



Department
for Education

Automated External Defibrillators (AEDs)

Guidance for schools

August 2023

Document Control

Document Owner:

Deputy Director, Technical Standards, Department for Education

Document Originator:

Design Team, Technical Standards, Department for Education

Revision History:

Revision	Status	Date	Author	Amendment
C01	A	2023-01-20	LSM	First issue
C02	A	2023-08-15	DCR	Minor amendments made to pages 30 & 31

Contents

Definitions	8
Introduction	9
What is an Automated External Defibrillator?	10
Cardiac arrest and heart attacks	12
Cardiac arrest	12
Heart attack	12
The chain of survival	13
Defibrillation and cardiopulmonary resuscitation (CPR)	14
Cardiopulmonary resuscitation (CPR)	16
CPR for adults	16
CPR for children	16
Purchasing a defibrillator	17
Ordering through NHS Supply Chain	18
Location and access	19
Choosing a location	19
Installing your defibrillator	20
Cabinets	20
Locked and unlocked cabinets	21
Community access	22
Insurance	23
Registering your defibrillator on The Circuit	23
What is The Circuit?	23
Why should you register your defibrillator?	24
Example scenarios for community access	24
Example A	24
Example B	24
Case studies of community access	25
Case Study A – Stuart’s story	25
Case Study B – David’s story	27
Training	27
Is training required?	27

Raising awareness	28
British Heart Foundation CPR training pack for secondary schools	29
Sources of information	29
Additional considerations	30
Developing an action plan	30
After an incident	30
Safety considerations	31
Legal considerations	32
Accessories and consumables	33
Maintaining your defibrillator	35
Regular checks	35
Replacing consumables	35
Software updates	36
Replacing your defibrillator	36
Fact check	37
Sources of further information	38
Department advice and guidance	38
Other publications	38
Free resources	38
Local ambulance services	39
External organisations	39
Contact details for defibrillators supplied by DfE	39
Appendix A: Defibrillator minimum specification	40
Category – General	40
Category – Power	40
Category – Warranty	41
Category – Data/Memory	41
Category – Facilities	41
Category – Accessories	42
Appendix B: support arrangements for defibrillators purchased via NHS Supply Chain	43
Image Credits	44

List of figures

Figure 1: Organisations who have supported the production of this guidance.....	7
Figure 2: The chain of survival.....	13
Figure 3: Adult defibrillator pad placement.....	14
Figure 4: Example 1 – paediatric defibrillator pad placement (for use on children aged up to 8 years of age or weighing under 25 kg).....	14
Figure 5: Example 2 - paediatric defibrillator pad placement (for use on children aged up to 8 years of age or weighing under 25 kg).....	15
Figure 6: The UK standard sign for defibrillators.....	21
Figure 7: An external defibrillator cabinet.....	25
Figure 8: An open defibrillator.....	27

Summary

This publication provides non-statutory guidance from the Department for Education (DfE). It has been produced to help schools maximise the benefits of their on-site Automated External Defibrillators (AEDs or 'defibrillators') and also sets out how schools can make their defibrillators more widely available and how additional defibrillators can be purchased.

Review date

The 'Purchasing a defibrillator' section of the guidance will be updated annually to reflect the purchasing arrangements put in place by the Department for Education.

All other sections of the guidance will be reviewed before February 2024.

Who is this publication for?

This guidance has been produced for maintained schools and academies in England. Other settings are welcome to make use of the information but should be aware that not all of it will be relevant to them.

The purchasing arrangements found in [Appendix B](#) of this guidance are available to the following types of settings in all nations of the UK:

- maintained schools
- academies
- independent schools
- sixth form and further education colleges
- maintained and independent nursery schools
- pre-school establishments
- private, voluntary and independent nurseries
- playgroups
- holiday and out-of-school providers.

The arrangements are also open to other organisations (such as local authorities, multi academy trusts and parents' associations) purchasing on behalf of such establishments.

Note: Details of the school or other eligible setting will be required at the time of purchase.

Acknowledgements

The DfE are grateful to our colleagues at the British Heart Foundation, The Oliver King Foundation, Resuscitation Council UK and St John Ambulance for their invaluable support and assistance in producing this guidance.



Figure 1: Organisations who have supported the production of this guidance

Definitions

Terms and acronyms used throughout the guidance are defined below.

Automated External Defibrillator (AED) - Also referred to as a defibrillator. These are devices that are placed externally on the body to deliver an electric shock to restart the heart in the event of cardiac arrest.

Cardiopulmonary resuscitation (CPR) - When someone gives chest compressions to a person in cardiac arrest to keep them alive until emergency services arrive.

Electrocardiogram (ECG) - A simple test that can be used to check your heart's rhythm and electrical activity, often carried out by many defibrillators before delivering a shock.

Out of Hospital Cardiac Arrest (OHCA) - Cardiac arrests that happen to people who are not in hospital, under hospital care.

Rescue breaths - Also known as 'mouth-to-mouth'. Breaths that are delivered to a person during CPR.

Introduction

The Department for Education (DfE) is providing Automated External Defibrillators (AEDs or 'defibrillators') to state-funded schools in England where existing provision is not in place. By the end of the 2022/23 academic year, the DfE expect all schools in England to have access to a defibrillator.

Secondary schools with two or more defibrillators will be provided with an internal cabinet. Schools are encouraged to place this in their sports facility, as physical activity is linked to an increased likelihood of cardiac arrest. Where the sports facility is used by the local community, this can help increase the availability of the defibrillator so that more people can benefit from it. This will help boost the number of accessible defibrillators across England.

This guidance is to help schools understand the vital role that defibrillators can play in helping to save lives and the benefits this brings to pupils, staff and other users of their premises.

What is an Automated External Defibrillator?

An Automated External Defibrillator (AED or 'defibrillator') is a machine that is placed externally on the body and is used to give an electric shock when a person is in cardiac arrest i.e., when the heart suddenly stops pumping blood around the body.

Cardiac arrest can affect people of any age and without warning. If this happens, swift action is vital, and you must call 999 immediately for an ambulance. While the ambulance crew are on their way, early cardiopulmonary resuscitation (CPR) and prompt defibrillation can help save a person's life.

In 2021, emergency medical services attempted to resuscitate approximately 32,000 cases of out-of-hospital cardiac arrest in England.¹ Overall survival rates vary across the country, but on average less than one in ten people survive to go home from hospital following a cardiac arrest. However, survival rates as high as 70% have been reported where CPR and defibrillation are delivered promptly.² This is why the statutory guidance on supporting pupils at school with medical conditions³ advises that schools should have a defibrillator as part of their first aid equipment.

Research shows that the chance of survival following the onset of a cardiac arrest decreases by 7–10% for every minute of delay in commencing treatment⁴. Lack of blood circulation for even a few minutes may lead to irreversible organ damage, including brain damage. Early intervention by bystanders, even those with no training, can therefore buy time until professional help arrives, improving the chance of a successful outcome.

Modern defibrillators are simple and safe to operate and use. Once attached, the defibrillator will automatically analyse the individual's heart rhythm and, if required, apply a shock to restart it or advise that CPR should be continued. The department has supplied schools in England with Mediana A-15 defibrillators. The Mediana A-15 has both visual and voice prompts to guide the rescuer through the entire process from when the device is first opened. The department recommends that where schools wish to buy defibrillators, they ensure they come with both visual and voice prompts.

1

https://warwick.ac.uk/fac/sci/med/research/ctu/trials/ohcao/publications/epidemiologyreports/ohca_epidemiological_report_2021_-_england_overview_published_29.11.2022.pdf

2 <https://pubmed.ncbi.nlm.nih.gov/25399395/>

3 Source: The Department for Education – 'Supporting pupils at school with medical conditions: Statutory guidance for governing bodies of maintained schools and proprietors of academies in England', December 2015:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/803956/supporting-pupils-at-school-with-medical-conditions.pdf

4 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-8568b7034530>

Prompts include:

- where to position and attaching the pads
- when to start or restart CPR
- whether or not a shock is advised.

