



# Community AED Handbook

## Working with East Midlands Ambulance Service (EMAS)

This document is designed to summarise some of the main issues which have been based upon the conversations that EMAS has come across in its dealings with members of the public wanting to purchase an Automated External Defibrillator (AED).

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## Do I have to have one?

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The simple answer is no. There is no law that states you must buy one for the community.

But community leaders are buying AEDs out of a duty of care to the community as well as some of the reasons for patient care mentioned below.

Business leaders might be buying because following their risk assessment they might have deemed it an important part of their first aid equipment.

## Why bother in the first place?

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A Cardiac Arrest is where your heart stops pumping blood around the body. Approximately 30,000 out of hospital cardiac arrests every year in the UK and cardiac arrests can happen to anyone at any age.

According to the Department of Health 10% of people survive a Sudden Onset Cardiac Arrest. For every minute wasted your chance of survival fall by 10% from a high of 80% at the moment you go into Cardiac Arrest.

To maximise the patient's chance of survival you need to make sure that you follow the chain of survival as shown below. If you have a weak link in this chain then successful resuscitation is compromised.



1. Early recognition and call for help.
2. Early CPR
3. Early Defibrillation
4. Early Advanced Life Support

An AED needs to be with a patient within 2 to 3 minutes of a patient going into Cardiac Arrest and if done can give the best chance of survival. The AED has become an essential piece of life saving equipment and is now readily available at reasonable costs.

The ambulance service across the country is under pressure and has a target time of 8 minutes to reach a Cardiac Arrest. With an AED working best in the

first 2-3 minutes of a cardiac arrest having them situated in the community saves lives

## What is an AED?

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An AED is a medical device that is able to assess a patient and, depending upon what is occurring with the heart, deliver a shock which stops the heart from behaving ineffectively and allows it an opportunity to return to normal.

The AED is designed to be used by a lay person and can work automatically without the intervention of the operator. They are safe and will not shock a patient that doesn't need it. They are easily maintained and need very little attention. They are built to withstand extreme weather condition.

It is important that the AED is not seen as a device that does everything. Whilst they are designed to be used by the lay person it is important that as many people as possible understand how to deliver the other aspects of the chain of survival. Cardiopulmonary Resuscitation (CPR) is a vital basic skill.

They work through the rescuer attaching two sticky pads to the patient's bare chest. From this it will do some analysis of the patient and instruct the rescuer. They will analyse a patient every two minutes looking for the right course of action whether that be to shock the patient or simply continue CPR

They are designed to last and come with long warranties. The only perishables are the pads and batteries and these tend to last a long time.

## What are others doing?

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The demand for AEDs within communities and businesses is growing. This is fuelled by the stories of successful use, the fall in price and promotion by numerous organisations.

The government initially led the way in 1999 by placing AEDs in locations such as railway stations, airports and other public places.

The message to the public is now loud and clear - AEDs can and do save lives. In short communities tend to buy one and believe that this is enough for their communities - but it is only the start. Many schools, businesses and clubs are

raising money to fund one and local authorities have found it difficult to know what to buy and where to put them.

There is also confusion over governance of the AED and who has on-going responsibility for its upkeep and maintenance. The responsibility of an owner does not end with the buying of a machine.

People raise enough money and then are indecisive over what to buy and how best to store it. People are looking generally in the smaller villages looking at phone boxes. Once stored, there are some instances where no-one is taking responsibility for its up-keep.

There is little consideration given to an holistic strategy for AED use in the area. For example, are parish councils, schools and businesses all working together to support each other?

There is also confusion of what is best and at what price - a community strategy needed costs thousands.

## Is a rescuer likely to be sued?

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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.

