##### GREEN LANE SCHOOL

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Policy and Procedure for the use of the schools Automated External Defibrillator. (AED)

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Tel: 01925 811617 Date: September 2023

 Review Date: September 2024

Adopted by the Governing Body:

Date:



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2. Introduction.

This policy when implemented should reflect anti-discriminatory practice. Any

services, interventions or actions must take into account any needs arising from race, gender, age, religion and belief, communication, sensory impairment, disability and sexuality.

In the UK approximately 30,000 people sustain cardiac arrest outside hospital and are treated by emergency medical services (EMS) each year. Electrical defibrillation is well established as the only effective therapy for cardiac arrest caused by ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT). The scientific evidence to support early defibrillation is overwhelming; the delay from collapse to delivery of the first shock is the single most important determinant of survival. If defibrillation is delivered promptly, survival rates as high as 75% have been reported. The chances of successful defibrillation decline at a rate of about 10% with each minute of delay; basic life support will help to maintain a shockable rhythm but is not a definitive treatment.

The Resuscitation Council U.K (2010) strongly recommends the implementation of early defibrillation.

The chain of survival concept describes the necessary steps, which if followed, considerably improve the chances of survival.

These steps are:

• Early Recognition

• Call for Help – dial 999

• Early basic life support

• Early defibrillation

• Post Resuscitation Care

The introduction of AEDs – automatic external defibrillation, allows increasing numbers of individuals to perform defibrillation safely and effectively and has

resulted in a realistic strategy for reducing mortality from cardiac arrest.

Emphasis must be placed on the other components; in particular AED users must recognise the importance of calling for the ambulance services.

The main aim of these procedural guidelines is to set standards and practices to ensure early defibrillation is initiated where AED equipment is readily available, thus increasing the chances of survival for victims of cardiac arrest.

1. Definitions/glossary.

**Adult –** Over 8 years.
**Child** – Under 8 years or 55lbs.
**Graphical User Interface** – The step by step pictures on the AED.
**Passive Airway Support System (PASS)** – The cover of the AED, This can be placed under the casualty to open their airway.
**CPR** - Cardiopulmonary resuscitation.
CPR-D padz – Adult electrode pads.
Pedi-padz – Child under 8 electrode pads.

1. Responsibilities.
* Regular checks of the defibrillator – Amy Bradley
* Use of Defibrillator – Any trained staff that are willing to use in the event of an emergency. A first aider must be present.
* First aid procedures i.e. CPR, manually rolling, treatment for injuries – Any first aider on the premises.
* Ensuring a clear space – A member of staff present.
* Gathering the child’s medical information – Office staff.
* Phoning parents/emergency contact – Office staff.
* Escorting the child to hospital in the ambulance – A member of staff may be allocated at that time.
* Care of the staff involved – Head Teacher.

It is the responsibility of the person who has witnessed the accident or with the casualty to shout for the help of a first aider and direct a member of staff to collect the defibrillator. During this time one of the staff involved must phone an ambulance and inform the office staff of what has happened.

This procedure must take place in a clear space away from crowds. A member of staff should make classes aware of what has happened and to not let children pass. This is to ensure the safety and respect of the casualty. If children are present, they should be taken away from the incident.

The casualty must NOT be taken to hospital in a car. The casualty must go in an ambulance. A member of staff should escort the child in the ambulance to hospital until a parent arrives. Parents must be informed of what hospital the child is being taken to.

Staff involved may need a break after the incident and need support from colleagues due to the nature of the procedure.

1. Key themes.

**Indications**

AEDs are designed to treat victims of sudden cardiac arrest. The AED should be used when a victim is found to be unresponsive and not breathing.

In the event of a cardiac arrest defibrillation will take priority to cardiopulmonary resuscitation unless there is a first aider present, where cardiopulmonary resuscitation can be commenced until the AED is brought to the scene, and its use can be initiated.

1. Process and procedure.
	1. **Equipment**

AEDs must be totally reliable, simple to use, of low weight and require minimal maintenance. The defibrillator must have adult electrode pads already connected and another pack of adult electrode pads and pedi pads (infant electrode pads) in the carry case.

Additional items that need to be available within your AED/First Responder Backpack include:

* A face shield.
* A small towel.
* A razor.
* Scissors.

These are all attached to the electrode pads pack.

The victim’s chest must be sufficiently exposed to enable correct AED pad placement, if needed wipe moisture from the patient’s skin.

Chest hair will prevent the pads from adhering to the skin and will interfere with electrical contact. Shave the chest only if hair is excessive and even then spend as little time as possible on this.