For schools that would like assistance with purchasing additional defibrillators, the Department for Education has negotiated an arrangement with NHS Supply Chain to enable the purchase of defibrillators which meet a certain minimum specification at a discount. Further details can be found in the 'Purchasing a defibrillator' section.

Cardiac arrest and heart attacks

It is important to understand the distinction between a heart attack and cardiac arrest as they are not the same and require different interventions.

Cardiac arrest

A cardiac arrest is a life-threatening emergency where a person's heart has suddenly stopped pumping blood around the body. The person will be unconscious, unresponsive and will not be breathing normally or not breathing at all. It is essential to call 999 immediately for an ambulance.

While waiting for the ambulance, anyone can help to save the person's life by delivering CPR and using a defibrillator. CPR can help to circulate oxygen to the body's vital organs, which will help prevent further deterioration so that defibrillation can be administered.

Cardiac arrest can happen at any age and at any time. Possible causes include:

- heart and circulatory disease (such as a heart attack or cardiomyopathy)
- loss of blood
- trauma (such as a blow to the area directly over the heart)
- electrocution
- sudden arrhythmic death syndrome (SADS; often caused by a genetic defect).

Heart attack

A heart attack happens when a blood clot blocks an artery around the heart. The person will usually experience chest pain or tightness that can radiate to the left arm and/or the neck. They may also feel sweaty or nauseated. They do not usually lose consciousness and continue breathing.

It is vital that you call an ambulance immediately as this is a life-threatening situation.

If the person is still conscious, this means their heart is still beating and CPR and/or the use of a defibrillator is not appropriate. A defibrillator is only appropriate when the heart has stopped beating.

If the heart attack deteriorates to a cardiac arrest, then it is appropriate to start CPR and use a defibrillator.

The chain of survival

In the event of a cardiac arrest, defibrillation can help save lives. To be effective, it should be delivered as part of the chain of survival.

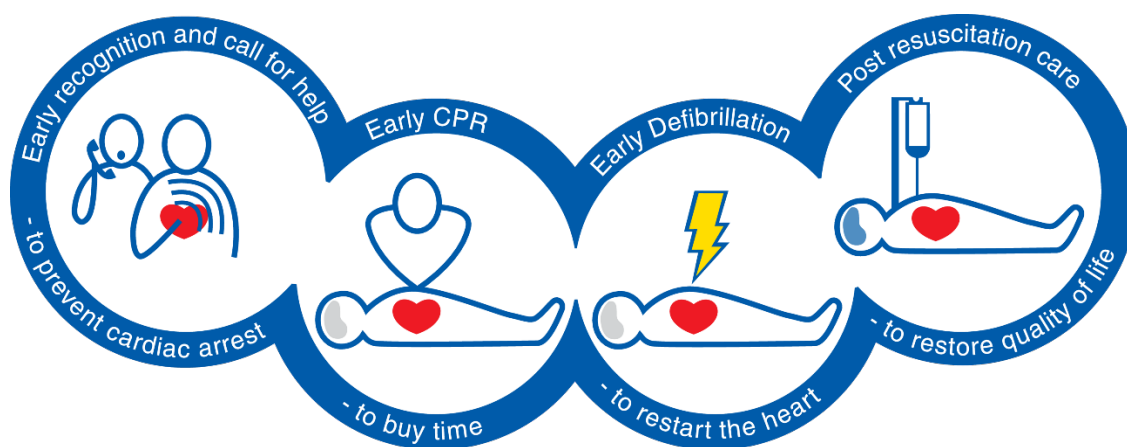


Figure 2: The chain of survival

There are four links to the chain of survival, and these should happen in order. When carried out quickly, they can drastically increase the likelihood of a person surviving a cardiac arrest. They are:

1. **Early recognition and call for help** – dial 999 to alert the emergency services. Place your phone on speaker so your hands are free. The emergency services operator can stay on the line and advise on giving CPR and using a defibrillator.
2. **Early CPR** – to create an artificial circulation. Chest compressions push blood around the heart and to vital organs like the brain. If a person is unwilling or unable to perform rescue breaths (also known as ‘mouth to mouth’), they may still perform compression-only CPR.
3. **Early defibrillation** – to attempt to restore a normal heart rhythm and hence blood and oxygen circulation around the body. Some people experiencing a cardiac arrest will have a ‘non-shockable rhythm’. In this case, continuing CPR until the emergency services arrive is paramount.
4. **Early post-resuscitation care** – to stabilise the patient.

Anyone is capable of delivering stages 1 to 3 at the scene of the incident. It is important to emphasise that life-saving interventions such as CPR and defibrillation (stages 2 and 3) are only intended to help buy time until the emergency services arrive, which is why dialling 999 is the first link in the chain of survival. Unless the emergency services have been notified promptly, the person will not receive the post-resuscitation care that they need to stabilise their condition and restore their quality of life (stage 4).

The chain as a whole is only as strong as its weakest link. Defibrillation is a vital link in the chain and the sooner it can be administered, the greater the chance of survival.

Defibrillation and cardiopulmonary resuscitation (CPR)

When a person suffers a cardiac arrest, it is essential to call 999 immediately and for effective CPR to start as soon as possible. The person performing CPR should not stop except where this is necessary in order to attach the pads or when instructed to do so by the defibrillator, usually before it delivers a shock. If possible, someone else should attach the pads to the patient while CPR continues. Please check the advice on your device for the preferred pad placement.

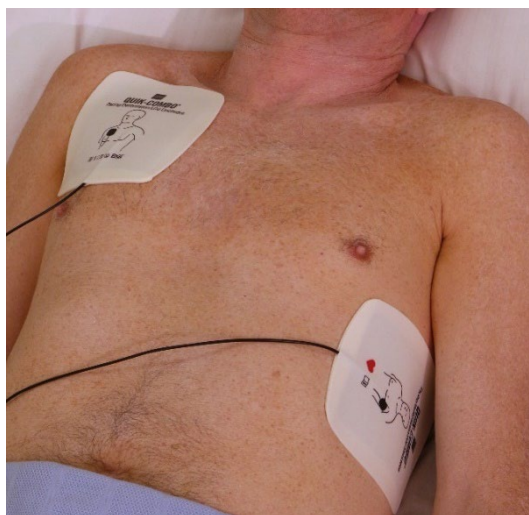


Figure 3: Adult defibrillator pad placement



Figure 4: Example 1 – paediatric defibrillator pad placement (for use on children aged up to 8 years of age or weighing under 25 kg)⁵

⁵ The aim is to place the pads so that the heart is in a direct line between the faces of the two pads. In infants and small children, it is best to apply the pads to the centre of the chest, one on the child's front and one on the child's back (see Figure 5 overleaf), if they cannot be separated adequately in the standard positions shown here (in Figure 4).

