A guide to
Automated External Defibrillators (AEDs)

By
Resuscitation Council (UK) and British Heart Foundation

Resuscitation Council (UK)

British Heart Foundation

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ASSOCIATION OF AMBULANCE CHIEF EXECUTIVES

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National Ambulance Service Medical Directors

A guide to Automated External Defibrillators (AEDs)

This document is designed to provide information about automated external defibrillators (AEDs) and how they can be deployed in the community to help resuscitate a victim of sudden cardiac arrest.

Summary

1. Sudden cardiac arrest (SCA) is a leading cause of premature death, but with immediate treatment many lives can be saved. SCA occurs because the electrical rhythm that controls the heart is replaced by a chaotic disorganised electrical rhythm called ventricular fibrillation (VF). The quicker VF can be treated by defibrillation the greater the chance of successful resuscitation. Seconds count, and the ambulance service is unlikely to arrive quickly enough to resuscitate most victims.
   More information in section 1 and section 2

2. Many SCA victims can be saved if persons nearby recognise what has happened, summon the ambulance service with the minimum of delay, perform basic cardiopulmonary resuscitation (particularly chest compressions) and use an AED to provide a high energy electric shock to restore the heart's normal rhythm. Each of these stages is a link in a chain of events that provide the best chance of success, but the critical factor is the speed with which the shock is given.
   More information in section 2 and section 3

3. AEDs are easy to use, compact, portable and very effective. They are designed to be used by lay persons; the machines guide the operator through the process by verbal instructions and visual prompts. They are safe and will not allow a shock to be given unless the heart's rhythm requires it. They are designed to be stored for long periods without use and require very little routine maintenance. Several models are available from the manufacturers or through medical equipment companies.
   More information in Section 3 and section 13

4. AEDs have been installed in many busy public places, workplaces, or other areas where the public have access. The intention is to use the machines to restart the heart as soon as possible. This strategy of placing AEDs in locations where they are used by lay persons near the arrest is known as public access defibrillation (PAD). Training to use an AED is an extension of the first aid skills possessed by first aid personnel and appointed persons. AEDs have been

used successfully by untrained persons, and lack of training should not be a deterrent to their use.
More information in section 4. Separate information is included about AEDs in the workplace (section 8) and schools (section 9). Information on training is contained in section 11.

5. In the United Kingdom, there are very few legal barriers to PAD. A rescuer who has acted appropriately to help a victim of SCA should not be sued regardless of the outcome.
More information in section 6

6. The important factors to consider when contemplating installing an AED at any location are discussed. The decision should be made in partnership with the local ambulance service who will advise about their purchase, installation and other practical information.
More information in section 5 and section 7.

7. AEDs should be placed or stored where they are most likely to be needed; they must be accessible with the minimum of delay. All persons working at the site need to be aware of their purpose and location, and the steps to be taken should someone collapse. This will include calling the ambulance service and activating the organisation's emergency response plan to get the AED and those best trained to use it.
More information in section 5 and section 12

1. Introduction

Defibrillation is one crucial stage in a sequence of events that need to occur for the resuscitation of a victim of sudden cardiac arrest (SCA). This sequence, or 'chain of survival', starts by summoning the emergency services as soon as possible. The second stage is providing basic cardiopulmonary resuscitation (chest compressions alternated with rescue breaths) to keep the victim alive until the third stage (defibrillation) can be performed.

The automated external defibrillator (AED) has been described as the single most important development in the treatment of SCA. These devices are now widely available and increasingly used by people, often with little or no training, to re-start the heart of a victim of SCA. Under ideal circumstances, when used very soon after collapse (within two or three minutes), many can survive.

The crucial determinant of survival is the interval between collapse and the use of the AED to deliver a shock. The strategy, therefore, is to have an AED installed at a place where it might be needed so that it can be accessed quickly by someone nearby, taken to the person who has

collapsed, and used before the arrival of professional help. This arrangement is known as Public Access Defibrillation (PAD).

