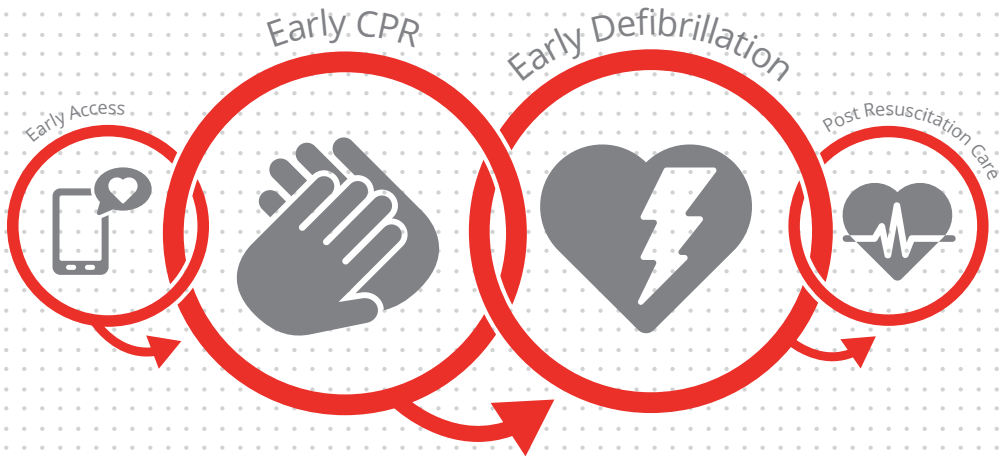


# What you need to know about **Defibrillators and CPR**



Working as one to save lives

CALL 999 > START CPR > GET A DEFIBRILLATOR

# Cardiac Arrest & CPR



## What is a cardiac arrest?

A cardiac arrest is when the heart suddenly stops pumping blood around the body. It is caused by a problem with the electrical system of the heart. Death of a person suffering a cardiac arrest can occur within minutes.



## How do I know if someone has suffered a cardiac arrest?

You will not know for sure, which is why a defibrillator is so important. Someone who has suffered a cardiac arrest will be unresponsive, not moving and not breathing normally. The heart will have stopped pumping blood around the body, so someone suffering a cardiac arrest will lose consciousness almost immediately and will also show no visible signs of life - such as purposeful movement or breathing.



## What does performing CPR actually do?

CPR increases the chances of survival as it ensures that a flow of oxygen rich blood is pumped to the brain and vital organs. This also increases the likelihood of the heart remaining in a 'shockable' rhythm rather than deteriorating to a 'non-shockable' (flat-line) rhythm. It increases the potential success of resuscitating someone with a shock from a defibrillator.

## Cardiac Fact

*When someone has a cardiac arrest, every minute without CPR and defibrillation reduces their chances of survival by at least 7-10%<sup>1</sup>*



iPAD SP1

1. Source: Deakin, Shewry, Gray, 'Public access defibrillation remains out of reach for most victims of out-of-hospital sudden cardiac arrest', Heart, 100 (2014), 619-623: <http://heart.bmj.com/content/100/8/619.full?sid=bbc35314-f031-4b10-957d-8568b70345303>

## Cardiac Fact

12-15 young people die from heart related causes each week.



DefibSafe2 cabinet – latest model shown here.



### Is a cardiac arrest the same as a heart attack?

No, the term heart attack is often used by mistake to describe a cardiac arrest. A heart attack is when a blockage prevents blood getting to the heart. This causes death of the affected area of heart muscle, not necessarily the death of the person suffering a heart attack. A heart attack might lead to a cardiac arrest, but the terms do not mean the same thing. Generally, someone experiencing a heart attack will be conscious.



### Why should I not just wait for an Ambulance before doing anything?

Calling 999 is crucial to get professional help on the way. However, for every minute that passes without early CPR and defibrillation, there is a 10% drop in the chances of survival. UK NHS Ambulances are targeted to reach people suffering a cardiac arrest within 8 minutes, nevertheless they may encounter challenges such as traffic congestion, difficult access, crowds and travelling to remote areas which can delay their arrival on scene. The sooner CPR and a defibrillator is used, the more effective trained medical staff can be when they arrive.



# Cardiac Fact

*There are 30,000 out-of-hospital cardiac arrests in the UK every year.<sup>2</sup>*



## Could a rescuer be sued for trying to resuscitate a cardiac arrest victim?

This is very unlikely. In English law, for someone to be held liable it would have to be shown that the intervention had left someone in a worse situation than if there had been no intervention<sup>3</sup>.

In June 2014 a new bill (The Social Action, Responsibility and Heroism Bill) also offers a layer of protection for people taking action to save the life of others<sup>4</sup>.



## Knowing how to perform CPR can help save a life

West Ham United fan Ian Perry and his son Wayne were queuing to watch the Carabao Cup tie between their beloved West Ham and Tottenham Hotspur, when Ian collapsed. Thankfully, among the other supporters waiting to enter the stadium was Ian Pearse, who immediately recognised that his fellow fan had suffered a cardiac arrest and began administering cardiopulmonary resuscitation (CPR).

Ian Pearse said, "My training just kicked in. I made my way through the crowd and told them I knew what to do and they allowed me to start doing cardiac massage, with the aim of maintaining circulation of oxygen around his body whilst the paramedics were on their way."



