



Automated External Defibrillator Procedure



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Introduction

It is the procedure of Letterkenny Institute of Technology to provide Automatic External Defibrillators (AEDs) at various locations throughout its Letterkenny and Killybegs Campus. These AEDs will make early defibrillation available to students, staff, visitors and contractors who may experience sudden cardiac arrest. The AED are designed to be user friendly, however AEDs must only be used by appropriately trained staff. Please note this document should be read in conjunction with the First Aid procedure document.

Medical Direction of the Programme

The medical services provider and Institute Nurse will provide the following:

- Give input into AED procedure and procedures development
- Assist in post event feedback to responders
- Assist in managing any critical stress issues that may arise through participation in the LYIT AED programme.

Why is early Defibrillation Important?

Early call for Help => Early CPR => Early Defibrillation => Early Advanced Life Support



Figure 1. Chain of Survival

In Ireland each year sudden cardiac death claims the lives of between 5000 and 6000 people. Coronary artery disease which causes ventricular fibrillation is the main reason for these deaths. There is supportive evidence that indicates that the Chain of Survival concept; can prevent some of these deaths. The Chain of Survival forms the appropriate framework for the proper management of these emergency incidents. Defibrillation is without a doubt an important link in the Chain of Survival.



What is an AED?

An Automated External Defibrillator (AED) is used to treat victims who experience sudden cardiac arrest. The AED guides the trained user through the steps of defibrillation. The AED must only be used when a victim is unconscious, has no detectable pulse and is not breathing. It is designed to analyse a heart rhythm and then advise the trained personnel if a shockable rhythm is detected, the AED will charge to the appropriate energy level and advise the trained user to deliver a shock by pushing a button on the unit.

Location of AED's

In the Letterkenny Campus:

1. Defibtech DDU-100 AED located in Main building at the main reception desk in alarmed wall mounted case.
2. Defibtech DDU-100 AED located in Main building 3rd Floor nursing corridor number 3500 opposite the lift beside office 3401 in alarmed wall mounted case.
3. Defibtech DDU-100 AED located in Main building 3rd Floor connecting corridor between Science Labs and lecture theatres opposite the top of stairwell no. 2 in alarmed wall mounted case.
4. Defibtech DDU-100 AED located in An Dánlann at the main reception desk in alarmed wall mounted case.
5. Defibtech DDU-100 AED located in CoLab across from the main reception desk in alarmed wall mounted case.

In the Killybegs Campus:

1. Defibtech DDU-100 AED is located in Main Building in alarmed wall mounted case at the main reception.
2. Defibtech DDU-100 AED is located in Barry's Building in alarmed wall mounted case inside entrance to building.

Equipment

The AEDs are positioned in alarmed wall mounted cases that are not locked. When the door of the case is opened an alarm is activated in the wall mounted case and is turned off once the door is closed again.

Equipment List:

- Defibrillator (Defibtech)
- Defibrillator Pads x 2 sets
- Defibrillator Carrying Case
- Gloves
- Vent Aid Face mask
- Medical shears
- Towel
- Razor
- Survival Bags (MPC only)



Area of Cover

The AED Programme covers the entire Letterkenny Institute of Technology Campus and Killybegs Campus grounds.

Maintenance

The equipment and accessories to necessitate support of a medical emergency response shall at all times be maintained in a state of readiness. A weekly maintenance checklist is contained in Appendix 1. When a defibrillator checker becomes aware that equipment is not operating correctly, is approaching its use by date or where accessories need to be replaced then that person shall notify the Health & Safety Officer without delay. The Health & Safety Officer will then immediately organize for the repair/replacement of the defective items and the renewal of accessories.

Please note a set of pads in sealed package must be connected to the AED at all times. The pads can then be stored at the back (Defibtech model) of the AED in the area provided.

An AED Inspection Checklist is completed for each AED on a weekly basis by the Defibrillator Checkers. These Defibrillator checkers are qualified First aiders.

These Defibrillator Checkers or First aiders will check the AED on a weekly basis to ensure that it is operational; this weekly check will be a visual check to ensure that it is ready for use and complete the maintenance inspection checklist in appendix 1.

Active Status Indicator (ASI) for Defibtech DDU-100E

When the unit is switched off, this indicator (ASI) blinks green to indicate the unit is fully operational and blinks red to indicate the unit needs attention or servicing, it can also emit a beep to attract attention. It is located at the front top right hand corner of the unit see picture below. If the ASI is flashing red, turn the AED on. If the unit does not turn on or does not speak, the AED is not operational and requires servicing. If the unit does turn on, the voice prompts will indicate the nature of the problem. If the problem cannot be rectified contact the Health and Safety Officer immediately who will make contact with the suppliers' technical team. - See figure 2.