In this guide we explain the background to defibrillation and describe some important practical aspects of setting up an AED programme or PAD scheme. The information will help those considering establishing an AED programme in any public place. This will include the workplace, school, gym, or a transport, shopping or sports facility. Similarly the information will be relevant to those wishing to make an AED generally available by placing one in a prominent place in their local community. It is not intended as a guide for the purchase of an AED for use in the home.

2. Background

SCA is an important cause of death in all developed western countries. In Europe, around 1 in 1,000 of the population suffers SCA each year, so in the UK there are likely to be approximately 60,000 cases annually. In England, the ambulance service attempt resuscitation in approximately 25,000 cases per annum but at present, only a small proportion survive.

Most cases of SCA are due to an abnormality of the heart's electrical rhythm called ventricular fibrillation (VF) in which the electrical impulses that normally control the heart become chaotic and uncoordinated. The heart stops beating (i.e. it ceases to act as a pump) and the circulation of blood stops. Death is inevitable unless the condition is recognised promptly and defibrillation is carried out. Defibrillation is the use of a high-energy electric shock that stops the chaotic rhythm of VF and allows the normal, organised, electrical rhythm of the heart to re-start. This can allow the pumping action of the heart to return.

The major factor limiting the number of people who survive SCA is the ability to provide defibrillation within a critical time. Conditions for defibrillation are optimal for only a very few minutes after the onset of VF, although this period can be extended if a bystander provides effective cardiopulmonary resuscitation (CPR), particularly chest compressions. For details about this see http://www.resus.org.uk/pages/bls.pdf. Nevertheless, the victim's chance of survival falls by around 7 - 10% with every minute that defibrillation is delayed. Only rarely are the emergency medical services able to attend and provide defibrillation early enough, and the best way of ensuring prompt defibrillation is for someone nearby to use an AED to deliver the shock that can often save a life.

The term 'heart attack' is often used to refer to SCA, but this is incorrect. A heart attack (or myocardial infarction) occurs when an artery ('fuel pipe') supplying the heart with blood ('fuel') becomes blocked. This usually causes chest pain and leads to damage to some of the muscle of the heart. It may cause SCA, particularly in the early stages, but this is by no means inevitable.

However, the risk of this happening emphasizes the importance of summoning immediate help for anyone with a suspected heart attack, so that they can receive treatment to reduce the damage to their heart and reduce the risk of SCA. As soon as a heart attack is suspected, the nearest available AED should be brought to the scene as a precaution in case the victim does go on to suffer a cardiac arrest, in which case it can be used without delay and maximize the chance of survival.

There are many other causes of SCA, and it is not usually possible at the time to be sure of the precise cause, which requires carrying out tests in hospital. The priority is to provide immediate treatment, as this is the same in the early stages, regardless of the cause.

3. The Automated External Defibrillator (AED)

All that is required to use an AED is to recognise that someone who has collapsed may have SCA and to attach the two adhesive pads (electrodes) that are used to connect the AED to the patient's bare chest. Through these pads the AED can both monitor the heart's electrical rhythm and deliver a shock when it is needed. The AED provides audible instructions and most models also provide visual prompts on a screen.

The AED will analyse the heart's electrical rhythm and if it detects a rhythm likely to respond to a shock, it will charge itself ready to deliver a shock. Some devices then deliver the shock automatically without needing any further action by the operator; others instruct the operator to press a button to deliver the shock (these are often referred to as 'semi-automatic' AEDs). After this the AED will tell the rescuer to give the victim CPR. After a fixed period (two minutes in current guidelines), the AED will tell the rescuers not to touch the victim while it checks the heart rhythm and a further shock is given (if it is needed). Using an AED in this way allows the provision of effective treatment during the critical first few minutes after SCA, while the emergency services are on their way.

Modern AEDs are very reliable and will not allow a shock to be given unless it is needed. They are, therefore, extremely unlikely to do any harm to a person who has collapsed in suspected SCA. They are also safe and present minimal risk of a rescuer receiving a shock. AEDs require hardly any routine maintenance or servicing; most perform daily self-checks and display a warning if they need attention. Most AEDs currently offered for sale have a minimum life-expectancy of ten years. The batteries and pads have a long shelf-life, allowing the AED to be left unattended for long intervals. More details are given in section 9.

