

# Automated External Defibrillators

## GENERAL DISCUSSION

Bring to the meeting an Automated External Defibrillator (AED), that may be used in various departments of the hospital, or the emergency room.

Did you know that fibrillation is a condition in which the heart muscle "twitches" irregularly and rapidly instead of beating in its normal regular rhythmic contractions? Since the heart cannot pump blood effectively during fibrillation, cardiac arrest can occur. Victims often die quickly unless the fibrillation is controlled within 5-7 minutes.

The process used to electrically reset the heart, stop fibrillation, and allow the resumption of a normal rhythm is called defibrillation. This medical technology has existed for some time, but has been possible only with the educated interpretation of the heartbeat as shown in the cardiac waveform (ECG/EKG), and the manual use of a defibrillator (internally or externally) by a physician or by specially trained advanced life support personnel.

## Some Statistics about Automated External Defibrillators

Did you know?

- That sudden cardiac arrest is one of the leading causes of death in the U.S., taking more than 250,000 lives each year?
- That for each minute that passes after cardiac arrest there is a 10% reduction in the chance of survival?
- That ventricular fibrillation is the most common arrhythmia that causes cardiac arrest?
- That there is a new device that allows rescuers and bystanders to treat ventricular fibrillation?
- That the American Heart Association estimates that, with increased availability of these new devices, 50,000 or more of the annual cardiac arrest deaths could be prevented.

## About Automated External Defibrillators

With the development of fast, high capacity microprocessors, a new automated form of defibrillator has become available. Called an Automated External Defibrillator (AED), this hybrid device applies a sophisticated algorithm to analyze the cardiac waveform and detects the state of fibrillation, then recommends a defibrillation counter shock, and actually delivers the counter shock through electrode pads applied to the victim.

Combined with early activation of the emergency medical system and effective cardiopulmonary resuscitation (CPR), the AED is a powerful new tool to increase the survivability of cardiac arrest victims. The placement and use of Automated External Defibrillators should be used only in appropriate circumstances, provided that state law permits their use and the following:

- The individual using the AED has been suitably trained;
- The AED has been maintained according to the manufacturer's requirements; and
- Appropriate CPR and EMS resources are available and utilized.

### **Using Automated External Defibrillators**

The use of an AED generally involves placing two self-adhesive pads on the victim's chest and then activating the unit. The AED unit will prompt the rescuer for any additional actions that are required. These prompts may be communicated through a screen display and/or through audio instruction from the AED.

Although the actual use of an AED is extremely simple, it requires a small amount of special training. The American Red Cross, The American Heart Association, and many state EMS training programs now offer training and certification in the use of AEDs. Training requirements to use an AED vary from state to state, so it's best to check with your state's health department.

### **Acquiring Automated External Defibrillators**

Since an AED is a medical device, a physician must order it, and a physician must authorize its use. To date, more than 100,000 AEDs have been purchased and placed in workplaces, transportation systems, and places of public assembly. In addition:

- The Federal Cardiac Arrest Survival Act (HR 2498) was signed into law on November 15, 2000. It mandates the development of a plan for AED placement in all federal buildings.
- Although many airlines have already voluntarily complied, the Federal Aviation Administration has proposed rulemaking to require AEDs on all aircraft.

The cost to acquire an approved Automated External Defibrillator is currently between \$3000 and \$5000. However, as production increases to meet demand, it is likely that these prices will drop over time. The costs associated with maintenance are unknown, as this technology is so new.

## **Liability Issues**

All states had approved extension of existing "Good Samaritan" laws to cover the layperson or rescuer who uses an AED. Liability for medical directors and AED trainers was not universally covered; however, the Federal Cardiac Arrest Survival Act extends federal immunity for civil liability to the user, the acquirer, and the physician. This protection is conditioned on:

1. Notification of the EMS provider in the location of the AED;
2. Appropriate maintenance of the device; and
3. Appropriate training of employees and agents.

Like virtually all "Good Samaritan" statutes, the Federal Cardiac Arrest Survival Act withholds protection in instances of gross negligence, willful, or wanton misconduct.

## **GENERAL SAFETY REVIEW**

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards.

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

## **ENDING THE MEETING**

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up.

Do you have any Safety Recommendations?

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Do you have any Job Specific Topics you would like us to discuss?

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**Comments**

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