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Occupational Health Programs Manual – Chapter 18

Automated External Defibrillator (AED)

Approved by: QS/Chief, Safety and Health Division

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Chapter 18—AUTOMATED EXTERNAL DEFIBRILLATOR (AED) PROGRAM

NOTE: The current version of this chapter is maintained and approved by the Safety and Health Division (SHeD). The last revision date of this chapter was July 2024. The current version is located on the Glenn Research Center (GRC) BMS Library. Approved by Chief of Safety and Health Division.

1.0 PURPOSE

1.1 The purpose of this chapter is to establish the guidelines by which GRC shall establish an Automated External Defibrillator (AED) Program. The program is to develop a process that will result in a well-organized and effective emergency response plan for cardiac arrest victims. The Office of the Chief Health and Medical Officer (OCHMO) advocates the use of AEDs in conjunction with cardiopulmonary resuscitation (CPR) and rapid entry into the community emergency medical system (EMS) at all NASA Centers. The development and implementation of a Center-wide AED Program is a requirement for each NASA Center and facility.

1.2 In this chapter, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall". The term "may" denotes a discretionary privilege or permission, "can" denotes statements of possibility or capability, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

2.0 APPLICABILITY

This chapter establishes procedures and practices for those personnel at Lewis Field (LF) and Glenn Research Center Neil A. Armstrong Test Facility (GRC-ATF) as it applies to the use of AEDs. The Federal requirements for AEDs were established by the Food and Drug Administration (FDA), and The American Heart Association (AHA) established the guidance for the Public Access Defibrillator (PAD) Program in compliance with Federal regulations. The Department of Health and Human Services (HHS) and the General Services Administration (GSA) developed "Guidelines for PAD Programs in Federal Facilities," published in the Federal Register on August 14, 2009.

3.0 BACKGROUND

Coronary heart disease is the leading cause of death in the United States, and the AHA estimates that 500,000 Americans die each year from sudden cardiac arrest as a result of this disease. This equates to one in four deaths. The Occupational Health Branch (OHB) supports the use of AEDs at GRC to provide a timely response to victims of sudden cardiac arrest caused by ventricular fibrillation. Ventricular fibrillation is a treatable condition and is potentially survivable when immediate treatment is provided. The purpose and goal of this program are to provide a timely emergency response and treatment for sudden cardiac arrest while ensuring the rapid transfer of the individual into the community EMS. The ability to respond quickly increases the potential survival for the individual and provides the opportunity for the best possible medical outcome.

4.0 POLICY

4.1 GRC shall adhere to the AED requirements issued by NASA Headquarters in NASA Procedural Requirements (NPR) 1800.1, NASA Occupational Health Program Procedures. This adherence requires that an AED Program be established at each NASA Center. Thanks to advances in AED technology, the lifesaving shock can now be safely and effectively administered by nonmedical individuals, greatly increasing the victim's chances of survival. GRC has invested in a program that will make AEDs readily accessible in our workplace.

4.2 Compliance with the responsibilities and requirements of this chapter are measured and verified through the use of programmatic self-assessments, regulatory, and agency audits and internal field inspections.

5.0 RESPONSIBILITIES

5.1 Chief of OHB

The Chief of OHB shall designate a program lead to coordinate activities and provide operational oversight of the AED program for LF and GRC-ATF and ensure that monthly inspections/ maintenance checks for AEDs are documented at both LF and GRC-ATF. The Chief of OHB will also serve as or assign a delegate to the AED Authorization Committee.

5.2 AED Program Lead

The AED Program Lead shall:

a. Coordinate program activities with the contracting officer of the contractor security force who resides in another organization (Center Operations Directorate).

b. Purchase, install, and maintain AEDs and their components.

c. Maintain AED devices to meet regulatory compliance, the standards of the manufacturer, the FDA, and programmatic standards of AHA.

d. Retain copies of all AED equipment inspection, maintenance, and testing logs.

e. Conduct monthly inspections of AEDs to ensure proper operation and readiness.

f. Maintain a database to inventory and document maintenance and inspection of AEDs and their components.

g. Participate in drills, and post-incident briefings.

h. Ensure that appropriate written documentation be completed after an incident.

i. Maintain a record of equipment malfunction incidents.

j. Perform an Annual Program Review.

5.3 Physician, Occupational Medicine Services (OMS)

The OMS Physician shall:

a. Review the AED policy on an annual basis and makes recommendations to reflect programmatic changes and current guidance.

b. Ensure compliance with the program's processes and protocols.

Serve as or assign a delegate to the AED Authorization Committee.

5.4 Protective Services Office (PSO)

The Chief of PSO shall:

a. Provide verbal notification to the AED Program lead following AED usage for emergency response.

b. Provide written follow-up notification, including case outcome to the AED Program lead regarding AED usage.

c. Serve as or assign a delegate to the AED Authorization Committee

5.5 Strategic Advisory Services Division (SASD)

The SASD Division shall:

a. Maintain System for Administration, Training, and Education Resources for NASA (SATERN) records for employees who have completed AED training.

b. Coordinate with the AED Program lead to ensure the AED training is provided.

