AUTOMATED EXTERNAL DEFIBRILLATION Guideline.



Date: 11th June 2014

For review: June 2016

Purpose: To ensure all who may need cardiopulmonary resuscitation in Colaiste Mhuire Co-Ed, Thurles including the use of an automated external defibrillator receive high quality treatment in accordance with the Heartsaver CPR/ AED Programme as recommended by the Irish Heart Foundation /American Heart Association, or in accordance with the Cardiac First Response programme as recommended by the Pre-Hospital Emergency Care Council, Ireland

Applicable to: All staff in Colaiste Mhuire Co-Ed, Thurles who have completed the appropriate training as outlined in this guideline.

Compiled by:	Mary Ryan Maher	Basic Life Support instructor
Signature :		Date:
Approved by:		
Chairperson, E	Board of Management:	
Signature:_Johr	n Kennedy (Chair)	Date:9/6/14
Principal:_Der	nis Quinn	
Signature :		Date:9/6/14
Vice Principal:		
Signature:	Clare Wallace	Date : 9/6/14

Definitions

A.E.D. Automated External Defibrillator. An A.E.D. is a computerised medical device that analyses heart rhythm and will advise the operator if a shockable rhythm is detected. If a shockable rhythm is detected, the A.E.D. will charge to the appropriate energy level and advice the operator to deliver a shock. It is only to be applied to victims who are unresponsive and have no normal breathing.

S.O.P. Standard Operating Procedure

Adult: From puberty upwards. When in doubt treat as an adult.

Child: Someone who is older than one year but has not reached puberty.

Puberty: Breast development in a girl, underarm hair in a boy.

I.H.F/A.H.A: Irish Heart Foundation/American Heart Foundation.

E.R.N: Emergency response number 999 **or** 112.

C.P.R.: Cardiopulmonary Resuscitation

S.C.A. Sudden cardiac arrest

CFRR: Cardiac First Response Report

E.R.N. Emergency Response Number 999 **or** 112

E.M.S Emergency Medical Service

C.A.B Compressions Airway Breathing

Use of Automated External Defibrillator (AED):

Within Colaiste Mhuire Co-Ed School the staff may use the Powerheart AED G 3 with serial number 9390E-1002 provided:

- ❖ The staff hold I.H.F. / A.H.A. Heartsaver Adult C.P.R./A.E.D card or equivalent qualification as certified by PHECC.
- ❖ They follow the AED Operating Guideline as outlined in Appendix I
- ❖ They follow the AED Algorithm as outlined in Appendix II.

It is recommended that members should recertify every 2 years. It is the responsibility of each individual who carries a current Heartsaver Adult C.P.R. & A.E.D. card or equivalent to contact the Principal within Colaiste Mhuire Co Ed and arrange recertification as necessary. Following qualification revalidation is recommended twice yearly. This ensures C.P.R. and AED skill competency.

Authorized Users:

- A list of certified users for Colaiste Mhuire Co-Ed School Thurles, can be found in Appendix III
- Details of certification, revalidation and re-certification of certified users can be found in Appendix IV

Responsibilities:

❖ A.E.D. User Responsibilities - Appendix V

BLS Instructor Responsibilities - Appendix VI

❖ Principal's Responsibilities -Appendix VII

❖ A.E.D Operators Checklist -Appendix VIII & VIIIA

Cardiac First Response Report form -Appendix X

Review of Guideline -Appendix XI

Audit Tool -Appendix XII

References -Appendix XIII

Appendix 1

AED Operating Guideline for Power Heart G3

1.0 Storage

- **1.1.** The Cardiac Science Powerheart AED G3 with serial number 9390E is stored at **RECEPTION** for easy accessibility.
- **1.2.** One Laerdal Pocket mask with two valves are stored beside/near the AED.
- **1.3.** One battery pack is fitted to the unit.
- **1.4.** Two pairs of in-date adult External Defibrillator pads approved for use with Power Heart G3 (one set of in date pads to be attached to AED and spare in date set of pads available within AED Case)
- **1.5.** One Paramedic shears stored in AED case.
- **1.6.** One large absorbent pad for drying the chest stored in the AED Case.
- **1.7** Two pairs of disposable gloves in AED case.
- **1.8** Barrier eye protection 1 pairs of disposable goggles in AED case.
- **1.9** Clinical Waste bag stored in AED case
- **1.10** Check list booklet beside AED
- **1.11** Cardiac First Response Report Formsx3
- 1.12"Instructions for Use" Edition Manual beside AED.
- 1.13 Operating guideline beside near AED

