



# **Saving Sudden Cardiac Arrest Victims in the Workplace**

**Automated External Defibrillators**

OSHA 3185-09N 2003

### **Improving survival from sudden cardiac arrest.**

There are 220,000 victims of sudden cardiac arrest per year in the United States; about 10,000 sudden cardiac arrests occur at work.

Waiting for the arrival of emergency medical system personnel results in only 5-7% survival.

Studies with immediate defibrillation have shown up to 60% survival one year after sudden cardiac arrest.

### **Automated external defibrillators**

An automated external defibrillator (AED) is a medical device designed to analyze the heart rhythm and deliver an electric shock to victims of ventricular fibrillation to restore the heart rhythm to normal. Ventricular fibrillation is the uncoordinated heart rhythm most often responsible for sudden cardiac arrest.

### **Sudden cardiac arrest**

Sudden cardiac arrest occurs when ventricular fibrillation takes place or when the heart stops beating altogether. Without medical attention, the victim collapses, loses consciousness, becomes unresponsive, and dies. Many victims have no prior history of heart disease and are stricken without warning.

### **Causes of sudden cardiac arrest**

- Heart attack
- Electrocutation
- Asphyxiation (loss of consciousness and death caused by inadequate oxygen in the work environment, such as in a confined space).

### **Reasons for AEDs in the workplace**

- Workers may suffer sudden cardiac arrest while on the job.
- Onsite AEDs save precious treatment time, and can improve survival odds because they can be used before emergency medical service (EMS) personnel arrive.
- A heart rhythm in ventricular fibrillation may only be restored to normal by an electric shock.
- The AED is compact, lightweight, portable, battery operated, safe, and easy to use.

### **Placement of AEDs**

- AEDs should be conveniently installed to ensure response within 3-5 minutes.
- Areas where many people work closely together, such as assembly lines and office buildings.
- Close to a confined space.
- Areas where electric-powered devices are used.

- Outdoor worksites where lightning may occur.
- Health units where workers may seek treatment for heart attack symptoms.
- Company fitness units and cafeterias.
- Remote sites, such as off-shore drilling rigs, construction projects, marine vessels, power transmission lines, and energy pipe lines.

### **AED program cost**

AEDs cost \$1200-\$3000 per device.

Training, annual retraining, and administrative costs are additional.

### **AED training**

Your workers can easily be trained to:

- Recognize sudden cardiac arrest and notify EMS personnel,
- Perform cardiopulmonary resuscitation (CPR),
- Provide early defibrillation with an AED, and
- Care for the victim until EMS personnel arrive.

For more information, visit the OSHA website at [www.osha.gov](http://www.osha.gov) or the websites of the following organizations:

- American Heart Association
- American College of Occupational and Environmental Medicine
- American Red Cross
- Federal Occupational Health
- National Center for Early Defibrillation
- National Safety Council

## **SUCCESS STORIES**

### **From the American Heart Association**

- *A 41-year-old worker at a manufacturer of heating and air-conditioning systems suffered a sudden cardiac arrest at work. After three shocks and CPR he was revived within 4 minutes. Fortunately, his company had AEDs and trained responders. By the time EMS personnel arrived, he had been resuscitated and was moved to a hospital. The employee survived.*
- *A 62-year-old employee of a coatings, glass, and chemical manufacturer suffered a sudden cardiac arrest after walking up the stairs to her office. Employees in the next office heard her fall and notified the plant emergency response team. She was defibrillated and saved in less than 2 minutes. EMS personnel then arrived to transport her to the hospital. She sent a note to the company after her discharge from the hospital saying she had "no doubt that headquarters spent money wisely."*

- *An employee at an automobile manufacturer was working on the production line when he suddenly collapsed, lost consciousness, and stopped breathing. Plant security responded, and after two shocks with an AED, the employee's heart responded and his pulse returned. He's alive today thanks to the fast actions of his co-workers and the company's emergency response plan, which included AED installation and training.*

**From the National Institute for  
Occupational Safety and Health**

- *While standing on a fire escape during a building renovation, a 30-year-old construction worker was holding a metal pipe with both hands. The pipe contacted a high voltage line, and the worker instantly collapsed. About 4 minutes later, a rescue squad arrived and began CPR. Within 6 minutes the squad had defibrillated the worker. His heartbeat returned to normal and he was transported to a hospital. The worker regained consciousness and was discharged from the hospital within 2 weeks.*

**AEDS SAVE LIVES!**

These devices have a proven track record of saving lives in public places as well as in the workplace. They can do the same for you and your employees. Please consider installing AEDs in your workplace.

This informational booklet provides a general overview of a particular topic related to OSHA standards. It does not alter or determine compliance responsibilities in OSHA standards or the *Occupational Safety and Health Act of 1970*. Because interpretations and enforcement policy may change over time, you should consult current OSHA administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the Courts for additional guidance on OSHA compliance requirements.

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and Health Administration**

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[www.osha.gov](http://www.osha.gov)