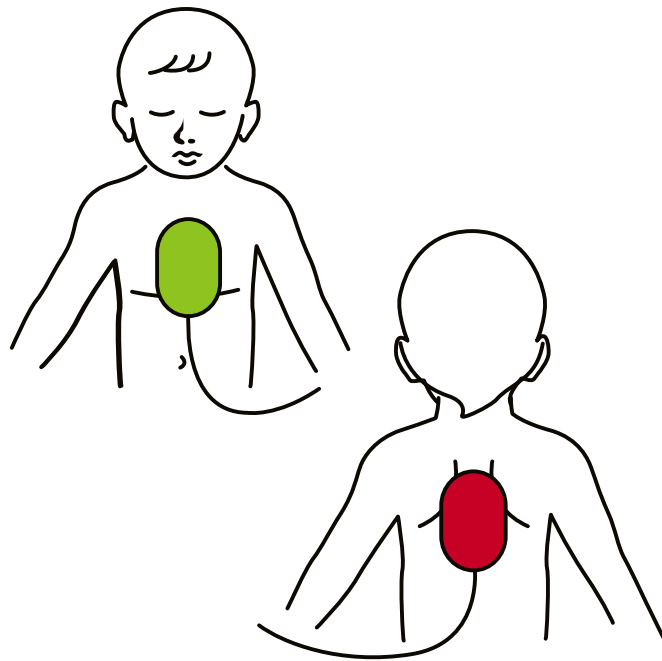


Figure 5: Example 2 - paediatric defibrillator pad placement (for use on children aged up to 8 years of age or weighing under 25 kg)

If you are alone, you should not retrieve a defibrillator and instead, stay with the person in cardiac arrest and perform CPR as the ambulance service will bring a defibrillator to you.

Cardiopulmonary resuscitation (CPR)

It is important to do CPR when someone has a cardiac arrest. You should use the skills and sequence you have been taught or are aware of, even though administering CPR is different depending on the age of the person suffering cardiac arrest. The basic steps for CPR on adults and children are outlined below and the ambulance call dispatcher will help you when you call.

More information on how to administer CPR can be found in the [Other publications](#) and [Free resources](#) section.

CPR for adults

The below steps outline basic CPR for adults aged 18 years and older:

1. Call 999 or 112 for emergency help.
2. Give 30 chest compressions at the rate of 100-120 beats per minute.
3. Give 2 rescue breaths if trained and/or willing to do so.
4. If no rescue breaths are given, you should do continuous chest compressions.
5. Use a defibrillator if available.
6. Continue CPR (either 30 chest compressions and 2 rescue breaths or continuous chest compressions) until:
 - a. Emergency help arrives.
 - b. The person starts to show signs of life and starts to breathe normally.
 - c. You are too exhausted to continue.
 - d. A defibrillator is ready to use, and you follow the instructions voiced by the device.

CPR for children

The below steps outline basic CPR for children aged 1 to 17 years old:

1. Call 999 or 112 for emergency help.
2. Give 5 initial rescue breaths.
3. Give 30 chest compressions at the rate of 100-120 beats per minute.
4. Use a defibrillator if available.
5. Continue CPR at a rate of 30 chest compressions followed by 2 rescue breaths until:
 - a. Emergency help arrives.
 - b. The person starts to show signs of life and starts to breathe normally.
 - c. You are too exhausted to continue.
 - d. A defibrillator is ready to use.

Purchasing a defibrillator

In view of the vital role that defibrillators can play in saving the lives of pupils, staff and other users of school premises, the Department for Education is providing state-funded schools in England with defibrillators, where existing provision is not already in place. The department is also encouraging all other education settings to consider purchasing these devices as part of their first aid equipment.

For schools and other eligible settings that would like assistance to do this, the Department for Education, working with NHS Supply Chain, has negotiated an arrangement for schools to purchase defibrillators at a reduced cost. The devices on offer must meet the minimum specification provided at [Appendix A](#). Current prices can be obtained by contacting Aero Healthcare Ltd directly on 01403 599209 or emailing d4s@aerohealthcare.co.uk

The package includes:

- 1 x Automated External Defibrillator (AED)
- 1 x Adult and Paediatric Pad-Pak (combined unit of battery and electrodes)
- 1 x AED Wall Sign
- 1 x Carry Case
- 1 x User Manual
- 1 x Quick Reference Card
- 1 x Training Video
- 1 x AED Prep Kit (includes CPR Face Shield, Clothing Scissors, Prep Razor, Gloves and Towel).

Replacement consumables may also be available to users of these arrangements at reduced cost. Further information can be found in the 'Replacing consumables' section in [Appendix B](#).

Purchasing additional defibrillators is entirely voluntary and there is no requirement to do so via NHS Supply Chain. Should schools or other settings decide to purchase a defibrillator from another supplier, they may find the minimum specification attached in [Appendix A](#) helpful when assessing their needs and to ensure that the defibrillator they wish to purchase represents value for money. They may also wish to consult their local ambulance service, who will be able to provide details of any preferred models currently used in the local area.

It is possible that local ambulance services and/or voluntary and community sector organisations may be able to support funding for community-access defibrillators. Schools and other settings wishing to pursue this option are advised to contact the relevant bodies directly.

Ordering through NHS Supply Chain

All schools in the UK, including maintained schools, academies and independent schools, are able to purchase defibrillators from NHS Supply Chain under the arrangements put in place by the Department for Education. The arrangements are also open to:

- sixth form and further education colleges
- maintained and independent nursery schools
- pre-school establishments
- private, voluntary and independent nurseries
- playgroups
- holiday and out-of-school providers.

The arrangements are open to other organisations (such as local authorities, multi-academy trusts and parents' associations) purchasing on behalf of such establishments. Details of the school or other eligible setting will be required at the time of purchase.

To place an order, schools and other educational institutions should contact Aero Healthcare Ltd directly by calling 01403 599209 or emailing d4s@aerohealthcare.co.uk

Aero Healthcare Ltd will ask you to provide:

- the name and address of your school or other eligible setting
- your school's six-digit URN (where applicable)⁶
- the name of your local authority (note that this applies regardless of setting type)
- the type and phase of your school or other setting
- a named contact for further correspondence
- an email address and telephone number.

Once the order has been placed, you will receive a confirmation email from Aero Healthcare Ltd within two working days. Delivery will be direct from Aero Healthcare Ltd and will normally be within two weeks. Should you encounter any issues when purchasing your defibrillator or wish to cancel your order, please contact Aero Healthcare Ltd using the contact details above.

For technical support, please contact the device supplier directly. Contact details for the supplier of each batch can be found in [Appendix B](#).

⁶ You can find your school's URN by consulting <https://www.gov.uk/guidance/get-information-about-schools>

Location and access

Choosing a location

In view of the importance of responding swiftly to a cardiac arrest, defibrillators should be located strategically to ensure that they can be accessed quickly in an emergency. Schools should ensure the location is highly visible and well signposted so that anyone who needs take one to an incident can locate the defibrillator quickly and easily.

Schools may have, or decide to have, several defibrillators to ensure easy access from anywhere on the school premises. Devices should ideally be situated no further than a two-minute brisk walk from the areas where they are most likely to be needed. This could include sports facilities and play areas (physical activity is linked to an increased likelihood of cardiac arrest), as well as the routine locations of any pupils or staff known to have existing heart conditions.

All proposed defibrillator locations should be subject to a risk assessment taking into account:

- availability for timely deployment (including the likely time required to climb stairs, open doors, unlock a cabinet etc)
- health and safety risks (e.g., slip, trip and fall hazards)
- safety and security (e.g., is the area well-lit? Does the location render the defibrillator susceptible to tampering or vandalism and, if so, what measures would be proportionate to counter that risk?).

Schools should always ensure that all defibrillators are registered on The Circuit, the national defibrillator network. This will ensure they are visible to local ambulance services and means someone can be directed to the defibrillator location. You can find more information about The Circuit, including how to register your devices, at:

<https://www.thecircuit.uk>

Consideration should be given to providing access to defibrillators for the local community, where it is deemed appropriate by the school. This could include locating a defibrillator in a cabinet outside the school gates for 24-hour accessibility or placing a defibrillator in an internal cabinet located in the lobby of the sports facility. While an unlocked cabinet is advised for easy access, a locked cabinet may be appropriate when placed outside to minimise the risk of vandalism or theft.

Members of the community may ask to use your defibrillator in an emergency. The department encourages schools to make their defibrillator available in these circumstances, but this is a school decision. The school may wish to accompany their device.