If you have worries or concerns then we recommend that you read 'The legal status of those who attempt resuscitation' which is in the Resuscitation Councils website: <http://www.resus.org.uk/pages/legal.pdf>

## What does the law say?

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Legally there is no compulsion on anyone to buy an AED albeit in some cases rules and regulation do refer to AEDs. In discussions with people the following

bodies and laws are most commonly mentioned. This is a brief summary of what they say:

**Health and Safety Executive states** - "It is not compulsory for employers to purchase AEDs to comply with the Health and Safety (First-Aid) regulations 1981. However, if your needs assessment identifies an AED need then we recommend your staff should be fully trained in its use". They go on to say "The Resuscitation Council UK guidance on AEDs is that this equipment is safe to use and can be readily used by untrained bystanders"

**Data protection** - Some AEDs record information about its activity during a cardiac arrest - this information can be retrieved by the Coroner if required. The information retained by the machine is not patient specific or identifiable as such. You might be told that it needs to comply with the Caldicot principles which considers the sharing of patient specific information and thus none of these are breached in light of it being no patient specific information. It would be almost impossible for someone to link the information on the AED with a patient.

**The law on regular checks** - Where an AED is provided in a workplace, and used by a member of staff, it becomes work equipment to which the Provision and Use of Work Equipment Regulations 1998 apply. Failure to maintain the equipment and to train persons in its use would be a breach of the 1998 Regulations for AEDs in the workplace.

**Department of Health** – give no guidance on AEDs.

**Medicines and Health Products Regulatory Agency (MHRA)** – There is nothing to be found specifically on AEDs – but there is a need for the AED itself to follow the Medical Devices Regulations 2002 – which it needs to do in order to be sold in the UK. The MHRA can issue notices to manufacturers to cease trading if faults are found in medical equipment.

**The law on failing to provide one** - AEDs are being widely used in public places whether this is in business premises or functions attended by the public. There have been no prosecutions brought in the UK for someone not providing. Once again – there is a good section on this in the Resuscitation Councils website: <http://www.resus.org.uk/pages/legal.pdf> on page 16.

## What are my responsibilities if I do have an AED?

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Unfortunately, you can't just buy an AED and place it into the community to use. You have a responsibility to maintain and make sure that the AED is ready for use – for example, if outside in a cabinet it needs to be at the right temperature. This means that you need to set up a simple process for checking the AED on a regular basis.

You also need to consider the replacement of perishable items, the financial commitment and the process for making sure that the AED is available and ready for use.

## Should I organise training?

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It is important that you consider providing familiarisation sessions for those interested in the community you are looking to support. Most communities arrange for a short familiarisation session which EMAS is happy to support and deliver free of charge.

Training for communities is more about getting people familiar with the AED and how it fits into delivering CPR to a cardiac arrest victim. Paying for the sessions is not essential but it will form part of most First Aid courses these days.

If you are business then at the very least you would be advised to provide regular training on the use of the AED as you would for all first aiders in the business. EMAS is able to support you with an initial familiarisation session to get you started. Failure to maintain the equipment and to train persons in its use would be a breach of the Provision and Use of Work Equipment Regulations 1998 by the employer.

EMAS is recognised as a great place for getting support ...

“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.” The Resuscitation Council AED Guide.

We are happy to advise and support you locally through the Community Response Training Team and the local CFR group.

## How often should AEDs be checked?

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Users of an AED are not expected to carry out any maintenance tasks other than replacing expired batteries, electrode pads, and other consumable items (e.g. razor, drying towel, scissors etc.). Even then, the shelf-life of these (unused) is usually three to five 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 for such a warning, and for appropriate action to be taken when necessary. We would recommend that a check is made weekly and that this is recorded on a simple spread sheet or table for completeness. Each check should review:

1. The batteries are at a suitable level
2. The pads are in date
3. The AED is structurally sound.
4. The cabinet has not been tampered with and is structurally sound.

If the checking 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.

## Where do I put it?

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The siting of each unit is important and there are a couple of things that you will need to bear in mind:

- Population density – Consider where the groups of people tend to meet or the densest population in the community.
- Accessibility – clearly you need the AED in a location that is accessible 24 hours a day.



- Lighting – if you have a locked cabinet can you see the key pad easily
- Ease of access – Try not to put too many barriers in the way of access it.
- Power supply – there needs to be a small power supply to the cabinet so somewhere to enable this to be connected.
- Range – The AED will only be deployed if the incident is within 500m of the cabinet. So to cover as much of the town as possible this radius needs to be taken into account.
- Storing inside or out of a building – If you store an AED on the inside you restrict its use to the community as it will generally only be available when the building is open and this may mean that it is only available to cardiac arrests at the premises.
- Who owns the building or site? If you don't then you are going to need to enter into negotiations with the owner and this is going to have an impact on the time it takes to get your AED up and running.

