NHS
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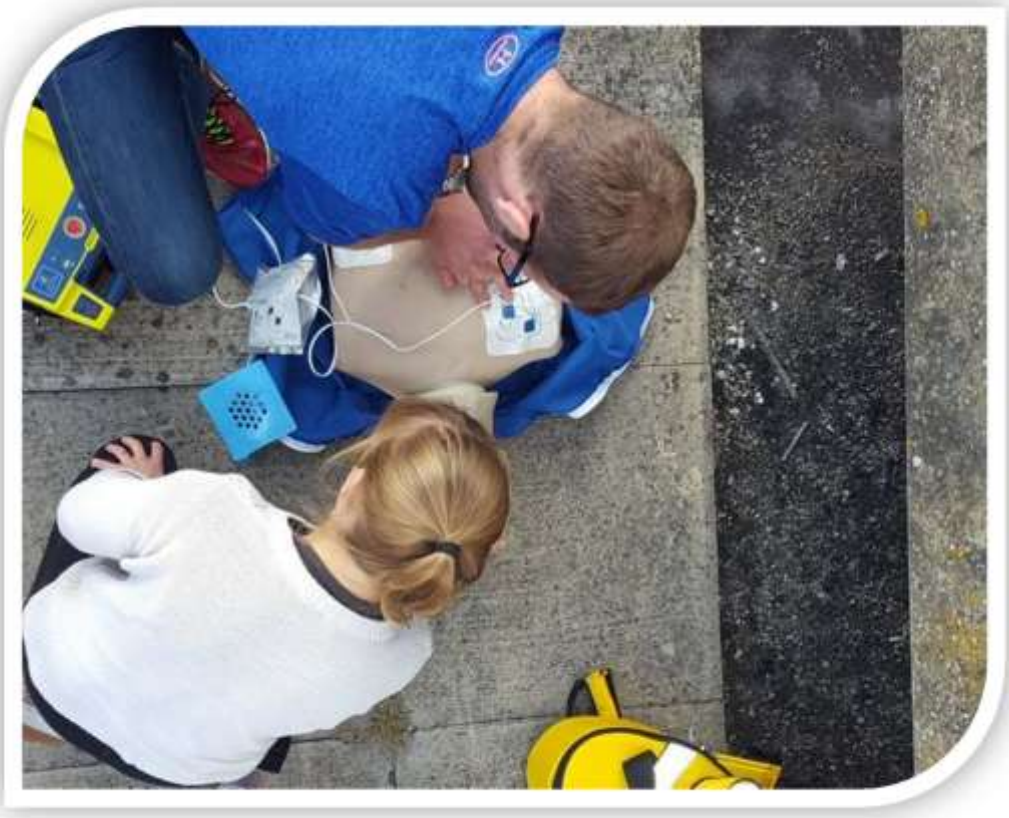
Public Access Defibrillators Information Pack

December 2025

Everything you need to know about purchasing, installing and maintaining a public access defibrillator.



Contents

Introduction

Thank you for your interest in purchasing or installing a defibrillator. This pack explains the key things you should consider before making a purchase:

- **What defibrillators are and why we need them**
- **Purchase options (defibrillators and cabinets)**
- **Installation and training**
- **Registration on the national database**
- **On-going management and maintenance**

We also cover some wider information on cardiac arrests and using a defibrillator in emergency situations. There are also several videos available online that explain this.

If you do install and AED you'll join a growing network of life savers. If you have any other questions after reading this document, please contact the team at defib@scas.nhs.uk.

The basic acronyms

- **AED** – Automatic External Defibrillator (a type of defibrillator anyone can use)
- **PAD** – Public Access Defibrillator (AEDs located so members of the public can use them)
- **CPR** – Cardiopulmonary Resuscitation (chest compressions given alongside AED use)
- **VF** - ventricular fibrillation (the abnormal heart rhythm which AEDs try to correct)

AED Guardians

You will need to nominate at least two people to be the 'guardians' of your AED. It is not an onerous task but is essential to keep AEDs response ready. Guardians will be responsible for:

- Registering the AED on the national database and providing updates if any details change.
- Carrying out basic checks on the device on a regular basis.
- Monitoring expiration date of the pads and battery; ensuring funds are available to purchase replacement items.
- Returning the device to a response ready state after use.