These features of AEDs make them suitable for use by members of the public with little or no training, and for use in PAD schemes.

As well as having an AED on site (and people trained to use it) it is also vital that as many people as possible learn basic skills in cardiopulmonary resuscitation. This entails recognising that someone may have suffered SCA, calling the emergency services (999 or 112), and then performing chest compressions and rescue breaths. This basic first aid will maintain an oxygen supply to the brain and other organs and make it more likely that the heart can be re-started by defibrillation. The priority in the early stages is to provide chest compressions, and if a rescuer is unable or unwilling to provide rescue breaths uninterrupted chest compressions should be given.

4. AED programmes

The use of AEDs by people who were not health professionals was introduced in the UK as a government-led initiative (the 'Defibrillators in Public Places Initiative' 1999) which placed AEDs in airports, railway stations, and other public places where ambulance service records showed that SCA occurred most frequently. Staff working in these places were trained in CPR and to use AEDs that were positioned nearby. See http://www.resus.org.uk/pages/bls.pdf and http://www.resus.org.uk/pages/aed.pdf. Experience has shown that this strategy was effective and it has saved many lives.

With the growing public awareness and acceptance of AEDs, and their increasing availability, many more AEDs have been provided in public locations through national lottery funding, local fund raising or by the British Heart Foundation (BHF) and other charities.

5. Establishing an AED programme or PAD scheme

Is an AED needed here?

This question may arise because:

a) Someone has placed one in a similar location or organisation.
b) A cardiac arrest has occurred at the location and treatment had to wait for the arrival of the ambulance service. Not unnaturally there is a feeling that the event might have been managed more efficiently.
c) An approach is made by those promoting the purchase and deployment of AEDs.
d) Employers are considering their statutory duties under the Health and Safety at Work Act 1974 and associated regulations.
e) Occupiers of premises (including sporting and recreational establishments) are considering their civil law 'duty of care' to visitors and users of their facilities.

In general, the more likely it is that an AED will be used, the more worthwhile it is to provide it. Unfortunately there are no generally agreed criteria on which to base definitive advice on whether

or not to provide an AED in any specific place, but consideration of the following points should help a decision to be made:

- SCA affects predominantly middle-aged and older people (more men than women). Some younger people (including athletes and elite sportspeople) suffer SCA or sudden cardiac death; this is much less common but may attract understandable public attention.
- People with underlying heart disease (particularly ischaemic heart disease, in which the coronary arteries are narrowed) are particularly vulnerable.
- The greater the number of people present in or passing through any one place the greater the risk of SCA occurring there.
- SCA often occurs during exertion. The stress of travel is also a recognised precipitant, but in many other cases there is no recognised trigger.
- The purpose of installing an AED is to deliver a shock as soon as possible after SCA - if possible within five minutes at the most. Delays in fetching the AED or obtaining a code to unlock a cabinet may reduce the chance of success.
- Although untrained members of the public have used AEDs successfully to save life, the great majority of successful AED use has been by trained people (albeit people with modest training) who were nearby. It is essential to have people on site who are willing to be trained to use the AED.
- In a workplace situation, it will be sensible to train first-aiders or 'appointed persons' in the use of an AED. However other, untrained, members of staff should be instructed that if a person collapses and no trained person is readily available, they should use the AED, following the verbal and other prompts that it gives. They should be reassured that they will not be subject to any criticism or blame, and will be shielded by the Employer's Liability Insurance against any litigation if the person dies. By using an AED they cannot make the victim's condition worse since the device will only discharge its shock if the victim has a heart rhythm that will lead to death if they do not receive a shock.
- The ability to perform CPR is a vital skill that increases survival, and can buy time until the AED can be used.

These points should be considered against the background knowledge that ambulance services *cannot guarantee* an immediate response to an individual call, even when it is given high priority. Even when they can attend promptly, it is only on exceptional occasions that they will be able to attend and provide defibrillation within the 3 - 5 minute time window that is the objective - one that has often been achieved by PAD schemes.

By considering each of these points in any individual situation, a practical decision about whether or not to install an AED can usually be made.

