

## Defibrillation

### Guidelines for Healthcare Professionals

Policy

NO

Procedure

NO

Protocol

NO

Guideline

YES

Classification of Document:

Area for Circulation:

Reference Number:

Version Number:

Original Reference Number:

Guideline

UHB Wide

2

Author Name and Job Title:

Angela Jones,  
Senior Nurse

Responsible Officer:

Name and Job Title:

Dr Aled Roberts

Consultant Physician, Chair of  
Resuscitation Committee

Details of lead/responsible:

Dr Aled Roberts/ Senior Nurse Angela  
Jones

Group/Committee:

Consulted Via:

Resuscitation Committee

Resuscitation Committee

Ratified by:

Chairman of Validating Body:

Date Issued: 21<sup>st</sup> July 2017

Review Details: 7<sup>th</sup> June 2020

Version Number	Date of Review	Reviewer Name	Completed Action	Approved By	Date Approved	New Review Date
2	7 <sup>th</sup> Jun 2017	A Roberts	7 <sup>th</sup> Jun 2017	Resuscitation Committee	7 <sup>th</sup> Jun 2017	7 <sup>th</sup> June 2020

### Disclaimer

When using this document please ensure that the version you are using is the most up to date either by checking on the UHB database for any new versions or if the review date has passed please contact the author

Document Title: Defibrillation-Guidelines for Healthcare Professionals	2 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

<b>1</b>	<b>Introduction</b>	
<b>2</b>	<b>Guidelines Statement</b>	<b>3</b>
<b>3</b>	<b>Aims of the Defibrillation Guidelines</b>	<b>3</b>
<b>4</b>	<b>Implementation</b>	<b>3</b>
<b>5</b>	<b>Resources</b>	<b>4</b>
<b>6</b>	<b>Audit</b>	<b>4</b>
<b>7</b>	<b>Responsibilities</b>	<b>4</b>
<b>7.1</b>	<b>The University Health Board</b>	<b>4</b>
<b>7.2</b>	<b>Resuscitation Committee</b>	<b>4</b>
<b>7.3</b>	<b>Resuscitation Service</b>	<b>4</b>
<b>7.4</b>	<b>Directorate and Line Managers</b>	<b>4</b>
<b>7.5</b>	<b>Individual Staff Members</b>	<b>5</b>
<b>8</b>	<b>Training</b>	<b>5</b>
<b>9</b>	<b>Defibrillation maintenance and operational checks (testing)</b>	<b>6</b>
<b>10</b>	<b>Documentation and Audit</b>	<b>7</b>
<b>11</b>	<b>Further Information</b>	<b>6</b>
<b>12</b>	<b>Clinical Policies and References</b>	<b>6</b>
<b>13</b>	<b>Distribution</b>	<b>6</b>
<b>14</b>	<b>Equality Impact Assessment</b>	<b>7</b>
<b>1 5</b>	<b>Contributors</b>	<b>7</b>
	<b>Appendix 1: Annual Training Schedule</b>	<b>8</b>
	<b>Appendix 2: Safe and effective manual defibrillation</b>	<b>9</b>
	<b>Appendix 2: Safe and effective manual defibrillation</b>	<b>10</b>

Document Title: Defibrillation-Guidelines for Healthcare Professionals	3 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

## **Defibrillation Guidelines**

### **1. INTRODUCTION**

Health care institutions have an obligation to provide an effective Resuscitation Service to ensure that their staff receive training and regular updates for maintaining a level of competence appropriate to each individual's employed role. These Defibrillation guidelines supports the recommendations published – Quality Standards for Cardiopulmonary Resuscitation Practice and Training, 2016.

### **2 GUIDELINE STATEMENT**

Cardiff and Vale UHB is committed to implementing resuscitation training standards and recommendations made by the Resuscitation Council (RC) UK, whose aim is to improve patients' outcome after cardiac arrest both in and out of hospital. To achieve this, the RC (UK) has set standards for resuscitation training in both basic and advanced life support. The content of these guidelines will reflect that guidance.

### **3 AIMS OF THE DEFIBRILLATION GUIDELINES**

The aims of these guidelines are as follows: -

- To ensure patients receive safe, evidence based, effective defibrillation when appropriate.
- To provide staff with guidance on the resuscitation courses most appropriate to them depending on their clinical role/department, in order to achieve competence in performing defibrillation.
- To ensure relevant staff are updated and adequately supported to deal with resuscitation situations that require defibrillation.
- To promote practice based on RC (UK) guidelines.
- Ensure staff and patient safety during defibrillation.
- To satisfy legal and professional requirements.
- To minimise clinical risk and litigation.
- To comply with UHB requirements for standardisation of guidelines.
- To maximise access to and uptake of training.

