care to a victim, or who witnesses the event, and who needs critical stress debriefing or other emotional support services should contact the State Employee Assistance Program at 800-692-7459. Students involved or affected by the incident should contact the Millersville University Center for Counseling and Human Development 717-871-7821 or Crisis Intervention at 717-394-2631.

### **6.0 TRAINING**

University personnel or departments that are specifically assigned AED's will ensure that personnel are trained in their proper use and possess certification in CPR by an accredited CPR organization (ProTrainings, the American Heart Association, the Red Cross, etc.). Training elements should include:

- I. Why and how to activate local EMS
- II. How to buy time for the victim by performing 1-rescuer CPR until the AED arrives
- III. How to assess the patient and determine if you should use an AED How to attach AED pads and ensure that the device is used properly

- IV. How to follow safety protocols to protect the user and bystanders
- V. How to deal with unusual situations (such as a victim with implanted defibrillator or a victim lying in water)
- VI. How to use all emergency response skills in an emergency

Departments requesting CPR training or AED training may do so by contacting EHS by phone at 717-871-7066 or by email at [EHS@millersville.edu](mailto:EHS@millersville.edu)

## **7.0 PROCUREMENT**

### **7.1 PURCHASING**

The purchase of all AED's will be coordinated through the Office of Environmental Health and Safety utilizing approved vendors. This will include the purchase of batteries, defibrillation pads, and any other associated accessories or equipment required for use with the AED's.

Specifically requested AEDs for special programs and areas may be billed back to the requesting department, as determined by the Program Coordinator.

### **7.2 LOCATION**

The American Heart Association (AHA) recommends a response time of 3 to 5 minutes to deliver a shock to a victim. In other words, a responder should be able to reach the AED, return to the victim, and deliver the shock, optimally, in under 3 minutes, and no more than 5 minutes. The AHA recommends that building owners determine if there are places on-site where the risk of sudden cardiac arrest may be more likely.

AEDs are present in many campus buildings and are in common areas, such as hallways and lobbies, with their location clearly labeled so that responders know where to go to get the AED. AEDs are stored in wall-mounted, clearly labeled cabinets specifically designed for storing AED's. The location of all AED's will be maintained by Facilities and EHS and will be updated as needed utilizing the AED Inspection and Maintenance Spreadsheet that is maintained in a shared folder online (**Attachment A**).

The Program Coordinator will evaluate the hazards and areas of concern in buildings and common areas in determining the location of AED's and will do so in consultation with the University Safety Committee.

AEDs are also available for the use of the following specialized departments:

- I. Health Services Center has an AED and staff are trained in AED/CPR.
- II. University Police vehicles have AED and Police staff are trained in AED/CPR.
- III. Athletic Department staff carry AEDs for sporting events and these individuals are trained in AED/CPR.
- IV. Campus recreation staff have AEDs available for recreational activities, intramurals, and club sports.

### **7.3 NOTIFICATION OF LOCAL EMS**

Local EMS providers (Lancaster County EMS and Blue Rock Fire Rescue) have been notified of the existence, use, and location of AEDs on the Millersville University campus. EMS providers offer valuable assistance in reviewing any use of an AED. Informing EMS providers of the locations of AEDs in campus buildings speeds up response time and avoids confusion. When AED locations change or new units installed, the Program Coordinator will make notification to the local EMS and Fire Department agencies.

## **8.0 ADMINISTRATION**

### **8.1 INSPECTION**

All campus AED's will be inspected by Facilities and/or EHS on an annual basis.

The inspection will consist of the following items:

- I. Verification that the Status Indicator displays an illuminated green check.
  - Illuminated green check mark indicates unit passed its last self-test and is ready for use.
  - Illuminated "X" indicates unit has failed its self-test and is not ready for use.
- II. Verification that the defibrillator pads have not exceeded the expiration date indicated on the packaging.
- III. Initiation of manual self-test. The self-test is initiated by holding the power button for 5 seconds and will verify the following functions:
  - Battery Capacity: Verifies that the battery usage indicator shows adequate battery capacity remaining.
  - Defibrillation Electrodes Connection: Verifies that the defibrillation electrodes are properly pre-connected to the device.
  - ECG Circuitry: Verifies that the ECG signal acquisition and processing electronics are functional.
  - Defibrillator Charge and Discharge Circuitry: Verifies that the device's defibrillator electronics are functional and can charge and discharge at 200 joules.
  - Microprocessor Hardware/Software: Verifies proper function of the AED Plus microprocessor electronics and the integrity of its software.
  - CPR Circuitry and Sensor: Verifies that CPR monitoring and compression depth detection are functional.
  - Audio Circuitry: Verifies that voice prompts are functional.
  - Display: Verifies that visual indicators are functional
- IV. Confirmation that the location and serial number of the unit corresponds with the information on the AED spreadsheet
- V. Exterior condition of the AED and the condition and availability of supplies.
- VI. Condition of the wall cabinet and signage.