The guardians may be contacted by SCAS to obtain outstanding information regarding the AED.

Do guardians or AED owners have to attend incidents when the device is needed?

If your AED is registered on the national database, then you have agreed that it is publicly accessible. So a bystander may be directed to your AED, if it is within 400metres of a casualty. It is not essential for a member of staff/volunteer to go to the scene of the incident. This is a personal decision that the individual should make taking into consideration their role and responsibilities within their organisation.

AEDs and why we need them

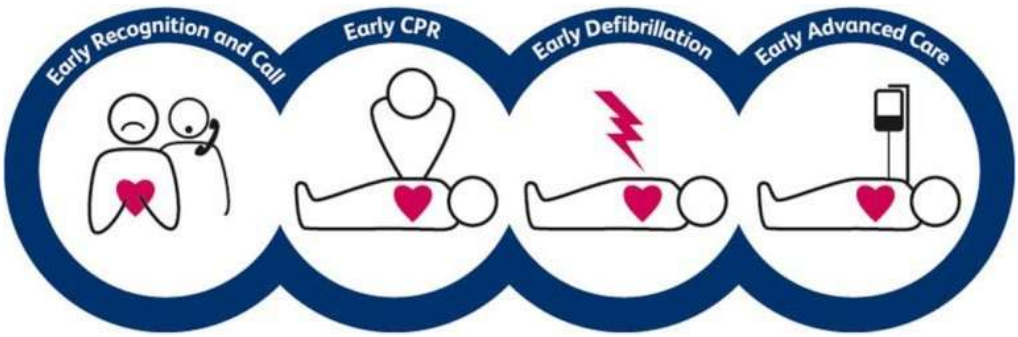
An AED is a compact, portable defibrillator for use on a casualty in cardiac arrest. They can be used by untrained bystanders to start potentially life-saving treatment within the first few critical minutes before emergency responders arrive.

The AED has two adhesive pads (electrodes) which are applied to the casualty's bare chest. Through the pads the AED will analyse the heart's electrical activity and deliver a shock if needed.

In a cardiac arrest, the heart may have uncoordinated electrical activity called ventricular fibrillation (VF). This means the heart is not pumping effectively. The AED shock momentarily stuns the heart, stopping all activity. This gives the heart an opportunity to resume beating in a normal rhythm and return to pumping effectively.

The survival chain

Early defibrillation is a critical part of the survival chain for a casualty in cardiac arrest. The chance of survival decreases by 10% for each minute that passes without CPR and defibrillation. AEDs used along with CPR quite simply save lives.



AEDs in the South Central Ambulance Service area

In 2024/25 we had 7,350 public access defibrillators registered across our patch (Hampshire, Berkshire, Oxfordshire and Buckinghamshire). They were deployed to over 550 incidents.

On average, across the four counties, we attend more than four patients a day who have suffered a cardiac arrest. The more defibrillators that are publicly accessible in the community the more lives they will help us save.

We look forward to working with you to make another lifesaving device available.

Where is my nearest AED?

Our 999 call takers can direct people to an AED within 400meters of a casualty. To see the closest public access defibrillator in your area use www.defibfinder.uk

Purchasing an AED

Is there support for funding?

Regrettably SCAS cannot help with funding of AEDs. Local fundraising may be an option, and grants may be available from local councils and other organisations. The British Heart Foundation have an annual application process for funding that community groups can apply for. Defibrillator funding for your local community - BHF

Is there a recommend model?

We do not recommend a specific device as all AEDs have similar features. However, we can advise you of the most popular defibrillators and storage cabinets in use within our footprint and help you make the most informed choice. Contact a member of the team at defib@scas.nhs.uk

AED insurance

You may wish to consider insurance for the device. Whilst theft or vandalism of such a device is not a regular occurrence, we are aware of these possibilities. It is recommended that insurance is arranged when the AED is purchased.

Different types of AED

All AEDs will automatically determine if a shock is needed. All types of AEDs are effective and safe to use.