Active Status Indicator Light (Flashes Green)



Figure 2. Defibtech DDU E

*Please note for further detail on checking of Defibtech DDU see Defibtech Operators Manual.

Training & Authorized AED Users

Staff members who are authorized to use AED's are those staff members who have received CPR and Defibrillator training by a certified instructor. Staff members that are trained must hold a current certificate which is valid for a period of two years. After this period has elapsed they must be re-certified.

Initial CPR and AED training will be provided to anybody who volunteers to be a First Aider. The CPR training will have to be successfully completed prior to undertaking training on the AED.

Refresher training or AED skills check shall be provided to all First Aiders on a six monthly basis. Failure on a member's behalf to attend the refresher training will result in that person being removed from the list of authorized AED users. AED Training and refresher training shall be provided by a currently certified instructor.

The Health & Safety Officer shall maintain training records for the AED First Aiders.



Emergency Response

At LYIT Campus:

On discovering a person in need of first aid or cardiac emergency:

Call First aiders by dialling 6007 from an internal phone or 074 – 9186007 from a mobile, (This number is a dedicated line that takes precedence over all other calls in the institute and calls all First aiders simultaneously until the first person answers. This will get you in contact directly with a qualified First aider.)

Tell the responder where the victim is located; give the building, closest room number and floor you are on. The First aider will then proceed to the victims' location.

At Killybegs Campus:

On discovering a person in need of first aid or a cardiac emergency.

Call First aiders by dialling 6610 from an internal phone or 074 – 9186610 from a mobile, (This number is a dedicated line that takes precedence over all other calls in the institute and calls all First aiders simultaneously until the first person answers. This will get you in contact directly with a qualified First aider.)

Tell the responder where the victim is located; give the building, give closest room number and floor you are on. The First aider will then proceed to the victims' location.

First aider AED Procedure

Where a First Aider is called to the emergency by the person who found the victim the following procedure applies for a non witnessed collapse:

- Get the nearest AED or call main reception or nominate a person to retrieve it and bring it to the emergency location – inform a person at reception of the emergency location
- Go to the emergency location
- Assess scene for safety
- Ensure own safety and safety of casualty
- Determine unresponsiveness – if unresponsive
- Actuate the emergency services – call 112 or 999 for a Cardiac Ambulance
- Open airway – head tilt/chin lift – look inside mouth
- Check for signs of life – look, listen and feel for breathing (10 seconds)



- Commence CPR until AED is available
- Turn on AED
- Clear and prepare chest – shave chest hair if needed for good contact of electrodes. If the chest is dirty or wet wipe it dry.
- Apply electrodes to bare chest ensuring correct location. If you know the patient has an implanted pacemaker, do not place electrodes directly over an implanted device.
- Allow AED to analyse casualty
- Follow instructions given by AED

If shock is advised

- Clear area making sure **nobody** is touching the victim
- Call out in a clear voice “**Stand Clear**”
- Push shock button when prompted to do so
- Follow instruction given by AED

All members of the AED Response Team can be contacted by calling the LYIT campus emergency number 6007 from internal phone or 074 – 9186007 from mobile or by calling the Killybegs campus emergency number 6610 from internal phone or 074 – 9186610 from mobile.

Note: The Institute Nurse or doctor must be called to all incidents involving students.

Reception

Reception will ensure a member of Security or staff is notified to meet the Ambulance and bring them to the location of the incident.

If a person calls reception with an emergency then reception will call the emergency numbers above for LYIT Campus 6007 and for Killybegs Campus 6610.

Reception if required will call 9-999 or 9-112 immediately.

If asked by the First aider the receptionist will nominate a person to bring the AED to the location of the emergency.



Reporting Procedures

To ensure the effectiveness of Letterkenny Institute's Procedure on AED it is important that any member of the response team who uses the AED on a person makes out a report see appendix 2. The Casualty Report Form must be completed in all instances where the AED is used and completed form returned to the Health & Safety Officer.

Post Event Review

Following each use of the AED a review shall be conducted to learn from the experience. All participants in the event shall participate in the review. Included in the review shall be the identification of actions that went well and the collection of opportunities for improvement as well. The review will also allow those involved in the incident to speak of their experience and if there are matters that are of concern to them.

If required, counselling will be provided by Employee Advisory Resource Ireland (EAR Ireland) through the Employee Wellbeing Programme via the SAFER model

SAFER Model

S	=	Stabilisation
A	=	Acknowledgement of Crisis
F	=	Facilitation of Understanding
E	=	Encouragement of Adaptive Coping
R	=	Restoration of Independent Functioning

The Safety Committee shall receive a summary of the post event review. The Institute Nurse shall maintain a copy of the post event review summary.