If a defibrillator is temporarily removed from its usual location other than in an emergency (for example, to provide cover at a sports event elsewhere on the school site), it is considered good practice to display a prominent notice to this effect in its usual location, giving details of an appropriate telephone number on which the member of staff who holds the defibrillator can be contacted.

Schools may wish to write the school details, including a contact telephone number, on the back of their defibrillator. This can be done on a sticker or in permanent marker. This will help the ambulance service, hospital staff, or rescuer return the device should it be taken offsite in an emergency.

Installing your defibrillator

Defibrillators are standalone devices and do not require any particular type of enclosure or mounting if they are to be kept in normal indoor conditions.

Cabinets

It may be helpful for defibrillators kept indoors, for example, in a school reception, to keep them in a specially designed wall mount or cabinet to ensure ease of access and visibility. Most manufacturers can supply these, although schools may well find that alternatives from third-party manufacturers are considerably cheaper. Schools should always check that the wall mount or cabinet is the correct size and shape for the defibrillator they have. Wherever defibrillators are located, they should be visible and well signposted to alert people to their location.

If a defibrillator is located outdoors, it should be placed in a thermostatically controlled cabinet in a well-lit area. This ensures the cabinet has a consistent temperature and the defibrillator is kept at an optimum temperature. This is because electrode pads may not function as effectively if they fall below a certain temperature, normally 0°C, although they will still deliver a shock. A thermostatically controlled cabinet will require a power supply and installation by an appropriately qualified professional.

All cabinets and wall brackets should be clearly marked using a standard sign for defibrillators, such as the design recommended by Resuscitation Council UK (see Figure 6 overleaf).⁷

⁷ A different design has been approved by the International Liaison Committee on Resuscitation (ILCOR). Although the ILCOR design meets the relevant legal requirements, its use is not endorsed by the Resuscitation Council UK.



Figure 6: The UK standard sign for defibrillators

It is important to remember that defibrillators can be used with no training. Most defibrillators have visual signage on them instructing the user the actions to take in an emergency.

Carry cases are also available for most defibrillators and their accessories. A carry case will prove useful to hold accessories and spare items. It can also allow the device to be carried over the shoulder, so hands are free. This is especially helpful if the school chooses to temporarily relocate a defibrillator to provide cover at a sporting event, or where schools have multiple defibrillators, for use on school trips.

Locked and unlocked cabinets

Lockable and/or alarmed cabinets are available to deter tampering, but security considerations will need to be balanced against the need to access the defibrillator quickly in an emergency. Where cabinets are placed outside the school, the DfE recommend they should be locked to avoid theft or vandalism. Where schools wish to install an unlocked cabinet outside the school, an alarmed cabinet may represent a good compromise to deter tampering. Internal cabinets placed inside school buildings will not generally require a lock. Schools should consider which solution works best for their individual circumstances when purchasing a cabinet.

Where a lockable cabinet is used, schools should seek advice from the local ambulance service on how best to minimise the delay to the user in accessing the defibrillator.

Options for consideration may include:

- installing a cabinet with a key-based lock and mounting a key in a prominently visible break-glass box next to the cabinet

- installing a coded cabinet, and ensuring that all school staff and the local ambulance service are aware of the access code; a notice should be displayed on the cabinet to inform users that they can obtain the access code by dialling 999
- when the defibrillator is registered on The Circuit, the code for the cabinet will also be registered and will allow the ambulance dispatch service to provide this to the rescuer to avoid delays in access.

Where a cabinet has a code lock, it is very important not to change the code regularly. This will minimise the risk of an outdated code being supplied in an emergency. For this reason, it is also recommended that the code used is one already familiar to school users. Where a code does need to be changed, schools should ensure they update their records and inform The Circuit of the new code at the same time.

Community access

Schools are at the heart of their communities. Where schools want to allow for community access, they may want to consider placing one of their defibrillators in an area that allows it to be accessible to both the school staff and pupils, and their local community. Research shows that the potential benefits of a school defibrillator may be increased by up to 100-fold if the device is positioned so that it is publicly accessible to the community surrounding a school.⁸

An ideal location would be outside the school gates, in a locked and thermostatically controlled cabinet, so that both the school and the local community can easily access it. This would allow the defibrillator to be accessed 24/7, which could help to save lives in the wider community, where cardiac arrests are more likely to occur.

Allowing community access can be particularly beneficial in areas where ambulance response times are typically longer. However, the primary concern should be locating the device where it will best meet the needs of the school, and community access will not be suitable in all circumstances.

Any location chosen for a community access defibrillator should be subject to a rigorous risk assessment in terms of its accessibility in the event of a life-threatening emergency. It is advisable to take sensible measures to reduce the risk of theft and vandalism, but this needs to be weighed up against the risk of slowing down access to the defibrillator in an emergency. Any delay in access could have a detrimental impact on the person having a cardiac arrest. Local ambulance services and/or voluntary and community sector organisations may be able to advise in this regard.

⁸ [Location of out-of-hospital cardiac arrests and automated external defibrillators in relation to schools in an English ambulance service region - PubMed \(nih.gov\)](#)

Schools should make a decision on community access based on their individual circumstances.

Insurance

A school's insurance arrangements will normally cover devices located inside their premises. However, any devices, accessories or cabinets (whether locked or unlocked) located outside the school boundary (defined as the enclosed area containing the school, as opposed to merely the land which is owned by the school) are unlikely to be covered by the school's insurance and will not be covered by the Department for Education's risk protection arrangement (RPA) for participating schools. Therefore, additional insurance should be considered to cover devices located outside the school. If not, the school will be solely responsible for repair or replacement costs in the event of theft or vandalism. Schools should check with their insurance provider before choosing to locate a defibrillator in a publicly accessible location.

It should be noted that ambulance service figures indicate that the incidence of defibrillator theft is generally very low. Defibrillators cannot lawfully be sold without the relevant supporting documentation, rendering stolen devices extremely difficult to sell on.

Registering your defibrillator on The Circuit

What is The Circuit?

The Circuit is a national defibrillator network linked to all ambulance services in the UK. The DfE requests all schools register their devices on the network. Registration is simple and quick and allows the ambulance service to know the exact location and access arrangements for your defibrillator in the event of an emergency.

If your defibrillator is not accessible 24/7, for example, it is only accessible during the school day and/or during term time, or your school chooses to restrict access to those on-site, these access arrangements can be captured on The Circuit. Similarly, if your defibrillator is available outside of school hours, or has a coded lock, these details can also be registered to allow for swift access. This ensures the ambulance service always has the most up to date information for devices they can call upon.

If someone suffers a cardiac arrest, the ambulance service will use The Circuit to find the nearest accessible defibrillator to direct the caller to the correct location to access it. This could be a pupil or staff member inside the school, or for publicly accessible defibrillators, a member of the public.

You can find more information about The Circuit, including how to register your devices, at: <https://www.thecircuit.uk>

Why should you register your defibrillator?

The speed of response is vital when someone has a cardiac arrest. Effective CPR and early defibrillation can double the chance of survival. Registering your device on The Circuit could therefore save a life.

Registering on The Circuit also means you will receive regular reminders to check your defibrillator and change the electrode pads when they have expired.

Each defibrillator needs a primary named guardian linked to it, but you can also nominate people to help you. They are known as Support Guardians, and they will also receive reminders if you don't have time to respond to the emails.

Example scenarios for community access

The following examples illustrate some of the factors which schools may wish to take into account when choosing where and how to install a defibrillator.

Example A

A primary school with approximately 130 pupils is situated right in the heart of a small market town. The local church is opposite, and there are a number of small shops nearby. The school wanted its defibrillator to be available to the wider community. Their local ambulance service advised on a suitable location for the device, and a cabinet to house the defibrillator was installed on an external wall in a location adjacent to the school's main entrance and easily accessible from the road. It takes approximately one minute to get from the playground to the defibrillator, even though there are two doors enroute.