5.6 Facilities Division

The Facilities Division shall include consideration for the addition and installation of alarmed AED units in new buildings in coordination with the AED program lead.

5.7 Supervisors

The supervisors at LF and GRC-ATF shall:

a. Support the implementation of the AED policy.

b. Support employees who are involved in the AED Program.

c. Report equipment malfunctions to the AED Program lead.

5.8 Employees Serving as AED Responders

The employees at LF and GRC-ATF shall participate in all required training, as required in this policy. The AED Responders shall:

a. Follow GRC's AED response protocol and guidelines.

b. Remain current on certifications.

6.0 REQUIREMENTS

6.1 Training Requirements for Trained AED Responders (NPR 1800.1)

a. The two recommended training courses are offered through the AHA and the American Red Cross

(1) The AHA offers both Heartsaver AED and Basic Life Support courses. Certification through the AHA is valid for two years.

(2) The American Red Cross offers a CPR/AED course. Certification through the Red Cross is valid for two years.

b. Unless an employee's job description specifically requires them to use an AED, training is voluntary.

c. Jobs that require AED training include (but are not limited to):

(1) First Responders

(2) Medical Clinic Staff

(3) Fitness Center Staff

(4) Daycare Staff

(5) Employees responsible for the safe release of shock victims and responding to the associated medical emergencies.

6.2 Location of AEDs (NPR 1800.1)

6.2.1 The AEDs are located:

a. Or utilized in areas with high population density and in work areas with a potential risk of sudden cardiac death. The AEDs are located such that expected response time upon discovering a cardiac arrest victim to when the AED is at the side of the victim is three minutes. The AEDs are also located in high visibility/high traffic flow areas so that individuals become accustomed to seeing them and knowing they are there.

a. In alarmed enclosures so that when one is needed, emergency dispatch is notified right away, and EMS can be contacted and enroute immediately. This rapid response ensures the best possible outcome for the victim.

6.2.2 The AED cabinet shall contain:

a. AED process and protocols

b. Necessary supplies for the unit

6.3 Maintenance of AEDs (NPR 1800.1)

6.3.1 Periodic

a. Monthly performance and logistics checks by the AED Program lead are performed on AEDs throughout LF and GRC-ATF.

b. The intent of these inspections is to ensure that the AED batteries are functioning properly, that the AED pads are present and within their expiration dates, and that cabinet alarms, as appropriate, are functioning as intended.

c. The OHB AED Program lead shall perform the monthly checks and update the AED database. As a result of this inspection, any expired or malfunctioning AED equipment, such as AED pads or batteries, will be ordered.

6.3.2 Post-incident

a. After every emergency response, equipment shall be replaced, supplies restocked, and a written checklist completed. The AED data base will be updated, and supplies ordered, as required.

b. The Chief Health and Medical Officer must be notified immediately if there are any issues associated with the proper operation of the authorized AEDs at the Center.

6.4 Listing of AED Locations (NPR 1800.1)

The actual AED locations are not contained within this document but can be found at the following Web site: https://nasa.sharepoint.com/sites/grc-smad/SitePages/Medical-Fitness.aspx#automatic-external-defibrillator-%28aed%29

6.5 Procurement and Installation of AEDs (NPR 1800.1)

6.5.1 Glenn Research Center

Any organization that desires to purchase an AED for installation at LF and GRC-ATF using organizational funds must first submit a GRC 10006 E-form, Assessment Questionnaire for AED Placement. The AED program lead will review and conduct a qualitative risk assessment. The AED Authorization Committee consisting of OHB, OMS, and OPS delegates will review the risk assessment and determine if AED Placement is recommended. Upon approval, the requesting organization shall factor in the costs of purchasing the AED, the AED cabinet, the installation of the cabinet, and the hardwiring of the cabinet so that when accessed an audible alarm is annunciated at emergency dispatch.

6.5.2 Mobile Use

Any organization that resides at LF or GRC-ATF and desires to purchase an AED for mobile use in a security force vehicle, shall contact the AED Program lead to initiate the purchase.

6.6 Annual Program Review

6.6.1 The review shall include the following elements:

a. A review of the chapter for any update needs

b. Compliance of current programmatic standards

c. Adequacy and placement of AEDs

d. The AED responder's status

e. Updated to AED protocols

f. Equipment operation/readiness check

g. Review of any incidents and lessons learned

h. Equipment stock levels

i. Discussion of drills involving AEDs and lessons learned

j. Monthly inspections

k. Maintenance records

l. A current list of AED locations that highlights new AEDs

m. Training records

n. A discussion of the rationale for new AEDs

6.6.2 The Annual review will be included in SHeD's Annual Programmatic Assessment Report.

7.0 RECORDS

All records related to this program shall be maintained by the program lead in accordance with BMS requirements.

a. The SASD Training Office maintains records for civil service personnel

b. Employee's contractor management maintains records for contractor personnel

7.1 AED Responders

Training of AED responders is tracked and recorded in the Agency online data base, SATERN.