## What are the most common places?

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The location of AEDs in the community are numerous and varies – the following are some examples of where some AED are stored:

- Phone box.
- Village and Church halls.
- Libraries.
- Village shops.
- Sports centres.
- High foot fall walkways, popular parks.
- Public Houses

## Can I adopt a phone box?

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It is possible to adopt a phone box and they can be useful places in small communities. They tend to have an electricity supply, are sheltered and tend to be situated in the centre of communities.

A phone box needs earthing and thus requires a cabinet with class two electrics suitable for phone box installations - BT Approved manufacturer – these can be obtained through the ambulance service or the Defib Store. They are more

expensive by about £250. (See the table below on page 11 for more information about costs.)

If you are thinking about it – it is worth making sure that it fits with the coverage you need.

It only costs £1 to adopt a phone box. Kick-off the process with a simple email to [payphones@bt.com](mailto:payphones@bt.com)

## Do I need planning permission?

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It is likely that if the building is listed or you live within a conservation area then this will need some form of agreement. The local parish council will be happy to support you.

Where ever you decide to put it you might need to think about who owns the building and you will need to reach an agreement about placing it. It can take a long time to organise.

## Should I have a locked or unlocked cabinet?

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The priority is to get a defibrillator and apply it to the person in cardiac arrest with an absolute minimum of delay. Unlocked cabinets allow immediate access to a defibrillator in a situation where seconds count.

However, EMAS understand that there might be concerns about your AED being stolen or tampered with, making it unavailable or of no use to a person in cardiac arrest. This is something that, as a community you need to consider the position of the AED and whether there are any other measures you can take to protect your AED.

The Resuscitation Council says: "Where conditions allow, defibrillators should be placed in openly accessible (unlocked) cabinets that allow immediate access in an emergency. A decision to place a public-access defibrillator in a locked cabinet should be made only on the basis of careful risk assessment in that specific location. Liaison and collaboration with the local ambulance service is crucial to the success of any public-access defibrillator scheme"

If you go for the locked cabinet then you will need to let EMAS know the code. Share the code with only those that need to know for security and checking reasons.

# Which AED should I have?

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There are many AEDs on the market that are designed to work with cardiac arrests. The costs vary enormously but we have selected three by way of example. We have included some technical things and are happy to explain them.

An Ingress Protection (IP) rating looks at the ability of the AED to stand up to the rigors of working in outside conditions. For example IP x4 means that it will not leak if in a shower of water – IP55 states that it can withstand a jet of water. Both are acceptable but IP55 is more robust.

	<b>Lifepak CR+</b>	<b>Lifepak CR2</b>	<b>IPad Saver</b>
<b>Warranty</b>	8 years	8 years	5 years
<b>Battery life</b>	No battery needed Charge stick comes free with pads	4 years	4 years
<b>Carry case</b>	Yes	No	No
<b>Operation</b>	Auto/semi auto	Auto/semi auto	Auto/semi auto
<b>Spare pads included</b>	Yes	No	No
<b>Rescue kit included</b>	Yes	No	No
<b>IP rating</b>	IP x4	IP55	IP54
<b>Governance</b>	Manual checking process needed	Manual and WIFI processes.	Manual checking process needed
<b>Charge time</b>	10 secs	0 secs	10 sec
<b>Charge delivery</b>	Biphasic	Biphasic	Biphasic
<b>Charge energy</b>	200, 300, 360 Joules	200, 300, 360 Joules	200 Joules
<b>Paediatric ode</b>	Pads required	Build in	Pads required
<b>Paediatric pads required</b>	Yes	No	Yes
<b>Pads life</b>	2 years	4 years	2 years
<b>CPR coaching language</b>	English	English + 1	English
<b>Patient assessment</b>	2 mins interval	2 mins interval	2 mins interval
<b>ECG assessment</b>	Stop CPR	Whilst CPR ongoing	Stop CPR
<b>Storage temperature</b>	-40 to 60 degrees	-30 to 60 degrees	
<b>Operating temp'</b>	0 to 50 degrees	0 to 50 degrees	0 to 40 degrees

All of the AEDs are acceptable and are supported by EMAS. There are other AEDs on available in the market place. Even though there are a few technical things listed, EMAS is happy to explain the differences. Depending on what you are trying to achieve or concerned about then one might be better than another.