Because the device would need to be accessed quickly in an emergency, the school decided that a locking cabinet would be disproportionate – especially given the relatively low crime rate in the area. They did, however, opt for an alarmed model as a precaution in order to discourage tampering. Because the location is exposed, they also decided that the cabinet should be heated.

The school drew up an action plan, so that staff would know what to do if someone had a cardiac arrest. The school also added the defibrillator to The Circuit, so that 999 operators could direct callers to it, if required, and talk them through how to use it.

Example B

An urban secondary school has around 1,800 pupils and is housed in a number of buildings on a single site. They carried out a risk assessment which determined that a single defibrillator would be insufficient for their needs. The school therefore purchased

three defibrillators and located these at key strategic points on the school premises, with clear signage to ensure that they can easily be found in an emergency.

Because there is a link between physical activity and an increased likelihood of cardiac arrest, the school placed the first defibrillator just inside the PE block, adjacent to the gym and overlooking the playing fields. With the exception of the gym, the PE block is frequently left unattended, so the school decided to house the device in a non-lockable, alarmed cabinet to deter tampering.

The second defibrillator was located in a connecting corridor between the science and humanities blocks. This is at the heart of the school and can be accessed quickly from a large number of classrooms. The corridor is heavily frequented by both staff and pupils so it was decided that there was no need for the cabinet to be alarmed.

The third defibrillator was sited in the reception area, close to the school hall and the classroom of a member of staff who had recently suffered a heart attack. Although easily accessible, this area is rarely visited by pupils, but the reception desk is almost always attended during school hours. The school therefore chose to install this defibrillator in a simple wall mount, as the risk of tampering is low.

All the defibrillators were registered with The Circuit, and the ambulance service were able to offer CPR training, including raising awareness on how to use a defibrillator, to a small number of school staff, which they disseminated to other staff. The school also drew up a procedure for staff to follow in the event of an emergency.

Case studies of community access

Case Study A – Stuart’s story



Figure 7: An external defibrillator cabinet

Stuart is a School Premises Manager at a secondary school in a village. The principal at Stuart’s school decided to purchase a defibrillator and a heated external public access

cabinet. This meant the defibrillator could easily be accessed by the staff and pupils at the school and would also be available 24/7 for their local community.

When the defibrillator and cabinet arrived, Stuart placed them in storage. Two weeks later, he remembered the defibrillator needed to be set up, so installed the battery ready to use.

The next day whilst working, a student ran up to Stuart saying that his son had collapsed on the playing field. Running outside, Stuart could see the receptionist performing CPR on his son. A bystander called 999 and Stuart called to nearby students to fetch the defibrillator. Within 3 minutes, he was able to open the defibrillator and start using it on his son.

Although the situation was stressful, Stuart found the instructions on the defibrillator clear and simple. The defibrillator gave voice commands for every step, and this reassured Stuart on what to do.

By following the voice instructions and pictures on the defibrillator, Stuart placed the defibrillator pads on his son. The defibrillator automatically analysed his son's heartbeat. Detecting no heartbeat, it advised everyone to stand clear and delivered a shock. It then instructed Stuart to continue with CPR. When the defibrillator analysed his son's heartbeat for a second time, no shock was advised, and the defibrillator issued instructions to continue CPR.

After four cycles of defibrillator analysis and continued CPR, the police, local ambulance and air ambulance arrived. Stuart's son was airlifted to hospital, where he received a triple heart bypass. His collapse was due to an undetected heart problem which restricts an oxygen supply to the heart. The condition has no warning signs and is worsened by physical exertion.

Stuart said, "I knew there was hope when the defibrillator came out. It was so lucky I set the defibrillator up when I did. We've registered our defib on The Circuit, the national defibrillator network, so that local ambulance services know its location, and 999 call handlers can direct bystanders to its exact location. We also get reminders from The Circuit when the batteries and pads need replacing."

Thankfully, Stuart's son has made a full recovery and has been able to return to normal sporting activities. The school's defibrillator is kept in the external unlocked cabinet near reception, using the power supply from within the school. The defibrillator is checked once a month to ensure no fault lights are displaying. The school have since run several 'Heart Start' sessions for the community, in partnership with the British Heart Foundation, so that everyone knows where the defibrillator is kept and how to use it as part of CPR.

Case Study B – David’s story



Figure 8: An open defibrillator

A primary school on the Wirral purchased a defibrillator from The Oliver King Foundation. The charity organised a session with the school to demonstrate how the defibrillator worked. The school placed the defibrillator near the main entrance, so it was easily accessible to everyone in the school.

One month after the defibrillator was delivered, the school’s caretaker, David, suffered a heart attack in the staff room.

Staff immediately called 999 and started to deliver CPR and use the defibrillator straight away. Staff followed the clear step-by-step voice prompts to attach the defibrillator pads to David’s chest. The defibrillator automatically analysed his heart rate to deliver a shock. The ambulance arrived shortly after and took David to hospital, where he made a full recovery.

The headteacher of the school said, “I’ve no doubt in my mind [that] if we hadn’t had the defibrillator in school then our caretaker wouldn’t still be with us. That’s how important it is that this equipment is in as many places as possible and that members of the public know they are there.”

Training

Is training required?

Defibrillators, as work equipment, are covered by the Provision and Use of Work Equipment Regulations 1998 (PUWER). As such, this places a duty on employers in

respect of employee training and the provision of information and instructions in the use of such equipment. However, defibrillators are designed to be used by someone without any specific training, by following step-by-step instructions on the defibrillator at the time of use. It should therefore be sufficient for schools to provide a short general awareness briefing session to staff in order to meet their statutory obligations. Schools may want to use this opportunity to raise awareness of the defibrillator in the school and to promote its use should the need arise.

Awareness briefing may also be incorporated into any wider training on CPR and the links of survival.

Raising awareness

It is good practice to raise defibrillator awareness, along with CPR training, across the entire school community to ensure that there is a greater likelihood of being able to assist someone suffering a cardiac arrest in time to save their life. When people are aware of how simple defibrillators are to use, they are typically more confident using them when needed.

First aid is part of the health education curriculum which is mandatory for all schools in England.⁹ In primary schools, this covers basic first aid, including how to dial 999 and put someone in the recovery position. In secondary schools, this also includes lifesaving skills, such as how to administer CPR, and when a defibrillator might be needed. Schools may wish to incorporate further defibrillator awareness materials to support this, such as those listed in this guidance under [Other publications](#) and [Free resources](#) and [External organisations](#).

Schools may want to consider using/contacting organisations such as the local IMPS (Injury Minimization Programme for Schools) programme, Arrhythmia Alliance, the British Red Cross, the Royal Life Saving Society UK and St John Ambulance, who may be able to provide suitable resources and/or training. Their contact details can be found under [External organisations](#).

Secondary school pupils and older primary school children are generally capable of sufficiently compressing the chest to the correct depth and speed in order to successfully administer CPR. CPR training can also give children the confidence and skills to talk an adult through the administration of CPR.

Younger primary-aged children frequently lack the physical strength to carry out CPR on adults, so general first aid awareness may be considered more appropriate for this age

⁹ <https://www.gov.uk/government/publications/relationships-education-relationships-and-sex-education-rse-and-health-education>

group. Schools may wish to familiarise primary-age children with the onsite defibrillator as part of their first aid awareness.

Schools may also choose to make their facilities available to host CPR and defibrillator awareness sessions for members of the local community. This may be of particular benefit where the school has chosen to make a defibrillator publicly accessible.

British Heart Foundation CPR training pack for secondary schools

As part of its work to help people survive an out-of-hospital cardiac arrest, the British Heart Foundation is offering CPR training packs free to all secondary schools in the UK. Each school that applies will receive a pack of up to three Call Push Rescue training kits, each containing 10 lightweight manikins and an online 30-minute instructional video which includes familiarisation on the use of defibrillators – enough to allow every young person in a class to learn CPR first-hand.