AED Operating Guideline:

2. REQUESTING THE AED IN THE EVENT OF AN EMERGENCY

2.1 The AED should be requested and taken to the side of the unresponsive adult or student.

3. THE SAFETY OF THE AREA, THE RESCUERS AND THE VICTIM

- 3.1 Before opening the AED the rescuer must ensure it is a safe area to use the AED
- 3.2 The victim **must not** be in, or near standing water e.g. very wet pitches, swimming pool.
- 3.3 The victim who is in free standing water **must be** removed from the wet area and have their chest quickly but **thoroughly dried** before powering the unit on and attaching the electrodes.
- 3.4 The immediate surrounding area **must be** completely free of petrol, petrol vapours and solvents
- 3.5 The AED should only be used on those who are unresponsive and not breathing

3.6 The AED must not be used in explosive or volatile atmosphere.

4. LOCATING, TURNING ON AND ATTACHING THE AED TO THE VICTIM

- 4.1 The victim **must be** on his/her back, and on a firm unyielding surface.
- 4.2 The AED **should be** located next to but not touching the victim's side.
- 4.3 The AED **must only** be turned on & attached to a victim who is unresponsive, not breathing.

5 Pad Placement

- 5.1 Power the AED on before attempting pad placement.
- 5.2 C.P.R is continued while pads are applied:

 *Right pad Mid clavicle line to the right of the breast bone-below the collar bone and above the right nipple.
 - Left pad Mid Axillary Line, lateral to the nipple, upper edge of the pad several inches below the left armpit.
- 5.3 For a casualty who is wearing pendants etc. remove them from the area of pad placement before applying the pads. If the pendants are not easily removable (e.g. a nipple stud) place the electrode pads at least one inch away from the object.
- 5.4 For a casualty wearing medication patches, remove the patch and wipe the area clean and dry before applying pads. **Use gloves** dispose safely.
- 5.5 Place AED electrode pads a least one inch away from any device such as an implanted pacemaker or an implanted defibrillator.
- 5.6 If the chest is wet or sweaty wipe it dry before powering on the AED and applying the pads.
- 5.7 If the casualty has excessive hair on the chest, clip or shave prior to pad placement. If the machine advises poor pad contact then press them firmly down on the chest. If machine again advises poor pad contact-remove pads, wipe chest dry and apply second set of pads. .
- 5.8 Cut the bra of female casualties.
- 5.9 <u>Paediatrics</u>: Adult pads to be applied for anyone greater than 8 years of age. If child is less than age years of age and there is no paediatric AED pads then the adult pads may be used. Make sure the pads do not touch other .If a child is very small, you may need to put 1 pad on the child's chest and the other on the child's back.

6. ANALYSING THE RHYTHM AND DELIVERING A SHOCK

6.1 Follow the Power Heart G3 voice prompts, and request of everybody "**Do not touch The Patient**" while the Power Heart G3 automatically analyses the rhythm.

- 6.2 Assertively ensure that everybody will **"stand clear**" of the victim while the AED is charging.
- 6.3 Before delivering a shock, loudly and clearly state while visually checking "I'm clear, you are clear, everybody is clear" or similar words and only when satisfied press the shock button.
- 6.4 If you do not consider it safe to deliver a shock do not deliver it. Power Heart G3 will dump the energy safely into its own capacitor after it is armed for approximately 30 seconds.