Document Title: Defibrillation-Guidelines for Healthcare Professionals	4 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

## **4 IMPLEMENTATION**

All newly employed health-care professionals will be made aware during induction of the UHBs Defibrillation Guidelines and their responsibilities under it.

Existing staff will be made aware of these guidelines through training and dissemination of this information to all appropriate Directorates and Managers in accordance with the management of policies and procedures for Cardiff and Vale UHB.

## **5 RESOURCES**

There are no costs in disseminating this information. The guidelines will be distributed electronically and as part of the in-house training programme and on Doctor's induction days. Courses are also advertised on the Resuscitation Service intranet page.

## **6 AUDIT**

The compliance of these guidelines will be audited using databases currently held within the Resuscitation Service and attendance sheets (this cannot be attached with the document as it is an existing operational database).

## **7 RESPONSIBILITIES**

### **7.1 Cardiff and Vale University Health Board**

The Board carries overall responsibility for the UHB. It has delegated powers from the Welsh Government in respect of ownership and management of hospitals and other health facilities. The Board is responsible for the performance of the UHB.

### **7.2 Resuscitation Committee**

The UHB's Resuscitation Committee, led by its Chairperson, meets on a quarterly basis. Group members should be conversant with current issues in relation to resuscitation practice. The Resuscitation Committee will be responsible for implementing operational policies and guidelines governing cardiopulmonary resuscitation, practice and training. It will determine the level of resuscitation training required by individual staff members (see the Resuscitation Service's Resuscitation Training Guidelines).

### **7.3 Resuscitation Service**

Cardiff and Vale UHB has an established Resuscitation Service that is supported by the Resuscitation Committee in terms of its Clinical Lead. It is responsible for implementing decisions made by the Resuscitation Committee, thereby promoting good practice through training and audit.

Document Title: Defibrillation-Guidelines for Healthcare Professionals	5 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

The Resuscitation Service is responsible for the assessment of those it teaches, ensuring they meet the standards required by the RC (UK) at the time of their training. The Senior Nurse for the Resuscitation Service is responsible for managing, maintaining and strategically developing the service, within available resources, to meet the needs of the UHB.

The Resuscitation Service will provide advice to the UHB on all aspects of cardiopulmonary resuscitation, including the appropriateness of training programmes for UHB staff based upon risk analysis.

#### **7.4 Directorate and Line Managers**

While the UHB has a responsibility for the provision of training through its Resuscitation Service, those who manage staff, particularly clinical staff, have a responsibility to monitor uptake and to ensure staff receive adequate time to deliver and attend training.

#### **7.5 Individual Staff Members**

Each individual has a responsibility to attend allocated training sessions, as well as for their own actions in respect of their limitations and scope of professional practice. Individual staff members who have a professional and contractual requirement to teach their colleagues must agree to do so according to the guidance provided by the Resuscitation Service, and attend regular updates as required.

### **8. Training**

The Resuscitation Service adheres to an Annual Training Schedule (Appendix 1) which illustrates a cyclic model for the delivery of training on an annual and systematic basis. Depending on circumstances, the time-scales and workload may be altered according to service needs or resource provision. However, no substantive changes will occur without prior consultation with the UHBs Resuscitation Committee. Further information regarding resuscitation training and candidate suitability is available in the UHBs *Guideline for Resuscitation Training for Healthcare Professionals*.

Once training in the use of the defibrillator has been received (AED or Manual), individuals are reminded that it is their responsibility to act within the current resuscitation guidelines, as well as within their scope of professional practice.

The Resuscitation Service will give fair and equal access to training to all members of the UHB. Staff requesting training will be assessed on an individual basis according to their clinical area. (Please refer to the UHBs Resuscitation Training Guidelines).

Courses that involve defibrillation offered by Cardiff and Vale Resuscitation Service include:

- Automated External Defibrillator (AED) Training
- AED Cascade Training
- Immediate Life Support (ILS)
- Advanced Life Support (ALS)

Document Title: Defibrillation-Guidelines for Healthcare Professionals	6 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

- Advanced Paediatric Life Support (APLS)
- Ward-based mock arrest scenarios

The Resuscitation Service for Cardiff & Vale UHB advocates that defibrillators must only be operated by persons specifically trained in their use and has an in-date certificate.

Familiarisation training for staff provided by the Resuscitation Practitioners on the implementation of a new defibrillator into an area **does not** authorise an individual to defibrillate.