6. Legal issues

In some countries, and in most states in the USA, 'Good Samaritan' legislation protects those who go to the help of others. No such legislation exists in the UK, so many people's first major concern is the legal situation of those who attempt to resuscitate someone. Might a potential rescuer be sued after trying to resuscitate someone who has collapsed? The short answer is that it is very unlikely that a potential rescuer could be sued.

In English law, for someone to be held liable it would have to be shown that the intervention had left the victim in a worse situation than if there had been no intervention. In the circumstances under discussion (i.e. someone who is technically dead following a cardiac arrest) it is very unlikely that this would arise. No case brought against someone who tried to provide first aid has been successful in the UK, where the courts have tended to look favourably on those who try to help others. This subject has been considered in detail, and detailed legal advice is offered elsewhere on the Resuscitation Council (UK) website: http://www.resus.org.uk/pages/legal.pdf

The second concern is whether someone might be sued for failing to have an AED available when someone sustained a cardiac arrest - there have been high-profile cases in other countries where this has happened. Legal advice on this subject is also available on page 16 of the document mentioned above.

7. Working with the ambulance service

People who want to install an AED need access to help and guidance, for example on exactly where to place it, how to make sure that it is most likely to save a life, and how to arrange training to support this. The local ambulance service is a ready source of expertise on the provision of resuscitation services and can offer practical advice about the potential value and effectiveness of an AED in any situation, and about training in CPR and the use of AEDs. Contact should be made with the community response officer or a community defibrillation officer. Details of contact points for all ambulance services in the UK are provided in appendix 1.

Most ambulance services already train community first-responders and equip them with AEDs and other basic equipment, so that they can respond to local emergencies that they can reach more quickly than an ambulance. They are, therefore, well aware of the challenges facing all users of AEDs and any organisation that installs an AED.

The protocols used in ambulance control rooms aim to maximize the contribution that those present at the scene of an emergency can make before the ambulance arrives. The call-takers will encourage people at the scene to give CPR and to use an AED if available, and may know the location of the nearest AED if it has previously been made known to them and entered on their database. The Resuscitation Council (UK) encourages all owners of AEDs to register these devices with their local ambulance service so that the AED can provide maximum benefit. This can include use of the AED outside the specific premises where it is situated.

In some places first-aiders working at a particular location have made themselves available to be contacted by ambulance control and sent (with their AED) to cases of possible cardiac arrest in their immediate vicinity. The local ambulance service will be able to advise on the potential for this type of arrangement.

8. AEDs in the workplace

The aim of installing AEDs in the workplace is to protect the workforce and also protect members of the public. Concentrating on the workforce, the incidence of cardiac arrest in the workplace in the UK is not known accurately, but in the USA (population 312 million), 400 deaths from SCA are reported to the Occupational Safety and Health Administration each year http://www.osha.gov/dts/tib/tib_data/tib20011217.pdf

The Institution of Occupational Safety and Health (IOSH) commissioned a survey of 1,000 business decision-makers across the UK and found that 513 did not have AEDs in their workplace. Almost two thirds of the negative responses came from medium to very large companies. It appears, therefore, that whilst almost half the companies surveyed did have AEDs available, many did not.

Employees who have had first aid experience make ideal potential AED operators. Employees who are currently designated “first-aiders” will have undertaken a 3-day First Aid at Work training course or a 1-day Emergency First Aid at Work training course. Others, who are designated “appointed persons” under the First Aid at Work Regulations often attend an optional half-day course in which emergency resuscitation is covered. It will be a logical extension for both types of courses to include instruction in the use of an AED.

At the time of writing there are efforts being made to promote the introduction of legislation to make the provision of AEDs mandatory in the workplace, schools, sports venues, and certain public buildings. Notwithstanding the outcome of this, the factors listed in 5 (1) above will help guide a decision about placing AEDs in any individual workplace. Clearly when the workforce is large or

there are substantial numbers of visitors, this will add additional weight to the case for an AED being made available.

9. AEDs in schools

Fortunately SCA in school-age children is rare, but when it does occur it is a particularly tragic event. Several cases have received wide publicity, and specialised charities provide valuable information to health professionals and to the public to increase awareness and promote knowledge on the subject, as well as promoting research and improving recognition and treatment of the underlying causes. The precise incidence is not known as there is no national registry of such events in children, and post-mortem examinations do not always identify the cause (many of the cardiac conditions that cause SCA in this age group are not detectable after death).