## What will it cost initially?

The costs of AEDs are falling all the time and new versions are coming to the market regularly. Below are some example costs of running AEDs.

	<b>Lifepak CR+</b>	<b>Lifepak CR2</b>	<b>IPad Saver</b>
<b>AED Cost</b>	£650 + VAT	£999 + VAT	£695 + VAT
<b>Running Costs – assuming no use (VAT Included)</b>			
<b>Year 1</b>	£0	£0	£0
<b>Year 2</b>	£74	£0	£33
<b>Year 3</b>	£0	£0	£0
<b>Year 4</b>	£74	£243	£189
<b>Year 5</b>	£0	£0	£0
<b>Year 6</b>	£74	£0	£33
<b>Year 7</b>	£0	£0	£0
<b>Year 8</b>	£74	£243	£189
<b>Year 9</b>	£0	£0	£0
<b>Year 10</b>	£74	£0	£33
<b>Totals</b>			
<b>Year 8</b>	£298	£483	£444
<b>Year 10</b>	£372	£483	£477
<b>Separate costs</b>			
<b>Heated cabinet</b>	£349	£349	£349
<b>New pads</b>	£74		£33
<b>Special offer</b>	£999	£,1348	£999
<b>Paediatric pads</b>	£85	Not required	£72
<b>Carry case</b>	Included	£69	£120
<b>Rescue Kit</b>	£23.74		£5.94

## Special offer - £999

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The special offer is using EMAS preferred suppliers. It applies to the Lifepak CR+ and iPad Saver models only:

- A choice of 1 x defibrillator
- AED warranty
- 2 x adult electrodes (pads)
- 1 x external cabinet
- 1x 2 hour familiarisation training session for the community
- Access to EMAS and the Community First Responders for advice and support
- All delivery costs
- Registration with the EMAS' 999 systems.

The price is £999 and excluding VAT. To order this deal you need to email [community.responder@emas.nhs.uk](mailto:community.responder@emas.nhs.uk) stating for more information.

Consumable items can be purchased direct with the supplier.

## What other costs might there be?

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After the initial outlay of buying the AED and the cabinet, there is likely to be a cost for the installation of the cabinet and attaching it to a power supply.

On-going costs associated with the AED are listed above and there is likely to be a small cost for the electricity. The cabinets have a thermostat that keeps the temperature of the cabinet at least zero degrees. To give you an idea – we understand that the average running costs of a cabinet is about £12 - £15 per annum depending upon the winter weather.

If the AED is used on a patient then there will be a need to replace the pads – the costs are above.

## Can I get funding?

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There are charities and other foundations that sometimes support communities in the purchase of AEDs. These include the British Heart Foundation which runs a national campaign from time to time. Other groups have supported communities in the past including local Ladies Circle, Round Table, Rotary and Lions clubs. There are also organisations in certain circumstances which might help and these are charities, such as Joe Humphries Trust and some sports governing bodies.

You might also be able to work with local businesses and agree some joint funding?

Funding might also influence the type of equipment that you get. For example, if you are successful in getting funding through the British Heart Foundation then this will be conditional on a unlocked cabinet.

## What does EMAS need to know about the project?

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You do not need to involve EMAS in any aspect of your project to place AEDs in your community. We are, of course, happy to support and advice on all aspects project if you feel you need help.

There is no need to inform us on a day-to-day basis about the AEDs state unless it is compromised and not rescue ready for any reason.

## Do I have to link it to the 999 service?

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Linking your AED to the 999 service is not essential or required under any law but is strongly advised. This linking is purely so that in an emergency the rescuer is informed about the AED and its location as well as how to access it. Linking to the 999 service also means the rescuer only need remember to phone 999 and all the help and support they need is at the end of the phone.

The AED remains yours and all the responsibilities remain with you.

## How do I get it linked to the 999 service?

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Once your AED is in place and is ready for use all you need to do is send EMAS information to [community.responder@emas.nhs.uk](mailto:community.responder@emas.nhs.uk) about your site.