Please note* for any AED device failure the Medical Devices Dept. of the Irish Medical Board must be contacted. When adverse incidents have occurred the manufacturer is required by law to carry out an investigation to determine why the event occurred and to identify in any way in which the device may have contributed.

Code of Conduct

Cardiac First aiders need to ensure that they are tactful, sympathetic, patient and respectful. A patients clothing must not be removed unnecessarily. The dignity of the person must be maintained at all times while dealing with a response.



APPENDIX 1

Maintenance Checklist Form

Location _____

Serial Number _____

Inspected By _____ Date _____ Time _____
 (Block capitals)

Inspection Checklist (please tick)

Active Status Indicator (ASI)	Yes	No
Green Light Flashing		

Exterior/Cables	Yes	No
Carry case intact and clean		
Exterior of AED is clean and undamaged		
Cables clean and undamaged		
Cable securely attached to unit		
MAIN pair electrodes present and attached to cables		
Pair of attached electrodes in date		
One set of SPARE electrodes (pads) present		
Electrodes in sealed packages and in date		

Battery	Yes	No
Attached to unit		
In date		
Charged for use		

Defibrillator Carry Case Content	Yes	No
Razor		
Towel		
Vent Aid – (Face Mask)		
Shears		
Gloves (One Pair)		

Operation	Yes	No
Unit self test as per instructions (Annual)		
Verbal Prompts (Annual)		
Visual Indicators		

Signature _____



APPENDIX 2 - CASUALTY REPORT FORM



Cardiac First Response Report (CFRR)

SURNAME		S U R N A M E													
FIRST NAME		F I R S T N A M E													
AGE		YRS		ESTIMATE		Y		N		UNKNOWN		NAME		UNKNOWN	
GENDER:		MALE		FEMALE											
DATE OF INCIDENT/RENT		DD		MM		YYYY									
INCIDENT ADDRESS															

INCIDENT/RENT LOCATION															
HOME		WORKPLACE		PUBLIC BUILDING		RESIDENTIAL		INSTITUTION		FARM		RECR OR SPORT PLACE			

History of Coronary Disease		YES		NO		UNKNOWN	
COLLAPSE WITNESSED BY:		BYSTANDER		COLLAPSE NOT SEEN OR HEARD		UNKNOWN	
CARDIAC FIRST RESPONDER		ESTIMATED		Y		N	
TIME OF COLLAPSE		HH		MM		UNKNOWN	

Edi Box 1 is for cardiac emergency use only use

ESTIMATED		Y		N		MEASURED		HH		MM		UNKNOWN	
ASPRIN GIVEN		YES		DOSE		NO		UNKNOWN					
Time CPR Commences		ESTIMATED		Y		N		MEASURED		HH		MM	
Duration of CPR		ESTIMATED		Y		N		MEASURED		HH		MM	
ESTIMATED		Y		N		MEASURED		UNKNOWN					

Outcome of Bystander AED use:		WAS A SHOCK GIVEN		YES		NO		UNKNOWN					
TOTAL NUMBER OF SHOCKS GIVEN		ESTIMATED		Y		N		UNKNOWN					
Time First Shock delivered		HH		MM									
SPONTANEOUS PULSE RETURNED		YES		NO		IF YES ENTER TIME		HH		MM			
DID THE PATIENT START BREATHING OR RECOVER CONSCIOUSNESS		YES		NO		UNKNOWN		IF YES ENTER TIME		HH		MM	

Outcome At Scene:		SPONTANEOUS CIRCULATION ON ARRIVAL IN ED		RECOGNISED DEAD AT SCENE		TIME		HH		MM	
TRANSFERRED TO HOSPITAL - NO CIRCULATION		TRANSFERRED TO HOSPITAL - CPR IN PROGRESS		HOSPITAL NAME		TIME DEPARTED SCENE		HH		MM	
GP IN ATTENDANCE		YES		NO							
TIME RECEIVED CALL		HH		MM		TIME AT PATIENT		HH		MM	

ADDITIONAL INFORMATION													
SIGNATURE/PRINT:													
DISTRICT:													

REFERENCE: USTSTEIN 2004, PHECC PATIENT CARE REPORT, EDITION 2



APPENDIX 3 - Reference Documents

- **Reducing the Risk: A Strategic Approach – The Report of the Task Force on Sudden Cardiac Death** – Department of Health & Children – **March 2006.**
- **Cardiac First aider Guide - A guide to the development of Community First Response Programmes** – Health Service Executive – **March 2008.**
- **Advisory External Defibrillator National Pre-Hospital Standards 2008** – Centre for Immediate Care Services UCD School of Medicine & Medical Sciences and Pre-Hospital Emergency Care Council – **February 2008.**
- **Defibtech DDU-100 Semi-Automatic External Defibrillator - Users Manual.**