A study to investigate the causes of cardiac arrest at schools in Seattle (population 1.5 million), a city with the best data collection for 'out-of-hospital' cardiac arrest in the world, reported 97 cardiac arrests over a 15 year period. Cardiac arrest occurred at 1 in 111 schools per year. This represented 2.6% of all cardiac arrests treated outside hospitals over the period. Twelve arrests occurred in students, 33 in teachers and other staff, and 52 in other adults not employed at the schools; thus almost 90% of the arrests occurred in adults rather than pupils. The estimated incidence of cardiac arrest in students was 0.18 per 100,000 students per year and in teachers and other staff 4.51 per 100,000 staff members per year. No particular part of a school was found to be a high-risk area but 6 of the 12 student cardiac arrests occurred during exercise; other reports have mentioned a predominance of athletes among student victims of SCA.

An AED in a school is likely to be used very infrequently, and is more likely to be used on an adult than a pupil. However, an undoubted advantage of having AEDs in schools is that the students will become familiar with them and can learn about their purpose; this could be incorporated into classes on first aid, including training in CPR. School-age children have been shown to be capable of using AEDs in simulated cardiac arrest scenarios, and all schoolchildren should be taught emergency life-saving techniques.

10. Obtaining an AED

Several manufacturers supply AEDs directly to the purchaser or through subsidiary medical equipment sales companies. An internet search will reveal many models and options, making choice confusing. Most of the AEDs currently aimed at basic-level responders are suitable for community AED schemes. Some models are designed for use by more highly trained responders (and have additional features like ECG screens), but these are not appropriate for basic-level responders. The ambulance service may provide recommendations (usually based on compatibility with the models they use). Important differences between models include the cost of buying the AED itself, the cost and shelf-life of batteries, the cost and shelf-life of the electrode pads, the

duration of manufacturer's guarantee, and the after-sales services provided. All these factors should be considered when making a choice. It can be useful to ask others about their experience with a particular AED before going ahead with a purchase.

The purchase of more than one machine usually reduces the unit price, and such discounts should be sought when several AEDs are purchased. Large organisations (e.g. a supermarket chain) buying many devices should consider a formal competitive procurement exercise as substantial savings can be made.

For many years the BHF has funded AEDs and continues to do so. Enquiries about how to apply and the criteria for successful applications should be through the BHF website www.bhf.org.uk - search for 'Defibrillators Save Lives'. You will be directed to your local ambulance service who will be able to consider supporting your application; they will ask if you are a public access defibrillator site (PAD) or part of a community first responder scheme.

The BHF is clear that early defibrillation is part of the chain of survival which includes calling 999 or 112 in the event of witnessing a cardiac arrest in the community and commencing cardiopulmonary resuscitation as soon as possible. All these stages contribute to a successful outcome in cardiac arrest in the community.

11. Arranging training for responders

We have already seen that the crucial factor in the resuscitation of someone from VF is to provide a shock from an AED with the minimum of delay. Time should not be wasted if trained staff are not immediately available. Untrained people have used the devices successfully to save life and lack of training (or recent refresher training) should not be a barrier. Provided someone is prepared to use the AED they should not be inhibited from doing so.

There are advantages, however, of having a core number of appropriately trained personnel; training people to use an AED can be achieved quickly without major cost. Providers of training include the ambulance service, the first aid organisations (e.g. the British Red Cross, St John Ambulance, St Andrews and Royal Life Saving Society) and private training companies. Choice of training provider will depend on what is available locally, the numbers being trained, and the pre-existing level of expertise of the trainees. Clearly, skilled first-aid-at-work employees will usually need less training than those with no first aid knowledge or experience.

Increasingly, on-line or distance-learning programmes are being offered and may be used more widely in the future, particularly for refresher training. The Resuscitation Council (UK) has produced 'Lifesaver', an interactive app, which teaches CPR and BLS as an interactive educational

programme. Lifesaver is available at https://life-saver.org.uk/ and can be played on a computer, smartphone, or tablet. It is completely free and is a very useful educational resource for this type of training.