- **Semi-automatic** - prompt the user to press the shock button

- **Fully automatic** - use a countdown or voice commands for the user and deliver the shock without the user pressing a shock button.

Fully automatic models are designed for those who may hesitate in a stressful time. Semi-automatic models can provide additional safety; allowing for a final check to ensure no one is touching the casualty prior to pressing the shock button.

- **Biphasic waveform** - Biphasic defibrillation alternates the direction of the pulses, completing one cycle in approximately 10 milliseconds. The biphasic waveform decreases the energy needed for successful defibrillation, in turn decreasing burns and myocardial damage.

- **Escalating energy** - An AED with escalating energy will, after the first shock, deliver each successive shock with higher energy. A non-escalating AED will deliver the same energy level shock each time.

There are various ways an AED can help you through a rescue. Newer models may prompt you through video and text display screens. Some models have LED indicators and voice commands to help the user perform the operations quickly and easily.

Do I need to buy any other equipment when purchasing an AED?

Yes, the following equipment should be purchased to maximise the effectiveness of the AED adhesive electrode pads:

- **Tuff cut scissors** - to cut clothes from the chest so the casualty has a bare chest.
- **Paper towel** - use if the chest is wet to dry where the adhesive electrode pads are to be placed.
- **Razor** - if a casualty has excessive hair then the area where the adhesive electrode pads are to be placed should be shaved to maximise the pads sticking to the chest.

A **face mask** is also an option to allow a bystander to provide mouth to mouth without direct contact (if they so wish)

Replacing items: These are all single-use items and will need replacing if used.

Model Comparison Chart

Device name	**Automatic & Semi-Automatic available**	**Child mode** enabled via switch or separate pads	**Communication process**	**CPR feedback**	**Battery life** on device no WiFi/4G	**Pads shelf life** fitted to device
IPAD SP1	Both	Switch	Audio and LED	Metronome	5 years	3 years
Powerheart G5	Both	Pads	Audio and text screen	Metronome	4 years	2 years
CR2	Both	Switch	Audio	Metronome	4 years	4 years
Lifeline VIEW	Both	Pads	Audio and TV screen	Visual display + metronome	4 years	2 years
Zoll AED 3	Both	Auto resetting switch	Audio and TV screen	Visual display, metronome, active encouragement and positive feedback	5 years	5 years

For more information about model options please email defib@scas.nhs.uk

Cabinets


Is a cabinet essential?

It depends on the location of your AED. External locations need a cabinet with an integrated heating unit. This prevents damage to the device and battery due to cold / heat exposure.

Where do I purchase a cabinet?

Many AED suppliers also offer cabinets. It is best to discuss cabinet options with AED suppliers to ensure they are compatible. Purchasing both together may be cheaper.

Should cabinets be locked?

Ideally not. The Resuscitation Council UK advises that AEDs should be kept in **unlocked** cabinets to reduce delaying treatment for the casualty.

It is recognised that some organisations prefer to have a locked cabinet. If this is the case it should be a coded lock rather than a key. The code is provided to the national database as part of registering the device, so 999 can provide it to callers when needed.

Installation

Locating your AED

We ask that you place it in a location with a high footfall, for example, a Village Hall, Public House or a disused Phone box.

We recommend placing AEDs on the outside of buildings in a protective cabinet, so they are accessible by the public on a 24/7 basis.

A cabinet is required for externally located AEDs, to protect the device from adverse weather temperatures, as well as potential vandalism. The cabinet needs a 240v power supply so a qualified electrician will need to install it.

If your AED is located inside and does not have 24/7 public access, you can still register it on the national database with the hours of availability specified. We strongly encourage that all AEDs are registered even if access hours are limited.

Signage and lighting

It is important that public access defibrillators are well signposted. The latest guidance from the International Liaison Committee on Resuscitation (Brooks et al 2022) recommends that AED signage should:

- Be visible where the AED is stored and within the presumed operational radius of the AED (with a minimum of 200 m).
- Indicate the direction and distance to the AED.
- Be a sufficient size to be identifiable from a distance of at least 50m (requiring lettering of 12 cm in height).
- Be properly maintained; and all signs associated with the AED should be inspected at the same time that the AED undergoes its routine checks (at least annually).

