

Brays School

Defibrillator Procedures

12th February 2018

These guidelines are based on DfE guidance “Automated external defibrillators (AEDs) - A guide for schools” (June 2017)

An AED is a machine used to give an electric shock when a person is in cardiac arrest, i.e. when the heart stops beating normally.

Location of Defibrillators – Brays School

In view of the importance of responding swiftly to a cardiac arrest, AEDs should be located strategically to ensure that they can be accessed quickly in an emergency.

Devices should ideally be situated no further than a maximum of two minutes' brisk walk from the areas where they are most likely to be needed.

Sheldon: Opposite entrance lobby doors (adjacent to hall door)

Tile Cross: Adjacent to signing in book to left of school entrance



All wall brackets should be clearly marked using a standard sign for AEDs.

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

Training

AEDs, as work equipment, are covered by the Provision and Use of Work Equipment Regulations 1998 (PUWER), and as such this places duties on employers in respect of employee training and the provision of information and instructions in the use of such equipment.

AEDs are designed to be used by someone without any specific training and by following step-by-step instructions on the AED at the time of use.

Staff at Brays School wishing to be trained on a voluntary basis will receive a general awareness briefing and will receive regular updates as appropriate and required.

(Refer to Appendices - Manufacturer's instructions)

Resuscitation action plan

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.

The AED 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 AED.

How to use the defibrillator

The machine gives clear spoken instructions.

- Once the defibrillator is open and in position, all you have to do is follow the spoken instructions. The defibrillator detects the heart's rhythm - it won't deliver a shock unless one is needed.
- You'll need to press the shock button although some fully automatic defibrillators will deliver the shock themselves. You should resume CPR as soon as instructed by the defibrillator (Refer to Appendices for specific AED machine)

After an incident

Assisting an individual who has suffered a cardiac arrest can be a stressful experience for the rescuer. 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. Most AEDs will store data, which can subsequently be used to assist with ongoing patient care. Schools should therefore contact the local ambulance service after an AED has been used and make arrangements for the data to be downloaded. In the meantime, the AED may still be used if required, but care should be taken not to turn it on and off unnecessarily as this could potentially erase the data.

Schools should ensure that the AED is ready for use again by replacing pads and other consumables as required, and ensure that it is not displaying any warning lights or messages.

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)

Safety considerations

AEDs 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.

Standard AEDs are suitable for use on people of all ages, except small children aged under 12 months. For children aged 1–8, it is recommended that AEDs be used in paediatric mode or with paediatric pads.

Rescuers should not hesitate to use an AED on a pregnant woman in cardiac arrest, as resuscitation of the pregnant mother is the only way to keep her unborn child alive. Early defibrillation can therefore help provide the best chances of survival for both the unborn child and the mother. When calling 999, it is advisable to notify the operator that the casualty is pregnant as this may determine which response crew/vehicle is required.

An AED will only administer a shock if the patient's heart is in a shockable rhythm. The application of CPR can maximise the opportunities for defibrillation to be administered effectively. The AED will continue to analyse the patient's heart rhythm after each shock and will provide ongoing instructions about continuing CPR.

Some cardiac arrest patients will not present with a shockable rhythm (i.e. one which is suitable for defibrillation), and the AED will not administer a shock. In such cases, it is essential that CPR is maintained until the emergency services arrive.

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.

Maintenance

Regular maintenance Modern AEDs undertake regular self-tests and, if a problem is detected, will indicate this by means of a warning sign or light on the machine.

Daily checks

A working status indicator

Sheldon – Site manager on arrival to school

Tile Cross – Office staff on arrival to school

Monthly and/or annual checks to ensure that they are functioning correctly / pads (ensure at least 1 spare set) – refer to Manual for details – to be carried out by School First Aiders and recorded in book, including:

- Pads are not opened or expired -
- Accessories like scissors, razor, gloves, pocket mask and wipes are present - SAME FREQUENCY AS FIRST AID BOXES
- Connections are in good condition - ANNUAL CHECK

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 AEDs are not usually compatible with one another.

Software updates

Every five years, new UK and European resuscitation guidelines are issued. This may mean that it is necessary to update the AED software accordingly. The manufacturer of the AED should be able to arrange to do this.

Sources of further information

Departmental 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/supportingpupils-at-school-with-medical-conditions-->

- Guidance on first aid in schools; publication ref. DFEE-20025-2000 –

<https://www.gov.uk/government/publications/first-aid-in-schools>

Other publications

- A guide to automated external defibrillators (AEDs); Resuscitation Council (UK) –

<https://www.resus.org.uk/defibrillators/>

- Resuscitation Guidelines 2010; Resuscitation Council (UK) –

<https://www.resus.org.uk/resuscitation-guidelines/>

Appendices

Cardiac arrest can affect people of any age and without warning. If this happens, swift action in the form of early cardiopulmonary resuscitation (CPR) and prompt defibrillation can help save a person's life.