A detailed statement of training requirements is available at http://www.resus.org.uk/pages/AEDtrnst.htm and many frequently asked questions are dealt with at http://www.resus.org.uk/pages/faqAED.htm

12. Installing the AED

The most important consideration is that those who might need to use an AED know where it is kept and how to access it quickly. No barrier should be put in the way of anyone collecting it when it is needed; it should not be locked away and inaccessible.

There is understandable concern that an AED in a public place may be at risk of theft or vandalism. Where there is a definite high risk that an AED may be stolen or damaged, any arrangements to protect it will almost certainly create delays in getting it to the person who is in immediate need of it. On the other hand an AED that has been stolen or damaged will be of no use to anyone. Our general advice is that AEDs should not be kept locked, but if the risk of theft or vandalism is considered significant, any protective measures must be accompanied by a reliable arrangement to minimize the delay in obtaining access when it is needed.

Most AEDs located in public places are kept in protective cabinets; the standard sign for an AED should be used to show where it is stored http://www.resus.org.uk/pages/AEDsign.htm. Various types of cabinet are available offering different levels of security and weather-proofing. With many, the door is alarmed so that when the AED is removed an alarm is activated, but local circumstances will determine the need for this feature.

In the workplace, it is vital that all employees know that there is an AED present, where it is, and what it is for. Installing the standard sign for an AED nearby will help. Equally important is that everyone knows exactly what they should do to raise the alarm in the event of accident or sudden illness. Organisations with AEDs should consider having a formal policy to facilitate this.

AEDs should be located as close as possible to their most likely place of use. This will usually be determined by the layout of the building or venue and by the number of people at potential risk in each place. Security considerations may play an additional role. During the early implementation of the National Defibrillator Programme it was decided to place AEDs no further than two-minutes brisk walk from the places that they were likely to be used, and this precedent could act as a practical guide.

It is recommended that the local ambulance service is made aware that an AED is available at a particular location and whether it can be accessed at all times or only (for example) during office hours; this information can help ambulance call-takers guide those initiating a resuscitation attempt.

13. Maintenance

Users of an AED are not expected to carry out any maintenance tasks other than replacing expired batteries, electrode pads, and other consumable items (razor, airway adjuncts, plastic gloves). Even then, the shelf-life of these (unused) is usually 3 - 5 years, so any maintenance tasks are infrequent. In all cases the manufacturer's instructions should be followed.

All currently available AEDs perform regular self-checks and if a problem is detected it will be indicated. In most cases they show this by a warning sign or light visible on the front of the machine. Those owning an AED should have a process in place for it to be checked regularly and frequently (ideally daily) for such a warning, and for appropriate action to be taken when necessary. If this task is delegated to individuals, allowance must be made to ensure that the checks are not neglected during absence on holidays, sick leave etc. Most manufacturers provide a replacement AED while one is removed for servicing, and the arrangements for this should be clarified and agreed during the process of buying the AED.

14. Event reporting and debriefing

When an AED is used, the electrocardiogram showing the heart rhythm and details of any shocks given are recorded on an electronic memory contained in the device. This information should be downloaded immediately after the event as the record can provide crucial information that may be needed to ensure that the patient receives the correct treatment afterwards. This downloading will usually be done by the ambulance service.

The process is usually straightforward with modern devices (merely connecting the AED to a computer) but details of how this is done should be clarified when buying the AED. Special software is usually required and is provided by the manufacturer. The need to have this at a location should be decided at the outset, preferably in conjunction with the ambulance service.

Debriefing for anyone involved in a resuscitation attempt, regardless of the outcome, is important. Arrangements for this should be made by those responsible for the medical supervision of the AED programme. In most cases, the ambulance service (who will already have been involved with the incident) will be able to advise.

Appendix - Ambulance service contacts

East of England Ambulance Service

Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk

Tel: 01954 712400 ext. 8500

Email: responderadmin@eastamb.nhs.uk

Website: www.eastamb.nhs.uk

East Midlands Ambulance Service

Derbyshire, Leicestershire, Rutland, Lincolnshire, Northamptonshire and Nottinghamshire.