External cabinets should also be illuminated at night. Exterior signs should have supplementary lighting or at least be made of photoluminescent material.

Artwork for signage is available on our website www.scas.nhs.uk/AED or may also be available from suppliers of AEDs and cabinets.

Should schools have an AED?

Fortunately, sudden cardiac arrest in school-age children is rare. AEDs are more likely to be needed for adults (staff members, parents, visitors). The presence of an AED at a school provides potential benefit for everyone present at the site and in the local area. We would encourage all schools to have an AED.

An additional and important advantage of having an AED prominently located at a school is that students become familiar with them and can learn about first aid, resuscitation, and the purpose of defibrillation.

There is guidance available through the Education Department:
Automated external defibrillators (AEDs) in schools - GOV.UK

Training

Basic Life Support Awareness Training

We can provide basic life support awareness sessions at a venue local to yourselves. The session will last 90-120 minutes and cover:

- finding a patient and alerting the emergency services
- assessing the patient for consciousness
- giving CPR and using a defibrillator.

Please contact our team (defib@scas.nhs.uk) for information on the costs of this training. If you would like to take advantage of this training, please contact us using this link: Community Basic Life Support Awareness Training and we will get back in touch with you.

Is familiarisation training essential?

The main purpose of training is to help people feel confident in the use of AEDs, remove any fear or myths regarding their use, and promote best practice. It also covers giving CPR chest compressions – another vital part of the survival chain when helping a casualty.

But untrained people can successfully save a life with an AED and should not wait for a trained person to arrive. Provided someone is willing to use the AED they should be allowed to.

Registering your AED

As soon as your AED is installed and available you should register it on the national database:
www.thecircuit.uk

Once registered, details of the device will automatically be available to the ambulance service. Devices within 400meters of an incident are flagged and our call takers can direct a caller to them.

Once your defibrillator is registered with **The Circuit** it will also show on the publicly available **Defib Finder** (available as website and app versions) www.defibfinder.uk

An essential part of maintaining your AED is updating The Circuit if any access information changes, or if your device is not response ready for any reason.

Servicing and maintenance

AEDs require very little routine maintenance or servicing; most perform daily self-checks and will display a warning or make a warning noise (similar to a smoke alarm chirp) if they need attention.

Current AEDs have an estimated life expectancy of 10 years. The batteries and pads will have a long shelf life of between 2 and 5 years depending on the AED model.

Regular simple checks should be carried out by a delegated guardian. Our Guardian's checklist is available on our website or contact defib@scas.nhs.uk for further information.

Replacing items after use

The electrode pads and items like scissors and razors are single use and will need replacing before the AED can be response ready again. Speak to our team or your chosen supplier about stocking spares as some items have a limited shelf life.

Any questions?

If there is anything else we can help with regarding purchasing, locating and maintaining and AED please get in touch at defib@scas.nhs.uk

The following pages give information on the difference between a cardiac arrest and a heart attack, and the actual use of an AED in an emergency. This information is also covered in our basic life support training and there are online videos available from organisations like the British Heart Foundation and St Johns Ambulance.

Cardiac arrest and heart attack

What is a cardiac arrest?

A cardiac arrest is when the heart stops pumping blood around the body. Often this is unexpected or abrupt. Without a constant blood supply, the brain stops working almost immediately and the person goes unconscious. This is usually caused by an uncoordinated, chaotic heart rhythm called ventricular fibrillation (VF). Cardiac arrest results in death if not treated immediately.

Is cardiac arrest the same as a heart attack?

No. A heart attack is caused by a sudden blockage of a small artery that supplies blood to the heart muscle. When the blood supply is seriously restricted or completely blocked, that portion of the heart muscle dies, and this is what causes the chest/jaw/arm pain.

Some people who have heart attacks may experience a cardiac arrest. However, cardiac arrest may occur independently from a heart attack and without warning signs.

Who is at risk of sudden cardiac arrest?

While the average age of someone having sudden cardiac arrest is about 65, it is unpredictable and can happen to anyone, anywhere, anytime.

Does a cardiac arrest only happen after a heart attack?