7.2 Maintenance and Performance (Malfunctioning and Other Abnormalities) Records for AEDs

a. The OHB maintenance and performance records are retained for five years.

b. After using an AED, the AED Program lead will follow the manufacturer's instructions for disinfection of the unit, as well as how to download incident related information from the device's data card prior to placing the AED back into service.

7.3 Required Site Records

The following records must be maintained at the installed AED site:

a. Guidelines for use

b. Manufacturer's instructions

7.4 Incident Response Reports (When AED Involved)

a. The PSO is responsible for verbally notifying the GRC physician and AED Program lead regarding AED usage for emergency response and then forwarding all written documentation within one business day of the incident.

b. Documentation of emergency responses must be retained indefinitely.

8.0 REFERENCES

Document Number	Document Name
NPR 1800.1	NASA Occupational Health Program Procedure

APPENDIX A. DEFINITIONS

Automated External Defibrillator. A computerized medical device heart monitor and defibrillator that analyzes heart rhythm to detect cardiac arrest and delivers an electric shock to the heart, if necessary.

Cardiopulmonary Resuscitation. Life-saving procedure consisting of mouth-to-mouth respiration and chest compression. CPR allows oxygenated blood to circulate to vital organs, such as the brain and heart. CPR can keep a person alive in the short term until more advanced procedures (such as defibrillation) can be initiated.

APPENDIX B. ACRONYMS

AED	Automated External Defibrillator
AHA	American Heart Association
BMS	Business Management System
CPR	Cardiopulmonary Resuscitation
EMS	Emergency Medical System
FDA	Food and Drug Administration
GRC	Glenn Research Center
GRC-ATF	Neil A. Armstrong Test Facility
GSA	General Services Administration
SASD	Strategic Advisory Service Division
HHS	Department of Health and Human Services
LF	Lewis Field
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
OCHMO	Office of the Chief, Health and Medical Officer
OHB	Occupational Health Branch
OMS	Occupational Medicine Services
ORC	Ohio Revised Code
PAD	Public Access Defibrillator
PSO	Protective Services Office
SATERN	System for Administration, Training, and Education Resources for NASA
SHeD	Safety and Health Division

Change History

Revision	Effective Date	Expiration Date	GRC25, Change Request #	Description
B	8/22/2012	8/31/2017	255	Biannual Review
Change 1	4/14/2014	8/31/2017	N/A	Administrative change to add front cover and change history log to comply with NPR 1400.1, added "The GRC shall follow the requirements of NPR 1800.1C" in Section 4.0 Policy.
Change 2	9/30/2015	8/31/2017	N/A	Administrative change to remove hyperlinks.
C	7/3/2018	7/3/2023	18-010	Updating the chapter to maintain programmatic standards and compliance to NASA 1800.1D AED Program requirements. The update includes a new element as part of a corrective action plan from a 2017 OCHMO review finding.
Change 1	4/26/2021	7/3/2023		Administrative changes including updated reference to 8715.1 and Plum Brook Station to Neil A. Armstrong Test Facility
D	4/12/2023	4/12/2028	22-016	Administrative changes to renewal. Changed Plum Brook Station (PBS) to GRC Neil A. Armstrong Test Facility (GRC-ATF) throughout the chapter; Section 6.2 Location of Automated External Defibrillators because the operator's manual is not placed in the cabinet with the AED. The AED unit will verbally walk you through how to operate itself. Therefore, the AED process and protocols are listed on the cabinet and the AED supply bag is placed inside the cabinet with the AED unit. Section 6.4 Listing of Automated External Defibrillator by updating the link to where the AED locations can be found. The website converted from the Code QS website to the SharePoint Web site; Section 6.6 Annual Program Review by removing the requirement of keeping a list of those who are trained on AED use as that is tracked by the training office through SATERN

Revision	Effective Date	Expiration Date	GRC25, Change Request #	Description
E	7/17/2024	7/17/2029	CR05	OHPM CH 18 AED is being updated to reflect new methods for reviewing and approving AED locations. - Changes were made to Section 5.1: The Chief of OHB will serve as or assign a delegate to the AED Authorization Committee. - Changes were made to Section 5.3 Physician, Occupational Medicine Services: The Occupational Medicine Physician will serve as or assign a delegate to the AED Authorization Committee and provide program guidance. Formatting changes were also made. - Changes were made to Section 5.4 Office of Protective Services (OPS): The OPS will serve as or assign a delegate to the AED Authorization Committee. Small additional changes include re-wording other responsibilities to fit format of chapter. - Changes were made to Section 6.5.1 Glenn Research Center to outline the new process for the procurement and installation of AEDs. The GRC10006 E-Form (Assessment Questionnaire for AED Placement) is linked into this section and will be submitted by individuals / organizations requesting AED placement. Upon review, the AED program lead will conduct a qualitative risk assessment for the prospective location. The findings will be utilized by the AED Authorization Committee consisting of delegates from the Occupational Health Branch, Occupational Medicine Services and Office of Protective Services to determine if AED placement is recommended. - Changes were made to Appendix B. Acronyms: Added OMS (Occupational Medicine Services)

***Include all information for each revision. Do not remove old revision data. Add new rows to table when space runs out by pressing the tab key in the last row, far right column.*