7 POST SHOCK PROCEDURES

- 7.1 Follow the Power Heart G3 voice prompts.
- 7.2 Following the delivery of a shock immediately resume compressions.
- 7.3 If the AED indicates "No Shock Advised" continue CPR until the AED prompts you to stop for analysis or until victim moves or the Emergency Medical Services takes over. If victim resumes normal breathing place the victim in the Recovery Position. Reassess victim every 2 mins.
- 7.4 Once the electrode pads were correctly placed and continue to make good contact they **should not be removed** until a higher level of care takes over.

8 RETURNING THE AED TO SERVICE

- **8.1.** As soon as possible following an arrest the data card stored in internal memory to be downloaded by the company -**Fleming Medical** and all the relevant details of the arrest to be made available for audit and record purposes.
- **8.2.** Before the AED is returned to its normal location in order to stand by for further use, the unit and all accessories must be inspected. The unit should be clean and dry and all consumable parts that were used replaced. Complete the Operator's checklist as outlined in **Appendix VIII and VIIIA**
- 8.3. Verify that the status indicator is green as indicate in appendix VIII and VIIIA

Appendix II - AED Algorithm (Puberty onwards)

Heartsaver C.P.R. & A.E.D. OPERATOR

- Check if unresponsive. If unresponsive
- Call emergency number 999 or 112 and retrieve the AED

Start the CAB



Check Breathing -if no breathing or only gasping

Commence Compressions at a rate of at least 100/min

Combine compressions and ventilations – Ratio of 30 compressions to 2 breaths.

Perform C.P.R. until A.E.D. arrives and is ready to attach.

Attempt Defibrillation (AED on scene):



Power on the AED first and follow voice prompts

- Attach AED electrode pads.
- Analyze ("Clear")!
- IF SHOCK Advised: "clear everybody"



After 1st shock perform CPR for 2 minutes (5 cycles of 30 compressions and 2 breaths) until AED analysis again/EMS takes over care of patient or patient moves.

If No Shock indicated



-Perform CPR until EMS takes over or AED advises analysis or patient begins to move.

-if Patient begins to move or starts breathing normally place in recovery position. Leave pads in position and leave AED ON.

Appendix III

AED CERTIFIED USERS

Copy to be given to Reception

AED Location : Reception

Model: Power Heart G3. Serial No: 9390E-1002

The following are certified users of the AED and Acknowledge competency in using the $\ensuremath{\mathsf{AED}}$

Names-PRINT NAME	Signature	Occupation	Telephone
Caoimhe Geaney		Teacher	0504-21734
Deirdre Ryan		Teacher	0504-21734
Julianne Butler		Teacher	0504-21734
Claire Kearney		Special Needs Assistant	0504-21734
Rosino Matassa		Caretaker	0504-21734
Mary Ryan Maher		Teacher	0504-21734

Appendix IV

DETAILS OF CERTIFICATION, REVALIDATION AND RECERTIFICATION OF CERTIFIED USERS - as per Appendix 3

Name	Course	Date	1 st	2 nd	3 rd	4 th	5 th
			Revalid	Revalid	Revalid	Revalid	Revalid
Caoimhe Geaney	Heartsaver AED	27/03/14					
Deirdre Ryan	Heartsaver AED	27/03/14					
Julianne Butler	Heartsaver AED	27/03/14					
Claire Kearney	Heartsaver AED	27/03/14					
Rosino Matassa	Heartsaver AED	27/03/14					
Mary Ryan Maher	Basic Life Support Instructor	2009	2011	2013	2016		

Appendix V

A.E.D. User Responsibilities

- To activate the external response system-by dialling 999 or 112
- To provide prompt B.L.S. including A.E.D.
- To maintain a skill level commensurate with the safe and effective use of the A F D
- To contact the Principal re 2 year recertification
- To attend twice yearly revalidation
- To understand and comply with the requirements of this guideline.
- It is the responsibility of the AED operator <u>who uses the</u> AED to verify the operation status of the AED (status indicator is green)
 - <u>-Before each use:</u> In accordance with the "Operator's Check list" as outlined in Appendix VIII and Appendix VIIIA.

