Use of defibrillators at workplaces

Diseases of the heart and circulatory system account for about 191,000 deaths in the UK and an estimated 17 million worldwide each year.

Heart disease is common in the general population, including those of working age, and is the biggest cause of death in the UK. Every year, almost 30,000 individuals suffer from a cardiac arrest outside hospital in the UK.

Medical emergencies such as cardiac arrest can be life-threatening, so it’s sensible to consider what you would do if one of your employees or visitors suffered one. The chances of surviving a cardiac arrest are increased if emergency treatment is given as soon as possible.

What is cardiac arrest?

Cardiac arrest happens when the heart stops pumping blood around the body. As a result, the person becomes unconscious and can’t breathe normally. The most common cause of cardiac arrest is a disturbance in the heart rhythm called ventricular fibrillation. Ventricular fibrillation is dangerous because it cuts off blood supply to the vital organs, including the brain. It can be treated successfully by applying cardiopulmonary resuscitation, usually known as CPR, and by applying an electric shock to the chest with a procedure called defibrillation.

CPR can help to improve the person’s chance of survival. Defibrillation can increase the rate of survival to as high as 75 per cent. A fast response is very important. Call for medical help, and if the casualty is unconscious use a defibrillator if one is available or apply manual CPR to improve the chances of survival.

Defibrillation

Defibrillation is a process in which an electrical device called a defibrillator sends an electric shock to the casualty in order to restore the normal pumping action of the heart to start the blood circulation again.

Two thirds of cardiac arrests occur outside hospital. Unless defibrillation is performed within the first few minutes after a person suffers from a cardiac arrest, the chances of a successful and meaningful resuscitation becomes markedly reduced. For every minute that passes, the chance of reviving a person drops by almost 10 per cent. Almost half of casualties are resuscitated successfully when defibrillation is given within four minutes of a person collapsing.
What is a defibrillator?

A defibrillator is a portable computerised device that delivers an electric shock to the victim of cardiac arrest.

A semi-automatic defibrillator provides therapeutic and diagnostic functions and advises on the need for a shock, which has to be delivered by the operator. An Automated External Defibrillator (AED) is capable of interpreting a victim’s heart rhythm and automatically delivers an electric shock with minimal input from the operator.

An AED does not deliver a shock unless it detects the presence of a heart rhythm that requires defibrillation.

Legal background

There are no laws in force in the UK requiring employers to provide defibrillators for their workforce. However, IOSH, the British Heart Foundation and Resuscitation Council UK recommend the deployment of AEDs in the workplaces to save lives.

AEDs are very safe devices and it’s extremely unlikely that any liability will arise from using one in the workplace. There has been not a single case of an organisation being successfully sued in the UK following inappropriate use of an AED.

Operating an AED

AN AED is extremely easy to use – it is so simple that it can be done successfully even without any formal training. However, training is recommended to provide a level of confidence and a speedy response in emergency situations. Even so, the use of a defibrillator should not be restricted to a trained individual to preserve life as it can be used safely without having any previous training.

When an AED is switched on, it speaks in a computer-generated voice that guides the operator through the rest of the procedure. It prompts the operator to place a set of adhesive electrode pads on the casualty’s chest and then automatically analyses the victim’s heart rhythm to determine if a shock is required. The defibrillator automatically charges itself and tells the operator to press the button that delivers the shock. It also guides the operator when to begin chest compression and when to stop.
AED history

Defibrillators have been in use for many years and have undergone extensive clinical testing. They were developed in the late 1970s and have progressively become lighter, smaller and more reliable in their functions.

Initially they were used predominantly by emergency services staff and their use was regulated strictly. However, the restrictions became less stringent as their functionality improved and their importance became more apparent. They have become increasingly popular over the last few years and are now commonly found in many public places such as airports, railway stations, shopping centres, schools and in some office buildings. These can often be identified by the lightning bolt sign on the case.

Can an AED cause any harm?

An AED is extremely easy and safe to use both for the casualty and the operator – it does not shock a casualty who has not suffered from a cardiac arrest, and so is highly unlikely to cause any harm to the victim. Although it instructs the operator to stand clear when an electric shock is delivered to the casualty, an operator who remains in contact may get a small electric shock but it is extremely unlikely to be dangerous.

The number and location of defibrillators

To assess the number of defibrillators required in a workplace, consider factors such as size and age of the workforce, design and location of the workplace (staircase, escalators, distance from emergency services) and type of site (eg whether close to high voltage electricity). For an AED to be effective, it needs to be available for use within first three to four minutes of the person suffering from a cardiac arrest.

AEDs should be placed strategically and stored in locations that are easily accessible and should not be stored in locked cupboards which restrict access.

More information

IOSH has a wealth of work-related advice on a range of health issues including heart disease in our Occupational Health Toolkit. More information on defibrillators is available from the British Heart Foundation and the Resuscitation Council UK.