### **8.2 MAINTENANCE**

Replacement of parts and accessories (batteries, electrode pads, scissors, gloves,

etc.) will be managed by the Program Coordinator as needed and when the manufacturer recommends routine replacement of AED components.

If the AED is used, the unit will be taken out of service until the cardiac event information (heart rhythm and device data) is retrieved for review by EMS and University Health Services professionals. In addition, an inspection will be conducted to ensure the unit is working properly and all necessary equipment is replenished. The unit will be cleaned as prescribed by the manufacturer and the batteries and defibrillation pads will automatically be replaced.

Reference the Zoll AED Plus Administrator's Guide for more specific information regarding inspection, maintenance, or troubleshooting  
**(Attachment B)**

## **9.0 REFERENCES**

Avive, AED State Laws

FDA.gov, Automated External Defibrillators

The Mayo Clinic, Sudden Cardiac Arrest

Slippery Rock AED Plan

Zoll AED Plus Administrator's Guide

## Attachment A: AED Inspection and Maintenance Spreadsheet (COPY)

Building	Location	Serial #	Date Inspected	Adults Pads	Exp. Date	Pass/Fail	New Battery Date	Comments
Gerhart Hall	1st fl E Fred. st entrance	X08F157983	1/11/2023	yes		FAIL		Batteries & Pads
Alumi House	1st flr kitchen/break room	X08F157958	1/11/2023	yes	May 2024	Pass		
Luek Hall	1st flr.	X10C4444726	1/11/2023	yes	May 2024	Pass		
SMC	1st flr. - Bookstore	X11D496806	1/11/2023	yes	May 2024	Pass		
McNairy	1st flr. front desk	X08F157749	1/11/2023	yes	May 2024	Pass		
Palmer	1st flr. hallway by break room	X08F157712	1/11/2023	yes	May 2024	Pass		
Pucillo Gym	1st flr. hallway pool side	X08F157745	1/11/2023	yes	May 2024	Pass		
Dilworth Building	1st flr. HR entrance	X08F157812	1/11/2023	yes	May 2024	Pass		
Stayer Ed.	1st flr. in lobby	X10C444480	1/11/2023	yes	May 2024	Pass		
Ware Center	1st flr. in lobby	X10H464700	1/12/2023	yes	May 2024	Pass		
Gordinier Dining	1st flr. lookout entrance	X08F157827	1/11/2023	yes	May 2024	Pass		
Bard Hall	1st flr. main entrance	X08F157953	1/11/2023	yes	May 2024	Pass		
Boyer Building	1st flr. main entrance	X08E155853	1/11/2023	yes	May 2024	Pass		
Briedenstine Hall	1st flr. main entrance	X08F157713	1/11/2023	yes	May 2024	Pass		
Carpenter/Trout	1st flr. main entrance	X08F157693	1/11/2023	yes	May 2024	Pass		
Chryst Hall	1st flr. main entrance	X10C444479	1/11/2023	yes	May 2024	Pass		
Dutcher Hall	1st flr. main entrance	X08E157857	1/11/2023	yes	May 2024	Pass		
Hash/Bassler Hall	1st flr. main entrance	X10C444468	1/11/2023	yes	May 2024	Pass		
Lehigh Hall	1st flr. main entrance	X08E157988	1/11/2023	yes	May 2024	Pass		
Osburn	1st flr. main entrance	X08F156645	1/11/2023	yes	May 2024	Pass		
Tanger House	1st flr. main entrance	X08F157986	1/11/2023	yes	May 2024	Pass		
Brooks Gym	1st flr. main gym	X08F157708		yes	May 2024	Pass		
Jefferson Hall	1st flr. near vending area	X08F156761	1/11/2023	yes	May 2024	Pass		
Wickersham	1st flr. near vending area	X10C444476	1/11/2023	yes	May 2024	Pass		
Gordinier Dining	1st flr. stairwell to conf rms	X08F157905	1/11/2023	yes	May 2024	Pass		
Witmer Health Serv.	1st flr. treatment room	AA08D010276	1/11/2023	yes	May 2024	Pass		
Beimsderfer Ex Cen	1st. flr. kitchen	X08E157675	1/11/2023	yes	May 2024	Pass		
Gordinier Dining	2nd floor - Upper Deck - Adr	X08F157708	1/11/2023	yes	May 2024	Pass		
Stayer Ed.	2nd flr.	X10C444478	1/11/2023	yes	May 2024	Pass		
Lyle Hall	2nd flr. by elevator	X08F157683	1/11/2023	yes	May 2024	Pass		

