

NASA Occupational Health Program Guidelines for Implementing a Center Automatic External Defibrillator Program 2002

Introduction

Coronary heart disease is the leading cause of death in the United States. The American Heart Association estimates that 250,000 Americans die each year from sudden cardiac death as a result of coronary heart disease. Sudden cardiac death, resulting from a dysrhythmia, most commonly referred to as ventricular fibrillation, is a treatable condition and potentially survivable, when prompt action is taken.

Since most cardiac arrests occur outside the hospital setting, the quick response of emergency medical services (EMS) personnel in a community can have significant impact on survival rates. With the development of Automatic External Defibrillators (AED), early recognition and correction of the dysrhythmia by lay rescuers can significantly improve the outcome of cardiac arrest. While Cardiopulmonary Resuscitation (CPR) can prolong the chances of survival, it cannot reverse Sudden Cardiac Death.

The NASA Occupational Health Program (OHP) encourages the use of AED's in conjunction with prompt CPR and rapid entry into the community EMS for victims of SCD.

Roles and Responsibilities

Center Medical Director

The Medical Director of the Center OHP facility should be designated as the AED Program Director. The Director has the authority to manage the Program and responsibility for implementation. Program responsibilities include the following:

- Maintaining written AED process and protocols,
- Ensuring compliance with the Program's process and protocols,
- Integrating the Program into the community EMS,
- Ensuring training for team members,

- Ensuring critical incident debriefing for team members,
- Ensuring on-going Program evaluation, and
- Reporting equipment malfunction incidents to Center safety for, transmission to Agency Safety, Agency OHP, and the Food and Drug Administration Medical Device Reporting.

AED Program Coordinator

The Center Medical Director shall designate an AED Program Coordinator to coordinate activities and provide operational oversight of the Program. The Coordinator is responsible for the following:

- Maintaining equipment according to manufacturers' recommendations,
- Maintaining an adequate inventory of supplies,
- Creating and maintaining a list of trained responders,
- Coordinating training programs, drills, and post-incident debriefings,
- Maintaining current training records, and
- Ensuring appropriate written documentation is completed after an incident.

AED Program Response Team

AED users are responsible for completing the designated training, participating in drills, and following the established process and protocols.

Eligibility

Personnel recommended as team members to support the AED Program are physicians, nurses, Center fitness staff, emergency medical technicians, first responders and fire/rescue and security personnel. The Center Medical Director must approve all potential team members prior to assignment and training.

Training Recommendations

All team members are required to successfully complete AED and Basic Life Support training. The three recommended training sources are the American Heart Association, the American Red Cross and the AED manufacturer's training. The American Heart Association offers both Heartsaver AED and Basic Life Support courses. The American Red Cross offers a CPR/AED course. Training for the Basic Life Support course must be completed

annually, and AED training must be completed quarterly. When State training requirements differ from NASA recommendations, the more stringent requirements apply.

Quarterly drills, scheduled by the AED Program Coordinator, must be conducted to provide team members with hands on practice, using the established emergency procedures and evaluating their response. The AED Program Medical Director is responsible for evaluating drills, emergency usage and implementing improvements to the emergency process and protocols as part of the on-going quality assurance program.

Center AED Emergency Response Plan

Each Center must assess the need for an AED Program. Factors to consider in the assessment process include employee demographics, evaluation of current support of Center EMS, ease of access to the community EMS, and cost. If a need is apparent, the Center Medical Director will prepare a Center AED Emergency Response Plan. The plan must be signed and reviewed annually by the Center Medical Director. A copy of the plan will be given to the Manager, NASA Occupational Health Program (OHP).

AED's must be located or utilized in areas with high population density and in work areas with potential risk of sudden cardiac death. The AED's should be placed in a readily accessible and secure location. The written AED process and protocols, operator's manual and supplies should be placed with the AED unit. After every emergency response, equipment should be replaced in its designated location, supplies restocked and a written checklist completed.

AED's must be checked daily to ensure they are in their designated location along with supplies and the Center's plan. A written checklist should be signed and dated daily, following the inspection by the AED Program Coordinator or a designated representative. Other equipment checks recommended by the AED manufacturer must also be documented in the same manner. Written records of any routine or emergency maintenance of AED's must be maintained for 2 years. The Center Medical Director must be notified immediately if any problems are encountered.

Before implementing the plan, written process and protocols must be in place. The Center Medical Director must review the AED process and protocol with local EMS personnel responsible for providing support to the Center. The EMS should be notified of the location of the AED's at the Center and be familiar with the AED Emergency Response Plan. Integration of the local EMS into the Center's plan will ensure the timely transfer to advanced life support and transport to definitive care.

The procedures manual must include a list of team members with telephone and pager numbers, American Heart Association's Chain of Survival guidelines and AED treatment algorithm, procedures for usage, operator's manual, any AED equipment incident reports, manufacturer's updates and alerts, AED locations, maintenance records, inventory of supplies, and checklist for AED usage and required supplies.

AED Program Documentation

Written documentation must be completed immediately following each response involving the use of the AED. The Center Medical Director must be notified verbally, immediately following the incident and should receive the written documentation prior to the close of business on the day of the incident, but no later than the beginning of the next business day. The Center Medical Director must retain the original written record of the response and send a copy to the Center Occupational Health facility. The Center Medical Director is also responsible for notifying the Manager, OHP verbally (as soon as possible) and forwarding written documentation including the case outcome within 1 business day of the emergency response.

The Program Coordinator must maintain written records of training for team members and drills that are conducted. Written documentation must also be maintained for daily, weekly and post-use checklists, incident response, and response outcomes. All documentation on training, maintenance procedures and drills must be retained for 2 years. Equipment incident reports will be maintained according to Center retention policy. Documentation of emergency responses must be retained indefinitely.

Emergency Response Debriefing

An Emergency Response debriefing must follow any emergency response to review the events that occurred, allow team members to talk through the event, and to maximize the lessons learned. The opportunity to talk through the event with others after a crisis may be needed for later situation resolution. A professional counselor from the Center's Employee Assistance Program must assist the debriefing.

Quality Assurance

To ensure on going quality assurance at each Center, the Medical Director will prepare evaluations of the Center AED Program including the effectiveness of the following:

- Training program,
- Quarterly drills and team member feedback,
- Performance and maintenance of AED equipment,
- Emergency responses,
- Identification and implementation of process improvements, and
- Documentation of outcome measures for treated victims of cardiac arrest.

To ensure the quality of the AED Programs throughout NASA, the OHP Principal Center Office will accomplish the following:

- Evaluate all Center responses and provide feedback,
- Monitor the emergency response outcomes for the Agency, and
- Perform program audits.