Secondary schools can order kits through the British Heart Foundation website. Many schools now have these kits, but if you are unsure if your school has applied, please contact the British Heart Foundation using the details in [External organisations](#).

For anyone across the school community who is interested in learning CPR and how to use a defibrillator, the British Heart Foundation has introduced RevivR. This 15-minute online training is free for all and teaches how to recognise a cardiac arrest and increase confidence in giving CPR and using a defibrillator. See [Free resources](#).

Sources of information

Many local ambulance services are able to advise schools on accessing free or low-cost training in the use of CPR and awareness of defibrillators.¹⁰ In some areas, this role may instead be fulfilled by the local IMPS programme.¹¹ Schools may also be able to access further resources through their local authority.

Many voluntary and community sector organisations also offer awareness raising courses. A number of such organisations can be found under [External organisations](#) in this guidance, although it should be noted that not all of those listed will offer the same service.

Defibrillators provided by the department come with a QR code so that schools can access information on their defibrillator.

¹⁰ A list of local ambulance services, including contact details, can be found on the NHS Choices website at <http://www.nhs.uk/servicedirectories/pages/ambulancetrustlisting.aspx>

¹¹ For information on local IMPS programmes, please visit <http://www.impsweb.co.uk>

For defibrillators provided by other manufacturers, schools may also wish to contact the supplier directly to ask what material is available through them. Other private sector training providers are also available.¹²

Additional considerations

Developing an action plan

Schools should develop and implement a resuscitation action plan to facilitate a swift response to incidents of cardiac arrest. This might cover issues such as how to initiate the chain of survival and how to keep children away from the scene.

A resuscitation plan may also set out best practice, including how and by whom tasks should be carried out. For example, if one person is on the scene, they should immediately call the emergency services (step 1 of the chain of survival) and start CPR immediately afterwards (step 2). If two people are on the scene, one should call the emergency services while the other starts CPR. The person administering CPR should not leave the casualty unless absolutely essential. Where possible, it is suggested that arrangements are implemented to enable the defibrillator to be brought to the scene by someone already close to its usual location, as this is likely to be quicker than sending somebody to fetch it. If this is not practical, the rescuer should remain with the casualty and a second individual should be sent to fetch the defibrillator.

When developing a resuscitation plan, schools may find it helpful to refer to the chapter entitled 'Adult basic life support Guidelines' in the Resuscitation Guidelines 2021. A downloadable basic life support poster is also available. A link to these can be found under [Other publications](#).

After an incident

Assisting someone who has suffered a cardiac arrest can be a stressful experience for the rescuer. Schools are best placed to understand what support may be most appropriate for their staff and pupils and should have standard operating procedures in place, including aftercare, should an incident occur. Should a rescuer need support after an incident, they may be able to request a debriefing from the local ambulance service. Alternatively, they can seek help from their GP.

Support is also available through the [mental health gov.uk page](#). This brings together information about the various mental health support offers available to schools and colleges. This includes specific guidance and signposting for supporting staff and pupils'

¹² For details of the considerations a school may wish to take into account when selecting a private sector training provider, please visit <http://www.hse.gov.uk/firstaid/approved-training.htm>

mental health and wellbeing. It includes Education Support's free 24-hour helpline dedicated to staff working in education.

Most defibrillators will store data, which can subsequently be used to assist with ongoing patient care. Schools should therefore contact the local ambulance service after a defibrillator has been used and make arrangements for the data to be downloaded. In the meantime, the defibrillator may still be used if required, but care should be taken not to erase the data. Each school should be aware of how to download or who to ask to download the recorded data.

Schools should ensure that the defibrillator is ready for use again by replacing pads, batteries and other consumables as required, and ensure that it is not displaying any warning lights or messages. More information on purchasing consumables can be found in [Replacing consumables](#) and [Appendix B](#).

Schools should also be aware that where a cardiac arrest occurs as a result of an accident or act of physical violence arising out of or in connection with work, this may constitute a reportable incident under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). Reporting requirements will differ according to whether the individual suffering the cardiac arrest is an employee (e.g., a teacher or member of support staff) or a non-employee (e.g., a pupil, parent or visitor). Further information can be found in the Health and Safety Executive guidance on incident reporting in schools¹³.

Safety considerations

Defibrillators are safe to use for all those involved and will give a verbal warning instructing the rescuer to stand back when analysing heart rhythm and prior to delivering a controlled electric shock. A rescuer may accidentally be subjected to a defibrillation shock if he or she does not heed this warning, but this is unlikely to cause significant harm.

The Mediana A-15 defibrillator supplied by the department is suitable for adult and paediatric use and comes with universal pads that can be used for both, except on children under 12 months.

Standard defibrillators are suitable for use on people of all ages, except small children aged under 12 months. For children aged 1 to 8, where universal pads are not supplied, it is recommended that defibrillators are used in paediatric mode or with paediatric pads. However, adult pads may be used if paediatric pads are not available.

Rescuers should not hesitate to use a defibrillator on a pregnant woman in cardiac arrest, as resuscitation of the pregnant mother is the only way to keep her unborn child alive.

¹³ Available online at <http://www.hse.gov.uk/services/education/index.htm>

Early defibrillation can therefore help provide the best chances of survival for both the unborn child and the mother. When calling 999, you should notify the operator that the casualty is pregnant as this may determine which response crew/vehicle is required.

Legal considerations

The DfE understand that schools may have concerns about the legal risks – if any – of attempting resuscitation and using a defibrillator. Ensuring your school has a plan to make staff and pupils aware of the links of survival and when to use a defibrillator will make sure you are prepared in the event of an emergency. Schools may find it helpful to refer to the Resuscitation Council UK and its associated publications, for example, ‘Cardiopulmonary resuscitation, automated defibrillators and the law’.¹⁴

¹⁴ Available online at <https://www.resus.org.uk/library/publications/publication-cpr-aeds-and-law>

Accessories and consumables

Every defibrillator should be kept with a number of accessories/consumables to ensure that it is always ready for use.

Item description	Generally supplied with defibrillators as standard?	Notes
Electrode pads	Adult: yes Paediatric: no ¹⁵ Universal: yes	<p>These are adhesive pads which are applied to the casualty's chest and through which the shock is delivered. They will include a cable for connection to the defibrillator.</p> <p>Most defibrillators require separate pads for adult and paediatric use (children aged 1 to 8). Where this is the case, schools should ideally put arrangements in place to ensure that they have at least one set of each available and that these are stored with the defibrillator. If paediatric pads are not available in an emergency situation, adult pads can and should be used.</p> <p>Schools should pre-connect adult pads to a defibrillator to ensure that the device is ready to use more quickly in the event of an emergency. Most defibrillators require pads to be preconnected in order to conduct regular self-tests. Paediatric pads are not recommended for pre-connection as the majority of cardiac arrests occur in adults and paediatric pads will be ineffective if used on an adult.</p> <p>Pad positioning will generally be shown on the defibrillator or the pad packaging. The pads themselves may be labelled 'left' and 'right', but it does not matter if they are accidentally inverted – they will still work.</p>

¹⁵ Where separate paediatric pads are required, these are not generally included with a defibrillator at the time of purchase. All suppliers providing defibrillators via NHS Supply Chain must, however, include a set of paediatric pads as standard, if required.