No. Anyone can have a cardiac arrest at any time and there are many causes, one of which is a heart attack.

What is ventricular fibrillation?

Ventricular Fibrillation (VF) is an abnormal uncoordinated heart rhythm often seen in sudden cardiac arrest. This rhythm is caused by an abnormal and very fast electrical activity in the heart. VF is chaotic and unorganized; the heart quivers and cannot effectively pump blood. VF will be short-lived and deteriorate to asystole (a flat line) if not treated promptly. CPR can prolong the duration of VF to enable defibrillation and potentially a better outcome.

How is VF treated?

The only effective treatment for VF is an electrical shock called defibrillation. Defibrillation is an electrical current applied to the chest. The electrical current passes through the heart with the goal of stopping the VF and giving an opportunity for the heart's normal electrical system to take control. This shock helps the heart reorganise the electrical activity, so it can pump blood again.

An automated external defibrillator (AED) can defibrillate the heart. CPR can prolong the duration of VF to enable defibrillation.

Using an AED

Can I be sued using an AED?

Although a bystander has no legal obligation to act, once someone volunteers to help, they assume a duty of care towards the person in need. Regardless of the circumstances, anyone who attempts resuscitation would only be legally liable if the intervention leaves a person in a worse condition than they would have been if no action had been taken. In the case of a sudden cardiac arrest, it is difficult to see how a volunteer's intervention could leave someone worse off, since death is inevitable without intervention.

Do AED always result in a positive outcome for someone in cardiac arrest?

Unfortunately, not, but it's important to try. For defibrillation to be successful, it needs to happen within a few minutes of the onset of VF. CPR can help to extend the period of time a casualty stays in VF. AEDs are less successful when the casualty has been in cardiac arrest for more than a few minutes, especially if no CPR has been provided.

What if I am not sure if I need to use an AED?

If someone is unconscious and **not** breathing, then CPR and defibrillation from an AED are vital links in the chain of survival.

Will I hurt the casualty by using an AED?

No. An AED will only give a shock to someone who is collapsed and not breathing normally and whose heart is in an uncoordinated, chaotic rhythm. An AED is a very intelligent device which has been pre-programmed to assess the rhythm and provide a shock only if required.

Can an AED make mistakes?

An AED will almost never shock a casualty when it is not required. Research shows AEDs attached to a casualty who is unconscious and not breathing (in cardiac arrest) make the correct "shock" decision more than 95 of 100 times, and a correct "no shock" decision more than 98 of 100 times. This level of accuracy is greater than the accuracy of emergency professionals.

Is it safe to use an AED if the casualty is lying on a wet or metal surface?

Yes, it is usually safe to use an AED on a casualty who is lying on a metallic, wet or other conductive surface. If the self-adhesive pads are applied correctly and provided there is no direct contact between the user and the casualty when the shock is delivered, there is no direct pathway that electricity can take that would cause the user to experience a shock. If the casualty is wet, his/her chest should be dried, but this is just so that the self-adhesive pads will stick properly.

Should I use the AED if the casualty has a pacemaker or is pregnant?

Yes, never withhold AED use in a person with sudden cardiac arrest.

Can AEDs be used on children?

AEDs are safe to use on children. Different AEDs have different ways of switching this feature on; some have a key or a button which when pressed states 'child mode', while others have specific paediatric electrode pads.

The paediatric pads or programmes typically decreases the output of the machine to 50-75 joules. These devices are recommended for children between 1-8 yrs old. If no such system or manually

adjustable machine is in place an unmodified adult AED may be used. In infants under 1 year old shockable rhythms are unusually rare therefore good quality CPR is the priority. However, for an infant in a shockable rhythm the risk:benefit ratio favours the use of the AED, preferably with an option to decrease the output if a manually adjustable machine is not available.

Can I accidentally shock another bystander or myself?

AEDs are extremely safe when used properly. The electric shock may be automatic or semi-automatic requiring the bystander to press the shock button to allow the shock to go from one electrode pad to another through the casualty's chest. Basic precautions, such as verbally warning others to stand clear and visually checking the area before and during the shock, will virtually ensure the safety of bystanders.