### Registration information

<b>AED type</b>	A full description including serial numbers
<b>Cabinet</b>	Yes/no
<b>Cabinet code if applicable.</b>	
<b>Availability</b>	If contained in a building when it is open.
<b>Full address</b>	
<b>Postcode</b>	
<b>Actual whereabouts on the building</b>	A full description of where it is and if need how to get to it.
<b>Contact name</b>	
<b>Contact number</b>	

You will get an email confirming that this has been added.

## What happens in an emergency?

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There is no need to give everyone the code for the AED cabinet as the ambulance service keeps it on the 999 systems if you have registered it. People should be encouraged to ring 999 in a life threatening emergency.

There are two people involved in any emergency at the end of the telephone. The first is the call handler and the second is the person dispatching the emergency resources to the scene. If you are the only person on scene at a cardiac arrest you will be talked through giving CPR.

The dispatcher also has on the screen your registered AED and if it is within 500m then other bystanders will be informed of the cabinet code if applicable and the exact location. It will be brought to the patient and the AED is easily useable by lay people but they will also be supported by the call handler.

## What happens after an emergency?

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If your AED is taken to a job then there are a number of outcomes.

Firstly, it might not be used and has either been returned to its cabinet or taken by the ambulance crew to the nearest ambulance station.

You will then get an email from us letting you know that it has been taken to a job and that you need to check the AED to make sure that it is in the cabinet and ready for use. If this is the case then a simple email to us letting us know will allow it to be placed back on line.

If it is not in the cabinet then informing us of this will allow set wheels in motion for us to collect it from the local station and replace it for you. We will automatically mark it as ready if it has not been used.

If the AED is used in a real life emergency then it remains your responsibility to return the AED to a "rescue ready" state. You will need to replace the pads and return to the cabinet. At this point you need to email us so that we can mark them as live.

## How do I get started?

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Planning is the first step and a crucial one that avoids all the costly pitfalls. The following are a few broad steps and questions that will help your thinking. It might seem a lot when you first go through it but remember we have been through this many times and can support you in your decision making.

### **Community needs**

- Where does our community tend to gather?
- Where are the middle-aged and older people live who are more susceptible
- Where is sport played or other outdoor activities?
- Do I have any groups with underlying medical conditions?
- What other places in the community do people gather – eg transport links, libraries, public buildings etc.

### **What is in the community now?**

- Are you aware of groups that already have one? (E.g. businesses, schools, clubs, libraries.)



- Are these groups planning to buy one?
- Are they inside or outside the building?
- Are they registered with the ambulance service?
- How many businesses with one would be willing to move it outside?
- Remember – no one has a definitive list of AEDs in your community?

### **Mapping**

- Can you plot them on a map?
- Where do they overlap? (see 'Where do I put it?' for further help)

### **Financial management**

- Have you the funds?
- Where are the funds coming from?
- Are other groups willing to share costs?
- Do I need to budget for on-going costs?
- Have I taken into account installation costs?

### **People**

- Who is going to be responsible for checking the AED?
- Who is going to cover them during holidays, illness etc.?
- Who are the contacts in the community groups/businesses?

### **Processes**

- Training the community or staff
- Purchasing perishables and the AED itself?
- AED checking frequency and records
- Have I a contact with my Ambulance service?

### **Communications**

- How will you communicate with the public
- How will you communicate with employees
- Do you want the press involved?

If you have any issues concerns or thought that you would like to share involve us in the process.

## Summary/Contacts

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This document is designed to give you as much information as you need to feel confident in organising your business or community.

We are here to

- Share our experiences
- Provide a sounding board
- To answer your questions
- To guide you through the process.
- To help you review your current community needs and AEDs
- To provide guidance

In the end it is your decision and choice about the best way forward for your community. We are not here to force you in a direction you don't want to go or to sell anything. The support of the EMAS and its volunteers is free. If you wish to make a contribution to the running of the local Community First Responder Group then please feel free to do so.

The EMAS with the support of the Community First Responders in your area are happy to help.

Please contact us through our email address [community.responder@emas.nhs.uk](mailto:community.responder@emas.nhs.uk)