

APPENDIX B

FREQUENTLY ASKED QUESTIONS

Cardiac Arrest & The Use of AEDs'

Since February 2007, the National Defibrillator Programme has been the responsibility of the Ambulance Trusts and has been co-ordinated by the British Heart Foundation.

Introduction

What is a cardiac arrest?

Cardiac arrest means complete loss of the mechanical function of the heart. The heart stops beating, usually as a result of an abnormal heart rhythm called ventricular fibrillation. Cardiac arrest often results in the sudden collapse of the patient who has no pulse and is not breathing. Immediate mouth-to-mouth resuscitation and heart massage is needed until the arrival of the emergency services and possible defibrillation to restore the heart rhythm to normal.

What is a heart attack?

This occurs when one of the coronary arteries becomes blocked by the formation of a blood clot, depriving part of the heart muscle of the blood and oxygen it needs. This usually causes a crushing pain in the chest, which may spread to both arms, particularly the left, and up into the throat and jaw. If this does not go away within 15 minutes, help should be sought immediately by phoning 999 for an ambulance.

What is ventricular fibrillation (VF)?

The most common cause of sudden cardiac arrest is ventricular fibrillation - a rapid, chaotic, lethal rhythm of the heart. In this condition, the heart is unable to pump life-sustaining oxygen to the brain and other vital organs. Death occurs within minutes unless the normal rhythm is restored by defibrillation; defibrillation is the only treatment that can restart the heart and restore a normal heart rhythm in these circumstances.

Who is most at risk from ventricular fibrillation?

People may have an abnormal heart rhythm that leaves them more at risk of ventricular fibrillation. Most commonly, however, life threatening heart rhythms such as this are the result of a severe heart attack.

Defibrillation

What is defibrillation?

Although blood flow can be maintained and oxygenated with cardiac massage and mouth-to-mouth resuscitation, the only effective way to restore normal rhythm is to defibrillate by attaching two large electrodes to the patient's chest and by delivering an electrical shock.

What is a defibrillator and what does it do?

There are two types of defibrillator:

- **Manual defibrillators** - these have been used in hospitals and emergency centres for over 30 years. They usually also include an ECG monitor and other facilities, and can be used as temporary pacemakers and to correct less dangerous abnormal heart rhythms. Professional expertise is needed to interpret the heart rhythm and decide whether to change the defibrillator and deliver the shock.
- **Automated external defibrillators (AEDs)** - these have been introduced more recently. These semi-automatic defibrillators are small, safe, simple and lightweight with two pads that can be applied to the patient. The defibrillator guides the operator step-by-step, records and analyses the rhythm and instructs the user to deliver the shock using clear voice prompts and displayed messages. This minimises any risk of the patient being shocked inappropriately. Anyone trained in the use of these devices and in basic life support will be able to safely and effectively use an AED.

Where are AEDs used?

Since the mid-1990s, it has been recognised that suitably trained people may be well placed to use these defibrillators in the community. It is essential, however, that the person operating the defibrillator has a good up-to-date

knowledge of basic life support. Thorough and recent training in the use of the defibrillator and appropriate updated training sessions are essential.

Is defibrillation by non-medically trained individuals safe?

Defibrillation by people who have been appropriately trained, and are competent in the use of AEDs, is considered safe and effective. It is also supported by leading professional organisations, including the Resuscitation Council (UK), who published detailed guidelines on AED use in November 1998.

Why can't this sort of thing be left until the ambulance arrives?

Speed is vital: the quicker the shock is given after the victim collapses, the greater the chance of success. Currently, 95 percent of people with cardiac arrest occurring in the community die. As many as one in five people who have a cardiac arrest do so in a public place, and therefore stand to benefit from the Government's programme. Once somebody has suffered a cardiac arrest, there are only a few minutes in which defibrillation is likely to succeed. The prompt application of basic life support will buy time for the defibrillator to be brought to the patient, but the quicker defibrillation is carried out the greater the chance of saving them. Ambulances may take several minutes to reach the scene; let the paramedics take over after the patient has been defibrillated!

What if the defibrillator is attached to a conscious person? Can they be electrocuted?

AED computer software is designed to be fail-safe, it is therefore extremely unlikely that a shock could be delivered to a conscious person. Although AEDs should not knowingly be connected to a person who is conscious, this should not prevent the use of AEDs for persons who are suspected of having a cardiac arrest.

Will the placement of defibrillators in public places mean that simple first aid measures will no longer be required?

No. Defibrillation is part of a 'chain of survival', which includes calling 999 for the emergency services, giving basic life support to provide oxygen to the brain and other vital organs, defibrillation itself, and more advanced medical and paramedical care. Each link in the 'chain' is important and the Resuscitation Council (UK) will be supporting first aid training as part of the

overall initiative. Defibrillation is, however, a highly effective treatment for cardiac arrest and needs to be performed at the earliest opportunity.

What other safeguards are in place to ensure that defibrillators are being used appropriately and safely?

Every time an AED is used, this will be recorded by the ambulance service as part of their clinical audit programme. Each AED has an in-built electronic recording device which will be collated centrally and reviewed by professionals as part of the audit process. After an event each site is asked to complete an AED Event Form and fax it to the Department of Health.

Training

Who can train people to use AEDs?

There are a number of organisations and bodies who can provide training. The following are just a few who have been identified as potential training providers in the use of AEDs:

- appropriately trained doctors and nurses
- resuscitation training officers
- voluntary training organisations
- ambulance trusts
- first aiders accredited in AED training.

Training contracts for the defibrillator programme were awarded to seven training providers following a Government procurement exercise.

How long should it take to train people in basic life support and the use of an AED?

For someone with no prior experience or knowledge it is likely that a minimum of four hours' training will be required to cover the core competencies, assuming an optimum ratio of instructors to students and mannequins to students. Because it is often necessary to include additional training to cover the requirements of particular groups of trainees, courses of up to eight hours' duration may be needed (source: Resuscitation Council (UK)). The Department of Health developed an initial four-hour training specification for the defibrillator programme. Personnel who undertake the training must achieve crucial competencies in basic life support and the use of an AED.

How often should people be retrained?

Many trainees are no longer able to demonstrate effective CPR only a few weeks after attending a course. After six months it has been shown that skill retention may be as low as 10 percent. Repeated refresher courses are essential, and experience has demonstrated that retraining at intervals of six months is both effective and practicable (source: Resuscitation Council (UK)).

In order to ensure skill knowledge and skill retention the site staff receive refresher training at six monthly intervals and must again achieve the training competencies.

Legal status

What are the legal issues surrounding the deployment or use of defibrillators?

At present in the UK, there are no statutory requirements for the placement of defibrillators, training and retraining for potential users of automated external defibrillators (AEDs). The Department of Health is not a regulatory body in these matters.

The Resuscitation Council provides guidance on the legal status of those who attempt resuscitation and their website (see link above) provides a wealth of information and further links on this subject.

Additional provision of defibrillators

What should people do if they are interested in obtaining a defibrillator?

The British Heart Foundation (BHF) considers individual applications for defibrillators and can advise on the placement of defibrillators in the community. They can be contacted at:

Cardiac Equipment Officers
British Heart Foundation
ELS Dept
14 Fitzhardinge Street
London W1H 6DH
Tel: 020 7935 0185
Fax: 020 7486 5820