*Mr Perry (73) with his son Wayne and grandson*

*His son Wayne said, "Without Ian Pearse's intervention, the doctor said my Dad would not have lived. After watching Ian and the medics bring my Dad back, I would urge everyone to get training to do CPR, because it can be a matter of life or death."*

2. Source: British Heart Foundation, [www.bhf.org.uk](http://www.bhf.org.uk)

3. Legal position supporting evidence available online at <https://www.resus.org.uk/cpr/legal-status-of-those-attempting-cpr>

4. See <https://www.gov.uk/government/publications/social-action-responsibility-and-heroism-bill-fact-sheet>

5. Resuscitation Council (UK), Consensus Paper on Out-of-Hospital Cardiac Arrest in England (2015)

# Defibrillators Save Lives



## What is a defibrillator?

A defibrillator is a very safe and easy to use electronic device, designed to be used by a layperson. It automatically reads the heart rhythm of someone who may have suffered a cardiac arrest and diagnoses if an electrical shock is required to restore a normal heart rhythm. If it is required, a defibrillator will allow you to safely deliver a controlled electrical shock to the heart.



## What is a public access defibrillator (PAD)?

This is the placement of a defibrillator in an outside location so that it is available for use 24 hours a day 7 days a week. In this case, a defibrillator is housed in a suitable external storage cabinet built specifically for this function. The cabinets are permanently fixed to suitable external walls or surfaces. They are registered with the NHS Ambulance Services with access details given through the 999 / 112 call.



## Is a defibrillator the same as an AED?

AED stands for Automated External Defibrillator, this is the type of defibrillator designed for use by laypeople and in public access sites.



iPAD SP1

## Cardiac Fact

*Countries with the highest rates of OHCA survival are those which have strengthened all 4 links in the chain of survival – see cover diagram <sup>5</sup>*



## Are defibrillators (AED) easy to use?

Yes, they are designed to be used by laypeople. Defibrillators (AED) use a series of illustrations and calm voice prompts to guide someone through the whole process, step by step.



## Are defibrillators (AED) dangerous if they are used by a non-medical professional?

No, defibrillators (AED) are designed to be used by anyone. They use a series of voice prompts and illustrations to give step by step guidance. **It is impossible to give a shock to the heart of someone who does not need one.**



## Can I do any harm with a defibrillator (AED)?

No, you can do no harm with a defibrillator (AED). They will only allow an electrical shock to be delivered to the heart of someone who needs it. A shock cannot be delivered in error. When someone has a cardiac arrest, life cannot be sustained. In fact, someone is technically already dead after suffering a cardiac arrest and they will not have a chance of survival without early CPR and early defibrillation.



## Can a defibrillator (AED) cause me any harm if I use it?

No. There has never been a recorded incident of a rescuer coming to any harm using a defibrillator (AED). They are completely safe to the rescuer<sup>6</sup>.



NF1200

## Cardiac Fact

*Chances of survival increase significantly with early access to CPR & defibrillation.<sup>7</sup>*

6. A guide to automated external defibrillators (AEDs); Resuscitation Council (UK) – <http://www.resus.org.uk/pages/Public.htm#free>

7. Source: Jerry P. Nolan (ed.), Resuscitation Guidelines 2010 (London: Resuscitation Council (UK), 2010), p.29.

## Cardiac Fact

*Only 20% of cardiac arrest victims are in a "shockable rhythm" when emergency services arrive.<sup>8</sup>*



### Could I kill someone if I use a defibrillator (AED)?

If someone has suffered a cardiac arrest, they are already technically dead. Using a defibrillator will offer the best chances of restoring life. A defibrillator (AED) cannot and will not allow a shock to be delivered to the heart of someone who does not need one.



### Could I make things worse by shocking the heart of someone who does not need it?

It is impossible to shock someone who does not need it. A defibrillator will only deliver a shock if the heart requires one. You cannot make things worse.



### Do I need to be trained to use a defibrillator (AED)?

Anyone can use a defibrillator. Untrained people have used them successfully to save a life and lack of training (or recent refresher training) should not be a barrier. It is desirable for people to be familiar with the use of a defibrillator (AED) and that they keep their familiarisation up to date. If the circumstances dictate that no trained operator is present, someone willing to use a defibrillator must not be deterred from doing so (UK Resuscitation Council, 2010 & 2013)<sup>9</sup>.



### When should a defibrillator be used?

The use of a defibrillator should be considered when you believe someone has suffered a cardiac arrest - they will be unconscious with no visible signs of life.

8. Resuscitation Council (UK), OHCA, 2014

9. Resuscitation Guidelines 2010; Resuscitation Council (UK)  
– <http://www.resus.org.uk/pages/guide.htm>







### Can a defibrillator be used on both adults and children?

Yes. You will need to check with the manufacturer of the defibrillator as to the changes required to make a defibrillator safer for children between 1 and 8 years old. The iPad SP1 AED has a simple switch selection if it is to be used on a child between 1 and 8 years old. Some models of defibrillator require different electrode pads or settings to be changed.



### Could I use a defibrillator on a pregnant woman?

Yes. A mother will need to be resuscitated if an unborn baby is to survive.



### Could I use a defibrillator in the wet?

Yes. You would need to ensure the immediate skin area on the chest is dried off and shelter provided where possible. There is no immediate danger to the person using the defibrillator.