Should I perform CPR first or apply electrode pads from the AED?

CPR should **always** be started when it is clear that the casualty is unconscious and not breathing normally. CPR provides some circulation of oxygen-rich blood to the casualty's heart and brain. CPR squeezes the heart to enable the blood to circulate to the heart and brain delaying brain death and the death of heart muscle. CPR also makes the heart more likely to respond to defibrillation. When an AED is brought to the casualty, continue CPR while the AED is opened.

Do I remove the adhesive pads before performing CPR?

No. The electrode pads remain on the chest throughout the resuscitation and until the casualty is transferred to the care of clinical staff. If the electrode pads are in their correct locations on the casualty's chest, they will not interfere with proper hand placement or compressions.

After I have successfully defibrillated the casualty, do I keep the electrode pads on?

Yes, the AED should be left on until the ambulance service professionals assume responsibility for the casualty. Even after a casualty has been successfully defibrillated, they are at risk of developing ventricular fibrillation (VF) again. The AED will continually monitor the casualty for the return of VF. If VF is suspected, the AED will automatically begin to analyse the casualty after two minutes of CPR is complete.

Why is it so important that the electrode pads are firmly adhered to a clean, dry chest?

Successful defibrillation requires electricity to flow from one electrode pad to the other through the chest. If the electrode pads are not firmly adhered and there is sweat or another conductive material between the electrode pads, the electricity will be more likely to flow across the chest rather than through it. This will result in ineffective defibrillation.

Remember the 7P's when placing the adhesive electrode pads were shown on the diagram on each pad:

Patches – remove and wipe the area dry prior to placing the electrode pads in place

Piercings – do not waste time removing; try to place the electrode pad in the area shown on the diagram.

Perspiration – dry the area where the electrode will be placed of excessive sweat or if the casualty is wet.

Pendants – move any neck jewellery out of the way of where the electrode pads are to be placed on the chest.

Pacemaker site – be aware of the possible location of a Pacemaker just under the skin. Generally found on the upper left side of the chest just below the collarbone, which will not cause a problem with pads. However, for medical need they may be located on the right side of the body just under the collarbone. If this is the case, please stick the pad below the site.

Playtex – All underwired bras should be cut through the centre and moved to one side to ensure they do not spark during defibrillation.

Body hairy – Electrode pads must come in direct contact with the skin. If the chest hair is so excessive as to prevent good adhesion of the electrode pad, the hair must be removed quickly. There should be a razor with the AED to enable a bystander to remove the excess hair.

How much of the casualty's clothing should be removed to carry out defibrillation?

The chest should be exposed to allow placement of the adhesive electrode pads. Clothes may need to be removed i.e., cut, torn or moved away from the chest. A woman's bra should be removed.

Why should the bystander continue CPR after the arrival of the Ambulance Service professionals?

When ambulance personnel arrive, the bystander should continue to provide CPR until they are directed to stop by the ambulance service professionals. This allows the ambulance professionals to set up their equipment and then take over CPR and reconfirm that the casualty is in cardiac arrest.

Why do AEDs not always shock a casualty?

Although Ventricular Fibrillation (VF) is the most common rhythm in cardiac arrest, it is not the only one. The AED will only shock if an uncoordinated, chaotic rhythm is detected. There are other heart rhythms associated with SCA that are not treated with defibrillation shocks. A "no shock advised" message doesn't mean the casualty's heart rhythm is back to normal. CPR should be continued unless the casualty is clearly showing signs of life. Unfortunately, because of other underlying medical or heart problems, not all casualties of sudden cardiac arrest who are in VF will survive even if defibrillation is carried out promptly & correctly.

What if I don't perform all the steps perfectly?

The steps for shocking a casualty are simple and straightforward. The AED usually provides visual and/or audio prompts for the entire resuscitation. The most difficult part is recognising the need for defibrillation.

Sudden cardiac arrest is a high stress situation but always remember that doing something is better than doing nothing! Performing CPR and using an AED can only help the casualty.

Can an AED record information regarding the cardiac arrest?

Yes, all AEDs can record data which shows what the casualty's heart was doing and what CPR and AED interventions were carried out to help the casualty.

References

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