Item description	Generally supplied with defibrillators as standard?	Notes
Key for switching between adult and paediatric modes	No ¹⁶	Defibrillators that do not require separate adult and paediatric pads will sometimes have a switch or require a key to switch between adult and paediatric modes.
Scissors	No	These will enable rescuers to cut away a casualty's clothing if required. Make sure these are able to cut through material/clothing.
Protective gloves	No	Rescuers may wear protective gloves to guard against infection if desired, but these are not necessary. The risk of infection is very low.
Towel or dry wipes	No	If the casualty is wet, a towel or dry wipes should be used to dry the chest in order to ensure that the pads are able to adhere properly. Pads need to have good contact with an individual's skin in order to effectively analyse their heart rhythm.
Safety razor	No	Pads are designed to function with chest hair, but excessive amounts may prevent them from adhering to the casualty's chest and impair conductivity. In these situations, a safety razor should be used to dry-shave excessive chest hair where the electrodes are to be applied.
Pocket mask/ face shield	No	<p>Rescuers may use a pocket mask or face shield to guard against infection while administering rescue breaths if desired, but this is not necessary. The risk of infection is very low.</p> <p>If a person is unwilling or unable to perform mouth-to-mouth resuscitation, they may still perform compression-only CPR.</p>

¹⁶ Defibrillators that require a key will not generally include this in the purchase price. All suppliers providing defibrillators via NHS Supply Chain must, however, include a key as standard if one is required.

Schools are advised to keep minimum supplies of spare electrode pads, protective gloves, safety razors, pocket masks/face shields and dry wipes (if applicable) on-site so that the defibrillator is not left unusable whilst awaiting replacements. Further information on consumable shelf life can be found in the [Replacing consumables](#) section.

Maintaining your defibrillator

Regular checks

Modern defibrillators undertake regular self-tests and, if a problem is detected, will indicate this by means of a warning sign or light on the machine. Schools should ensure that they have a procedure in place for defibrillators to be checked for such a warning on a regular (and no less frequently than weekly) basis, possibly by a designated person, and have a method for recording when a check has taken place.

If defibrillators are kept in an internal or external cabinet, schools should also regularly check the condition of the cabinet, including the door closure and any lock.

Schools should consult the user manual of their defibrillator to ensure that they are aware of what to look for and what remedial action will need to be taken in the event of a fault. Any fault which occurs during the defibrillator's warranty period and for which a solution cannot be found in the manual should be reported to the manufacturer immediately. Contact details to obtain technical assistance for devices provided by the department's defibrillator programme and devices purchased via NHS Supply Chain be found in [Appendix B](#).

Many defibrillators may require schools to perform some additional monthly and/or annual checks to ensure that they are functioning correctly. Schools should consult the user manual for details and ensure that they have appropriate arrangements in place. Failure to perform these checks could potentially mean that the defibrillator fails to function properly when needed. Further advice on the purpose of such inspections can be found in the Provision and Use of Work Equipment Regulations 1998 (PUWER), regulation 6.

Defibrillators do not normally require regular servicing by a suitably qualified technician. Schools may wish to enquire about servicing costs when discussing their requirements with suppliers, in order to rule out any devices which will require chargeable maintenance to be carried out during the defibrillator's standard warranty period.

Replacing consumables

Pads, safety razors, protective gloves and pocket masks need to be replaced after every incident. Some manufacturers may also advise that the battery is replaced after an incident, whether or not the charge level on the battery indicator is showing as low; schools should check the device user manual for details.

Even when an incident has not taken place, batteries and pads have finite service lives, and should be replaced after the period of time specified by the manufacturer. This will usually be upon reaching the expiry date indicated on each consumable, or in the case of batteries, when the battery indicator shows that the battery is low – whichever is the sooner.

Care should be taken to ensure that replacement consumables are the correct ones for the device. Consumables designed for different defibrillators are not usually compatible with one another.

NHS Supply Chain has negotiated special arrangements with suppliers, enabling schools and other settings which have purchased defibrillators through the arrangements put in place by the Department for Education to obtain discounts on consumables such as batteries and pads throughout the standard warranty period. To take advantage of these arrangements, please refer to the contact details in [Appendix B](#). When ordering, you will need to mention that you have purchased your defibrillator via the DfE defibrillators for schools' arrangement.

Defibrillators supplied by the department will be provided with batteries and pads throughout the lifecycle of the device (8 years). Schools do not need to place orders for replacement batteries or pads. Deliveries will be made automatically at the end of the previous battery or pad lifecycle. If you experience a fault, you can contact Lyreco using the details in [Contact details for defibrillators supplied by DfE](#) section.

Software updates

The UK and European resuscitation guidelines are updated as and when new evidence is available. This may mean that it is necessary to update the defibrillator software accordingly.

Where defibrillators are registered on The Circuit, schools will be notified directly to advise when new software updates are required.

The manufacturer of the defibrillator should be able to arrange to update the software, possibly in partnership with the local ambulance service. All suppliers providing defibrillators through the department's defibrillator programme and via NHS Supply Chain must agree to provide such updates to schools free of charge.

Replacing your defibrillator

Defibrillators have an anticipated service life, details of which should be included in the device's accompanying documentation. If not, please contact the supplier or manufacturer for details. Schools should note that the anticipated service life will not necessarily be the same as the warranty period, which may well be shorter. Some manufacturers may offer to extend the warranty for a fee.

Resuscitation Council UK recommends that defibrillators are replaced once they reach the end of their anticipated service life, as do many manufacturers. Ultimately, this is a decision for the school. Defibrillators will need to be replaced once batteries and pads cease to be available.

Fact check

Below are some common myths and misconceptions when it comes to defibrillators. Schools may find it helpful to build some of these questions into the awareness raising material.

Myth: you can accidentally shock someone with a defibrillator.

Fact: When defibrillator pads are placed on a person, they will automatically read their heartbeat and will only deliver a shock if the person's heart is not beating.

Myth: only people who've had training can use a defibrillator.

Fact: Defibrillators are designed to be used by anyone with no prior training. Most defibrillators talk to the user and guide them through the steps they need to take once the defibrillator has been opened. Most defibrillators also have pictures on the front of the device and on the pads to help you.

There are many resources available to help raise awareness on how defibrillators are used and when one might be needed. Most CPR training also covers the use of defibrillators.

Myth: defibrillators are complicated.

Fact: This is incorrect. Swift action is key when using a defibrillator. Defibrillators have been designed to be easy and straightforward to use, guiding users through the process.

Myth: only adults can use defibrillators.

Fact: Defibrillators can generally be used by people of any age, provided they are old enough to understand the instructions.

Since September 2020, all state-funded schools in England have been required to teach Health Education. In primary schools, this covers basic first aid, including how to dial 999 and put someone in the recovery position. In secondary schools, this also includes lifesaving skills, such as how to administer CPR, and when a defibrillator might be needed. This ensures that pupils are aware of defibrillators and when to use one.

Myth: you need to keep detailed records every time the defibrillator is used.

Fact: Any use of a defibrillator in an emergency has the potential to save a life. They are intended to be used to increase the chance of survival whilst the emergency services are

on their way. You should always follow the instructions on the defibrillator and given by emergency services.

The ambulance service may need a copy of the record kept on your defibrillator soon after an incident. This is to help medical teams understand the person's response to defibrillation and to help with their aftercare.