* 1. **Sequence of actions.**
1. Shout for help. A first aider will be needed as soon as possible. Ask for a first aider and the defibrillator. **Do not move the casualty.**
2. Assess the situation – age of casualty, any injuries.
3. Change electrode pads to pedi pads if necessary.
4. Switch on the defibrillator.
5. Follow the voice commands given by the defibrillator.
6. If the casualty is unresponsive direct a member of staff to phone an ambulance.
7. Continue to follow voice command.
8. Expose chest – cut clothes and shave chest if needed.
9. Attach electrodes to the casualty as shown in the diagram.
10. Ensure nobody touches the victim.
11. If a shock is needed the voice command will direct you to press the shock button – ensure nobody is touching the victim. *If not shock is advised, first aider to carry out CRP until an ambulance arrives.*
12. First aider to carry out CPR until ambulance arrives or the casualty starts to show signs of regaining consciousness.
13. Continue to listen to voice command.
	1. **Safety during AED use**

**Defibrillation if the victim is wet**

As long as there is no direct contact between the user and the victim when the shock is delivered, there is no direct pathway that the electricity can take that would cause the user to experience a shock. Dry the victim’s chest so that the adhesive AED pads will stick and take particular care to ensure that no one is touching the victim when a shock is delivered.

**Defibrillation in the presence of supplemental oxygen**

If supplemental oxygen is being delivered by a face mask, remove the face mask and remove oxygen tank from the room.

**Minimise interruptions in CPR**

Interrupt CPR only when it is necessary to analyse the rhythm and deliver a shock.

When two rescuers are present, the rescuer operating the AED applies the electrodes while the other continues CPR.

The AED operator delivers a shock as soon as the shock is advised, ensuring that no one is in contact with the victim.

Radio-Frequency interference from devices, such as Mobile phones can cause improper AED operation, and should be switched off near life support equipment.

The AED electrode pads must completely adhere to the patient’s skin, air pockets between the skin and electrode pads can cause patient burns.

The AED may prompt the Operator to “check electrode pads”, if this occurs; re-check all electrical and patient connections. Do not use dried out AED electrode pads.

Attach the AED pads only to the patient’s bare chest; do not allow the AED electrode pads to touch each other or other ECG electrodes. Contact can cause electrical arcing and patient skin burns during defibrillation and it may also divert the defibrillation current away from the heart.

If the AED detects a possible problem with the AED electrode pads or cable, It may alert the Operator with “check electrode pads”, if this occurs remove the pads and replace with a new set.
The voice command on the defibrillator will beep during chest compressions to encourage the first aider to push with the rhythm of the beeps. It will also tell you to “push harder” or “good compressions.”

**AED electrode pad placement in adults and/or children**

Adult AED pads are used on individuals above the age of 8 years or 55lbs.

Place one AED pad to the right of the sternum (breast bone), below the clavicle (collar bone). Place the other pad in the left mid-axillary line, in line with the armpit and below the left breast.

The pads are easy to use and have a picture on the pack to indicate where they need to be placed. CRP-D padz are to be used with an adult or a child over 55lbs.
Pedi-padz are to be used with a child under the age of 8.

The victim’s chest must be sufficiently exposed to enable correct pad placement. Chest hair will prevent the pads adhering to the skin and will interfere with electrical contact.

Shave the chest only if the hair is excessive, and even then spend as little time as possible on this. Do not delay defibrillation if a razor is not immediately available.

Child pedi-padz are suitable for children under 8 years of age, these are placed in the anterior posterior position, with one pad, placed in the centre of the chest between the nipples and the other on the back between the shoulder bones.

* 1. **Maintenance of the defibrillator.**

Weekly checks will be carried out on the defibrillator by a named member of staff. (Ian Wilcock Site Manager) or a Member of the Medical Team
The AED will automatically self test once every 7 days for the battery capacity.
All dates will be checked and new pads will be ordered in advance to the use by date.
If the defibrillator displays a cross on the front display panel, the defibrillator is faulty. Do not use if a cross is displayed. If a fault is found on the status indicator, follow the guidance outlined in the Maintenance, Testing and Troubleshooting section in the AED User Manual.
Any equipment ordered must be purchased from ‘ZOLL medical.’
Only use Duracell batteries. Batteries must be replaced every 3 years. All 10 batteries must be replaced at once.
After each use, the defibrillator must be cleaned and disinfected with a soft damp cloth. Do not immerse in water. Do not use ketones to clean. Avoid using abrasives on the display window.

* 1. **After use.**

After use, the defibrillator must be checked for faults, contamination or dirt. Pads must be disposed of in the outside bins, wrapped appropriately if contaminated.
Upload data from the defibrillator onto the ZOLL administration software.

* 1. **Location.**

The defibrillator will be stored in the bottom draw of the filing cabinet in the medical room and will be clearly signed also a AED outside the Head Teachers Room. There will also be signs around the school to indicate where is stored. All checks, relevant paper work, risk assessment and event report forms are stored with the defibrillator in a red folder and electronically with the Site Manager.

1. Implementation.

School will ensure that appropriate training and education is available to implement this procedure in the form of AED awareness training. We have a Site Manager who is FEC3 (Medic) Trained & Fully competent in refresher/ AED Training every term rather than the HSE recommended annual refresher for First Aid Staff and this covers best practice