- After using the AED ,It is the responsibility of the A.E.D operator to
 - -verify the 'operation status' of the A.E.D,
 - -perform a maintenance test and
 - -replace any items used from the supplemental equipment that is stored with
 - the A.E.D.in accordance with the 'Operator's Check List' as outlined in
 - Appendix VIII and VIIIA
- It is the responsibility of the trained A.E.D. member of staff who is delegated by the Principal to verify the 'operation status' of the A.E.D on a
 - <u>-weekly basis</u> (during school term) in accordance with the 'Operator's Check List' as in Appendix VIII and VIIIA.
- It is the responsibility of the trained A.E.D. member of staff who is delegated by the Principal to check the supplemental equipment that is stored with the A.E.D on a
 - <u>-Weekly basis</u> in accordance with the 'Operator's Check List' as in Appendix
 - VIII and VIIIA. Any items used/out of date to be replaced.
- It is the responsibility of the trained A.E.D. member of staff who is delegated by the Principal to perform a monthly maintenance test -see Appendix VIII
- It is the responsibility of the trained A.E.D. member of staff who is delegated by the Principal to perform an annual maintenance test see appendix VIII and VIIIA.
- It is the responsibility of each AED operator who performs a check to sign and complete the checklist booklet -Appendix VIII A.

Appendix VI

BLS Instructor Responsibilities

- All documentation pertaining to proof of qualification, revalidation and recertification will be responsibility of the Basic life Support Instructor within Colaiste Mhuire. In the absence of a Basic Life Support Instructor the Principal will be nominee responsible for all training documentation.
- Patient report form and downloaded data from A.E.D. following an event to be stored in locked filing cabinet stored by Principal /Basic Life Instructor /Medical Director (as per clinical record management guidelines set out by P.H.E.C.C.)
- Arrange/Provide debriefing session if required.

Appendix VII

Principal Responsibilities

Compile a rota for the AED operators:-

- to verify the 'operation status' of the A.E.D on a weekly basis as per Appendix VIII and VIIIA
- -to check the supplemental equipment that is stored with the A.E.D on a weekly basis in accordance with the 'Operator's Check List' as in Appendix VIII and VIIIA.
 - -to perform a monthly maintenance test-See appendix VIII and VIIIA
 - -to perform an annual maintenance test -see appendix VIII and VIIIA

Appendix VIII

AED – Operator's Check List and Scheduled Maintenance

Make: Power Heart G3
Serial Number: 9390E-1002

Weekly – (during school term-(*Monday to Friday and after use

* if Monday is a Bank Holiday then it must be done on the following day i.e Tuesday Check the status indicator of the AED. When the indicator is GREEN, the AED is Rescue Ready. This means the AED self-tests have verified the following.

- Battery has an adequate charge
- Pads are properly connected to the AED and functioning
- Integrity of the internal circuitry is good.

Check 'instructions for Use' booklet for further instruction if status indicator not working

Weekly Check &

After each use

- Ensure the exterior of the G3 and the connector socket is free of cracks and signs of damage.
- Check that in date defibrillator pads are connected to the G3 plug when not in use.
- One set of in date defibrillation pads, sealed & undamaged stored in AED case.
- One paramedic shears stored in AED case.
- 2 pairs of disposable gloves in AED case
- One large absorbent pad for drying the chest, stored in AED case (example: a face cloth).
- One Laedal pocket mask.
- Two valves for pocket mask
- Barrier eye protection x1
- Clinical waste bag.
- Instruction manual beside /near AED
- Operating Guideline in place beside/near AED
- Patient Report forms x3

<u>After each use</u>: Perform maintenance check -see next page for details of same.

Appendix V111 continued

AED - Operator's Check List and Scheduled Maintenance

Make: Power Head G3

Serial number: 9390E-1002

Monthly Maintenance of AED (except during holidays)and after each use

- 1. Open the AED lid.
- 2. Waiting for the AED to indicate status: Observe the change of the STATUS INDICATOR to RED. After approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN
- 3. Listen for the voice prompts.
- 4. Close the lid and observe the change of the STATUS INDICATOR to RED After approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN.