Tel: 0115 884 5000

Email: community.responder@emas.nhs.uk

Website: www.emas.nhs.uk

London Ambulance Service

Greater London including the area enclosed by the M25

Tel: 020 7783 2532

Email: voluntaryrespondergroup@lond-amb.nhs.uk

Website: www.londonambulance.nhs.uk

North East Ambulance Service

County Durham, Northumberland including Tyne and Wear, Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland and Stockton-on-Tees.

Tel: 0191 2264013

Email: firstresponder@neas.nhs.uk

Website: www.neambulance.nhs.uk

North West Ambulance service

Cumbria, Lancashire, Merseyside, Cheshire, Greater Manchester

Tel: 0845 0021999

Email:

Cheshire and Mersey: rob.hussey@nwas.nhs.uk

Greater Manchester: david.mcnally@nwas.nhs.uk

Cumbria and Lancashire: mark.evans@nwas.nhs.uk

Website: www.nwas-responders.info

South Central Ambulance Service

Berkshire, Buckinghamshire, Hampshire and Oxfordshire.

Tel: 0800 587 0207

Email: cfr@scas.nhs.uk

Website: www.southcentralambulance.nhs.uk

South East Coast Ambulance Service

Brighton & Hove, East Sussex, West Sussex, Kent, Surrey, and North East Hampshire

Tel: 01737 363815

Email:

Kent: kent.cfr@secamb.nhs.uk

Surrey: surrey.cfr@secamb.nhs.uk

Sussex: sussex.cfr@secamb.nhs.uk

Website: www.secamb.nhs.uk

South Western Ambulance Service

Cornwall and the Isles of Scilly, Devon, Dorset, Somerset, Bath and North East Somerset, Bristol, Gloucestershire, Wiltshire, North Somerset, South Gloucestershire, Swindon

Tel: 01392 261646

Email: responders@swast.nhs.uk

Website: www.swast.nhs.uk

West Midlands Ambulance Service

Shropshire, Herefordshire, Worcestershire, Warwickshire, Staffordshire, Birmingham, Solihull, Black Country.

Tel: 01384 215555

Email: cfrs@wmas.nhs.uk

Website: www.wmas.nhs.uk

Yorkshire Ambulance Service

Tel: 0845 1203155

Email: responders@yas.nhs.uk

Website: www.communityresponders.yas.nhs.uk

Guernsey Ambulance Service

Tel: 01481 725211

Email: dean.delamare@ambulance.org.gg

Website: www.ambulance.org.gg

Isle of Wight Ambulance Service

Tel: 01983 534111

Email: ambulancehqadmin@iow.nhs.uk

Website: www.iow.nhs.uk/ambulance

Scottish Ambulance Service

Tel: 0131 314 0000

Email:

North: scotamb.CommunityResilienceNorth@nhs.net

West central: scotamb.CommunityResilienceWestCentral@nhs.net

East central: scotamb.CommunityResilienceEastCentral@nhs.net

South: scotamb.CommunityResilienceSouthEast@nhs.net

South West: scotamb.CommunityResilienceSouthWest@nhs.net

Website: www.scottishambulance.com

Welsh Ambulance Service

Tel:

North: 01978 366204

South: 02920 932917

Central: 08448 700222

Email:

North: FirstResponder.North@ambulance.wales.nhs.uk

South: FirstResponder.South@ambulance.wales.nhs.uk

Central: FirstResponder.Central@ambulance.wales.nhs.uk

Public Access Defibrillation

02920 932917 Adrian.Hooper@ambulance.wales.nhs.uk

Website: www.ambulance.wales.nhs.uk

Northern Ireland Ambulance Service

Tel: 02890 400734

Email: first.response@nias.hscni.net

Website: www.niamb.co.uk

Resuscitation Council (UK)
5th Floor, Tavistock House North
Tavistock Square
London
WC1H 9HR

www.resus.org.uk | enquiries@resus.org.uk

British Heart Foundation
Greater London House,
180 Hampstead Road,
London
NW1 7AW

www.bhf.org.uk