Sources of further information

Department advice and guidance

- Supporting pupils at school with medical conditions: statutory advice for governing bodies of maintained schools and proprietors of academies in England; publication ref. DFE-00393-2014 – <https://www.gov.uk/government/publications/supporting-pupils-at-school-with-medical-conditions--3>
- Guidance on first aid in schools, early years and further education – <https://www.gov.uk/government/publications/first-aid-in-schools>

Other publications

- A guide to Defibrillation; Resuscitation Council UK – <https://www.resus.org.uk/public-resource/defibrillation>
- 2021 Resuscitation Guidelines; Resuscitation Council UK – <https://www.resus.org.uk/library/2021-resuscitation-guidelines>
- Adult basic life support Guidelines; Resuscitation Council UK – <https://www.resus.org.uk/library/2021-resuscitation-guidelines/adult-basic-life-support-guidelines>

Free resources

- National Defibrillator Network - The Circuit; British Heart Foundation – <https://www.thecircuit.uk/>
- Learn CPR in 15 minutes for free with RevivR; British Heart Foundation – <https://revivr.bhf.org.uk/>
- Download and print the updated signage; Resuscitation Council UK – <https://www.resus.org.uk/library/additional-guidance/guidance-defibrillators/guidance-standard-sign>

- Lifesaver; Resuscitation Council UK – <https://www.resus.org.uk/public-resource/how-we-save-lives/lifesaver-learning/lifesaver>
- Scan it. Learn it. Save a life. A new CPQR symbol that could save lives; Resuscitation Council UK – <https://www.resus.org.uk/about-us/news-and-events/scan-it-learn-it-save-life-new-cpqr-symbol-could-save-lives>
- How to use a defibrillator; St John Ambulance – <https://www.sja.org.uk/get-advice/first-aid-advice/how-to/how-to-use-a-defibrillator/>

Local ambulance services

You can find your local ambulance service on the Association of Ambulance Chief Executives' website at: <https://aace.org.uk/uk-ambulance-service/>

External organisations

- Arrhythmia Alliance – <http://www.heartrhythmcharity.org.uk>
- Association of Ambulance Chief Executives – <http://www.aace.org.uk>
- British Heart Foundation – <http://www.bhf.org.uk>
- British Red Cross – <http://www.redcross.org.uk>
- IMPS (Injury Minimization Programme for Schools) – <http://www.impsweb.co.uk>
- Resuscitation Council UK – <http://www.resus.org.uk>
- Royal Life Saving Society UK – <http://www.rlss.org.uk>
- SADS UK – <http://www.sadsuk.org>
- St John Ambulance – <http://www.sja.org.uk>
- The Oliver King Foundation – <http://www.theoliverkingfoundation.co.uk>

Contact details for defibrillators supplied by DfE

All defibrillators supplied by the department are supplied by Lyreco.

Lyreco can be contacted between 8am and 6pm Monday to Friday (excluding bank holidays) on 01952 621508 or by email at WISE.CS.Education@lyreco.com

Appendix A: Defibrillator minimum specification

All devices supplied through NHS Supply Chain must meet the minimum specification below. It is included here for reference in order that schools who wish to make their own purchasing arrangements are able to assess the suitability and value for money of the device they intend to purchase.

Category – General

Item no.	Description
1	The device must be easily transportable in its case with all accessories.
2	The device must have a water ingress protection (IP) rating of 4 or above (as defined in accordance with BS EN 60529:1992 or equivalent).
3	The device must be able to be stored at 0 to 40 degrees C.
4	The device must be able to operate at 0 to 40 degrees C.
5	The device must be able to operate at non-condensing relative humidity levels of 10 to 95%.
6	The device must incorporate a real-time clock and/or the associated software must provide the ability for events to be time-stamped.
7	The device must have a life expectancy of at least 5 years.
8	Replaceable batteries and/or any other replaceable power sources for the device must have a shelf life of at least 3 years.
9	Replaceable batteries and/or any other replaceable power sources for the device must have a life expectancy of at least 2 years once inserted into the defibrillator.
10	The weight of the device including the battery, case and standard accessories must not exceed 4kg.

Category – Power

Item no.	Description
11	The device must be able to operate on a battery-only basis.
12	The device must have a battery shock capacity minimum of 30 full discharges at the maximum energy the device operates at throughout the standard life of the battery.
13	The initial analysis time plus the time to charge and be ready to deliver initial shock must be a maximum of 15 seconds.

Category – Warranty

Item no.	Description
14	The device must have a warranty of at least 5 years.
15	The battery and/or any other replaceable power source for the device must have a warranty of at least 3 years.

Category – Data/Memory

Item no.	Description
16	The device must have the capability to store data on at least one of the following: PC Data Card or internal memory.
17	The device must have data connectivity to an ancillary device e.g., IRDA, USB, wireless, cable, data card, Bluetooth.

Category – Facilities

Item no.	Description
18	The device must have simple controls which can be understood by a non-expert.
19	The device must have both adult and paediatric capability.
20	The device must have voice prompt ability in English including a safety message.
21	The device must have visual prompt ability.
22	The device must have biphasic waveform or a waveform of comparable efficacy.
23	The device must have automatic discharge control to safely discharge unit if charge not used (i.e., when device charged but patient not shocked).
24	The device must be able to shock VF and VT above 150 BPM (adult) and 180 BPM (paediatric).
25	The device must have adult impedance control.
26	The device must have paediatric impedance control.
27	The device must have a low battery level alarm or low battery level indicator.
28	The device must have an indicator confirming self-test success – i.e., indicates safe to use.
29	The device must be able to withstand daily cleaning with a detergent wash and disinfection using a range of nationally available generic disinfection agents without any detrimental effect.

Item no.	Description
30	There must be a carry case available for the device and related accessories.
31	The device must be compatible with the most recent Resuscitation Council UK and/or European Resuscitation Council Guidelines (most recent 2021). If subsequent revisions of the Resuscitation Council UK Guidelines and/or European Resuscitation Guidelines necessitate the need for software upgrades, please confirm these can be made available to customers free of charge.
32	Average time from notification of unit error to repair, replacement or provision of a loan unit/consumables must be no more than two working days.
33	The device must not require any chargeable maintenance during its standard warranty period.

Category – Accessories

Item no.	Description
34	The shelf life of the self-adhesive pads for this device for use on adult patients must be a minimum of 24 months from date of supply.
35	The shelf life of the self-adhesive pads for this device for use on paediatric patients must be a minimum of 24 months from date of supply.
36	The pads must have the ability to be pre-connected.
37	Where a key is required to switch between adult and paediatric modes, this must be included in the purchase price.
38	The purchase price must include (as a minimum) one set of pads or – where separate adult and paediatric pads are available – one set of adult pads and one set of paediatric pads.
39	Outdoor cabinets must have a minimum IP rating of IP65.

Appendix B: support arrangements for defibrillators purchased via NHS Supply Chain

The following contact details can be used to obtain technical support or to place orders for replacement consumables such as batteries and pads.

Batch number	Device	Device availability period	Device warranty period	Telephone number for technical assistance and to order consumables	Opening hours
1	Philips HeartStart FRx	November 2014 to June 2015	8 years	0870 532 9741 (select option 1)	Monday to Thursday 8.30am to 5.30pm; Friday 8.30am to 5.00pm
2	Mediana HeartOn A15 AED	June 2015 to April 2016	5 years	0845 644 8808	Monday to Thursday 8.30am to 5.00pm; Friday 8.30am to 4.00pm
3	Mediana HeartOn A15 AED	April 2016 to June 2017	5 years	0845 644 8808	Monday to Thursday 8.30am to 5.00pm; Friday 8.30am to 4.00pm
4	Mediana HeartOn A15 AED	June 2017 to November 2019	5 years	0845 644 8808	Monday to Thursday 8.30am to 5.00pm; Friday 8.30am to 4.00pm
5	HeartSine 350P	November 2019 until stocks are used up	8 years	01403 599209	Monday to Friday 9.00am to 5.00pm

When ordering consumables, you will need to mention that you have purchased your defibrillator via the DfE defibrillators for schools' arrangement in order to take advantage of the special pricing arrangements negotiated by NHS Supply Chain. Please refer also to the [Replacing consumables](#) section.

Image Credits

Figure 1: British Heart Foundation, The Oliver King Foundation, Resuscitation Council UK and St John Ambulance

Figure 2: Laerdal Medical

Figures 3 and 4: Resuscitation Council UK

Figure 5: Mediana

Figure 6: Resuscitation Council UK

Figures 7 and 8: Creative Commons License



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