Research has shown that an individual's chance of survival following the onset of a cardiac arrest decreases by 7–10% for every minute of delay in commencing treatment. 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 little or no first aid training, can therefore buy time until professional help arrives, improving the chance of a successful outcome. Survival rates as high as 75% have been reported where CPR and defibrillation are delivered promptly.

The AED will analyse the individual's heart rhythm and apply a shock to restart it, or advise that CPR should be continued. Voice and/or visual prompts will guide the rescuer through the entire process from when the device is first switched on or opened. These include positioning and attaching the pads, when to start or restart CPR and whether or not a shock is advised.

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. CPR and/or the use of an AED is not appropriate for an individual experiencing a heart attack and who is conscious, as the heart will still be beating, and the device will not administer a shock in these circumstances. However, a heart attack is still a life-threatening situation, and the emergency services should be alerted immediately. A heart attack can also very quickly lead to cardiac arrest, in which case administration of CPR and use of an AED may help to save the person's life.

Cardiac arrest

Cardiac arrest is when the heart stops pumping blood around the body. It can be triggered by a failure of the normal electrical pathway in the heart, causing it to go into an abnormal rhythm or to stop beating entirely. Oxygen will not be able to reach the brain and other vital organs. When a cardiac arrest occurs, the individual will lose consciousness and their breathing will become abnormal or stop.

If basic life support is not provided immediately, the chances of survival are greatly reduced. When a cardiac arrest occurs, CPR can help to circulate oxygen to the body's vital organs. This will help prevent further deterioration so that defibrillation can be administered.

Heart attack

A heart attack (sometimes referred to as a myocardial infarction), is caused by a clot forming in one of the arteries that supply blood to the heart muscle. This prevents oxygen from getting to a particular region of the heart. As a result, cells in this region start to die. The longer this continues the more damage is caused to the muscle.

This damage is permanent. However, as the heart is still beating, CPR and defibrillation are not appropriate.

If a person experiences a heart attack, the correct course of action is to call 999 immediately. The person should be made comfortable, ideally seated on the floor supported by a wall or a person knelt behind them, and reassured until the ambulance arrives.

Heart attacks are very rare among children, but the number of incidents in the adult population means that coronary heart disease (the most common cause of heart attacks) is the leading cause of death in the UK

Common symptoms of a heart attack include:

- chest pain or tightness, like a belt or band around the chest, and which is not relieved by rest
- pain which may spread to neck, jaw, back and arms
- feeling sick, sweaty, short of breath, lightheaded, dizzy or generally unwell along with discomfort in the chest

The chain of survival

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

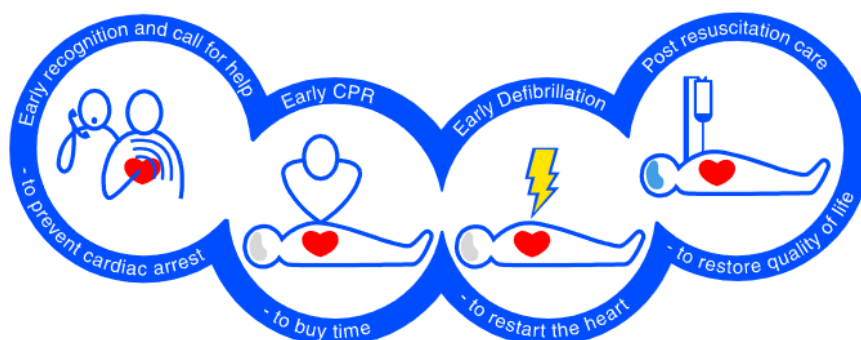


Figure 1: The chain of survival

(Reproduced courtesy of Laerdal Medical)

There are four stages 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.

1. Early recognition and call for help. Dial 999 to alert the emergency services. The emergency services operator can stay on the line and advise on giving CPR and using an AED.
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 mouth-to-mouth resuscitation, he or she 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. However, 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 step 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 for effective CPR to be initiated as soon as possible; only dialling 999 should take precedence. 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 AED, usually before it delivers a shock.

If possible, somebody else should attach the pads to the patient while CPR continues.

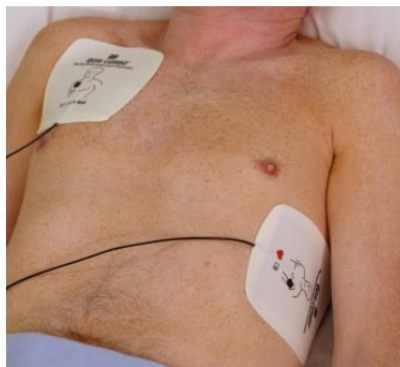


Figure 2: Adult AED pad placement



Figure 3: Paediatric AED pad placement

Reproduced courtesy of the Resuscitation Council (UK)