McComsey Hall	2nd flr. by Myers Aud.	X10C444483	1/11/2023	yes	May 2024	Pass		
McComsey Hall	2nd flr. by stairs exit door	X10C444477	1/11/2023	yes	May 2024	Pass		
Caputo/Roddy	2nd flr. stairwell to biology	X08F157645	1/11/2023	yes	May 2024	Pass		
McNairy	3rd flr. by elevator	X08F157834	1/11/2023	yes	May 2024	Pass		
Ware Center	3rd flr. by elevator	X10H464300	1/12/2023	yes	May 2024	Pass		
Caputo/Roddy	3rd flr. student lounge	X08F157589	1/11/2023	yes	May 2024	Pass		
East Village	A Lobby - behind desk	X08F157650	1/11/2023	yes	May 2024	Pass		
West Village	A Lobby - behind desk	X08J175664	1/11/2023	yes	May 2024	Pass		
South Village	A/B Elevator Lobby	X08F157780	1/11/2023	yes	May 2024	Pass		
Beimesderfer Stadium	Athletic Training Room	X08F157687	1/11/2023	yes	May 2024	FAIL		Batteries & Pads
Pucillo Gym	Athletic Training Room	X08E157113	1/11/2023	yes	May 2024	Pass		
Pucillo Gym	Athletic Training Room	X08F157870	1/11/2023	yes	May 2024	Pass		
Pucillo Gym	Athletic Training Room	X08F157688	1/11/2023	yes	May 2024	Pass		
Winter Center	atrium entrance	X08F157659	1/11/2023	yes	May 2024	Pass		
East Village	B Lobby - behind desk	X11H513301	1/11/2023	yes	May 2024	Pass		
West Village	B Lobby - behind desk	X08F157686	1/11/2023	yes	May 2024	Pass		
Brossman Hall	by exit near elevator	X10C444475	1/11/2023	yes	May 2024	Pass		
South Village	C/D Elevator Lobby	X08F157962	1/11/2023	yes	May 2024	Pass		
MUPD	Car # 1 - 44185							
MUPD	Car # 2 - 31986 - Maria			yes				Need to order
MUPD	Car # 3 - 34983 - Unmarked							Need to order
MUPD	Car # 4 - 34929			yes				Need to order
MUPD	Car # 5 - 31957	X08F157647	1/11/2023	yes	May 2024	Pass		
MUPD	Car # 6 - 32192	X08E157409	1/11/2023	yes	May 2024	Pass		
MUPD	Car # 7 - 42436 - F150	X08F156827	1/11/2023	yes	May 2024	Pass		Have to confirm
SMC Campus Rec	Director - Allison Yarrow							Need to order
SMC	Fitness Center - by steps	X11H513248	1/11/2023	yes	May 2024	Pass		
SMC	ground flr - rm 24 entrance	X11F506304	1/11/2023	yes	May 2024	Pass		
Caputo/Roddy	ground flr. cyber café	X08F157696	1/11/2023	yes	May 2024	Pass		
Lyle Hall	ground flr. dining entrance	X08F157684	1/11/2023	yes	May 2024	Pass		
Lombardo	Main Lobby Entrance	X19I953087	1/11/2023	yes	May 2024	Pass		
Lebanon House	parking office lobby	X07F157722	1/11/2023	yes	May 2024	Pass		