<u>Annual</u>

Maintenance of

<u>AED</u>

Perform the following tests annually to confirm that the diagnostics are functioning properly and to verify the integrity of the case, the integrity of the pads and circuitry.

- 1. Open the AED lid.
- 2. Remove Pads.
- 3. Close the lid.
- 4. Confirm the STATUS INDICATOR turns red.
- 5. Open the lid and confirm that the Pad indicator is lit.
- 6. Reconnect the pads and close the lid.
- 7. Make sure the expiration date is visible through the clear window of the lid.
- 8. Check to make sure that the STATUS INDICATOR is GREEN. If the pads are not installed properly, the PAD indicator will illuminate; call Customer Service for assistance.
- 9. Open the lad and confirm that no diagnostic indicators are lit.
- 10. Check the expiration date of the pads; if expired replace them.
- 11. Check the pads packaging integrity.
- 12. Close the lid.

<u>Check the integrity of the Service Indicator (LED) and Circuitry</u>:

- 1. Immediately after opening the AED lid, press and hold the Shock button and confirm that the Service LED is lit.
- 2. Release the Shock/Continue button.
- 3. Close the lid.
- 4. Verify that the STATUS INDICATOR remains red.
- 5. Open the lid and confirm that no diagnostic indictors are lit.
- 6. Close the lid.
- 7. Verify that the status indicator turns green.

Appendix V111 A Sample Copy of Check Lists

Make: Power Head G3 AED

Serial Number: 9390E-1002

Sample Copy of Weekly/After Use Checklist ↓

Date	AED	Event that	Supplemental	Event that	Comments	Signature
Jute	Status indicator: Tick v if green Insert X if red	Prompted Check weekly/before use/after use	Equipment Stored with AED	Prompted check: weekly/after use Tick if supplemental equipment is present and in date. Replace any missing items or items out of date	Comments	Signature

In the event of any problem, which renders the AED non-Operational then the status must be reported to : Principal Denis Quinn

Appendix V111 A continued

After use Maintenance check:

- 1.Open the AED lid.
- 2. Waiting for the AED to indicate status: Observe the change of the STATUS INDICATOR to RED. After approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN
- 3. Listen for the voice prompts.

4. Close the lid and observe the change of the STATUS INDICATOR to RED. After approximately 5 seconds, verify that the

STATUS INDICATOR returns to GREEN

Sample copy of After use Maintenance check

<u>Year:</u> <u>Month</u>	Tick ✓ if 1,23 and 4 are performed as above	Comments	Signature
Date :			
Day :			
Date :			
Day :			
Date :			
Day :			
Date :			
Day :			

In the event of any problem, which renders the AED non-Operational then the status must be reported to: Principal Denis Quinn

Appendix V111 A continued: - Copy of Check Lists continued

Monthly	5. Open the AED lid.
	6. Waiting for the AED to indicate status: Observe the change of the STATUS
Maintenance check of	INDICATOR to RED. After approximately 5 seconds, verify that the STATUS
	INDICATOR returns to GREEN
AED (except during	7. Listen for the voice prompts.
holidays) and after each	8. Close the lid and observe the change of the STATUS INDICATOR to RED After
<u>use</u>	approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN.
Annual	9 Open the AED lid.
	10 Remove Pads.
Maintenance of	11 Close the lid.
	12 Confirm the STATUS INDICATOR turns red.
<u>AED</u>	13 Open the lid and confirm that the Pad indicator is lit.
	14 Reconnect the pads and close the lid.
Perform the following	15 Make sure the expiration date is visible through the clear window of the lid.
tests annually to	16 Check to make sure that the STATUS INDICATOR is GREEN. If the pads are not
confirm that the	installed properly, the PAD indicator will illuminate; call Customer Service for
diagnostics are	assistance.
functioning properly and	17 Open the lad and confirm that no diagnostic indicators are lit.
to verify the integrity of	18 Check the expiration date of the pads; if expired replace them.
the case, the integrity	19 Check the pads packaging integrity.
of the pads and	20 Close the lid.
circuitry.	Check the integrity of the Service Indicator (LED) and Circuitry:
	21 Immediately after opening the AED lid, press and hold the Shock button and
	confirm that the Service LED is lit.
	22 Release the Shock/Continue button.
	23 Close the lid.
	24 Verify that the STATUS INDICATOR remains red.
	25 Open the lid and confirm that no diagnostic indictors are lit.
	26 Close the lid.
	27 Verify that the status indicator turns green.

Sample copy of Monthly Maintenance check of AED

Year:	Tick ✓ if 5,6,7 and 8 as above performed	Comments	Signature

Appendix V111 A continued :- Copy of Check Lists continued

Sample copy of Annual Maintenance check of AED

<u>Year:</u>	Tick ✓ if steps 9- 27 on previous page are performed	Comments	Signature

In the event of any problem, which renders the AED non-Operational then the status must be reported to: Principal Denis Quinn

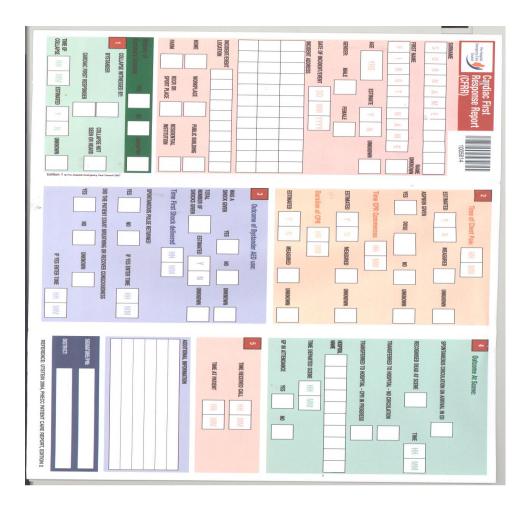
Appendix X

Cardiac Arrest Data Sheet AED Responder

The Cardiac Report Form is a **two part** document.

Part 1 or top copy to go with patient to hospital/destination facility. The Responder should give the completed copy to the practitioner who is transporting the patient.

Part 2 or second copy to remain as a record with the Responder Organisation i.e. Colaiste Mhuire Co-Ed.



Appendix XI

Review of guideline

This guideline will be reviewed every two years or more frequently if required to reflect changes in regional or national policies as well as in accordance with changes in legislation.

Audit Tool

-Appendix XII

	Status	Comment
		Action
Does Colaiste Mhuire Co-Ed have a written plan for the AED?		
Does the plan accurately reflect current practice?		
Is the AED located in an environment as per manufacturer's		
instructions?		
Is the AED visible and accessible where provided?		
Is the AED being inspected weekly/monthly, yearly?		
Is the inspection process documented?		
Are the expiration dates on the pads and batteries being		
tracked?		
Have staff been trained in CPR and AED use?		
Has the training been documented and is it in date?		
Are AED operators revalidated twice yearly?		
Post Cardiac Arrest audit		
Patient Condition upon your arrival: (circle)		
Conscious Breathing Pulse		
Unconscious Not Breathing No Pulse		
What action did you take?		
Was shock needed? Yes No Was shock delivered? Yes No		
Did pulse return? Yes No Did breathing return? Yes No		
Was CPR performed? Yes No By whom?		
Did patient become conscious? Yes No		
Condition on arrival of EMS?		
Outcome (if known)?		
Names of all AED Responders		
Audit conducted by:	Data	L

Audit conducted by: ______ Date: _____

References -Appendix XI1I

- ❖ American Heart Association Guidelines CPR ECC 2010: Highlights of the 2010 American Heart Association Guidelines for CPC and ECC
- ❖ American Heart Association 2011: Heartsaver CPR Student Workbook
- ❖ American Heart association 2011: BLS for Healthcare Providers, student manual.
- ❖ OPERATOR AND SERVICE MANUAL: Cardiac Science Powerheart AED G 3 serial number 9390E-1002
- ❖ Pre -Hospital Emergency Care Council ,Training Manual, Cardiac First Response 2011
- ❖ P.H.E.C.C. website for clinical record management guidelines for storage of printed documentation.(www.phecc.ie)