Within Cardiff and Vale UHB the following defibrillators are in use:-

Philips MRX Defibrillator  
Philips XL Defibrillator  
Philips XL+ Defibrillator  
Heartstart FR2 Defibrillator

Phillips HS1/FRX  
FR3

#### Manual

Only Healthcare Professionals who have a valid UK Resuscitation Council Advanced Life Support (ALS) course, Immediate Life Support (ILS) course which has included Manual Defibrillation or Advanced Life Support Group (ALSG) Advanced Paediatric Life Support (APLS) course are permitted to manually defibrillate. The procedure for manual defibrillation can be found in Appendix 2.

#### AED

All of the defibrillators in the UHB have the capability of being used in an AED mode. Staff attending defibrillator familiarisation will be shown the functions and operations of the specific defibrillator within their clinical environment.

If staff wish to use an Automated External Defibrillator they must have attended the ILS course or AED training sessions provided by the Resuscitation Service and have an in-date certificate signed by a Resuscitation Practitioner or a Resuscitation Service certified AED cascade trainer.

## **9. DEFIBRILLATOR MAINTENANCE AND OPERATIONAL CHECKS (TESTING)**

It is the responsibility of each individual ward/department to ensure that their defibrillator is in working order. This includes ensuring that the defibrillator is clean, has two sets of sealed, in date defibrillator pads and ECG paper. All defibrillators are to be checked in accordance with the manufacturers instructions.

Managers within each department will ensure that procedures are in place to ensure the testing and checking of their defibrillator. (Note – that the FR2 Defibrillator does an automatic self check. Staff should ensure that a daily check of the battery state is made and the ‘flashing egg-timer’ is in the indicator box). The operational checks will include ancillary equipment such as monitoring leads. It is advisable that the ECG printout for each daily test is left attached to the defibrillator, once the next check is

Document Title: Defibrillation-Guidelines for Healthcare Professionals	7 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

made, the previous print out can be disposed of. Daily checks should be clearly documented and signed.

In the event of any equipment failure or defibrillator malfunction, either during the testing procedure or use of the defibrillator on a patient, report the fault immediately to the clinical engineering department and a clinical incident form should be completed. An incident form should also be completed should a defibrillator test fail.

In the case of full datacards, the Resuscitation Service needs to be contacted in order for the data to be downloaded.

## 10. DOCUMENTATION AND AUDIT

The UHB will comply with the recommendations of the Resuscitation Council (UK) and audit the use of the defibrillator to ascertain that the target time of collapse to shock is being achieved. This information will be extracted from the resuscitation audit form which is completed following all 2222 calls.

## 11 FURTHER INFORMATION

These Guidelines are in response to the Standards for Clinical Practice and Training. A Joint Statement from the Royal College of Anaesthetists, The Royal College of Physicians of London, the Intensive Care Society and the Resuscitation Council (UK), (June 2008)

This Guideline should be read in conjunction with the following UHB policies:

- ✓ Cardiac Arrest Procedure
- ✓ Resuscitation Training; Guidelines for Healthcare Professionals

## 12 CLINICAL POLICIES AND REFERENCES

*Quality Standards for cardiopulmonary resuscitation practice and training. A Joint Statement from the Royal College of Anaesthetists, The Royal College of Physicians of London, Intensive Care Society and Resuscitation Council (UK) 2016.*

Safe and effective manual defibrillation. *Resuscitation Council (UK) 2009.*

## 13 DISTRIBUTION

As well as being available for general access via the Intranet, these Guidelines will also be made available to:

- UHB Resuscitation Committee
- Medical Director
- Director of Nursing
- Directorate Managers
- All Senior Nurses
- All Ward Managers
- Learning and Education Department
- Post-graduate organisers





Document Title: Defibrillation-Guidelines for Healthcare Professionals	9 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

APLS												
IMPACT												
ATLS												
PLS												
ILS x 4 month												
ALERT Monthly												
ALERT Pre-Reg Nurses												
ALERT pre-reg Midwives												
Midwifery ALERT												
Dr's induction												
Audit												

## **Appendix 2: Safe and effective manual defibrillation**

The length of the pre-shock pause, the interval between stopping chest compressions and delivering a shock, is inversely proportional to the chance of successful defibrillation. Every 5 second increase in the duration of the pre-shock pause almost halves the chance of successful defibrillation, therefore it is critical to minimise the pause. The lengthy ‘top-to-toe’ safety check (e.g., “top, middle, bottom, self, oxygen away”) performed after the defibrillator has charged and before shock delivery, commonly taught and used in clinical practice, will therefore significantly diminish the chances of successful defibrillation (Resuscitation Council). This statement concerning defibrillation technique provides guidance that should decrease the duration of the pre-shock pause without increasing the risk to rescuers.

Current Resuscitation Council (UK) guidance and teaching materials state that the pre-shock pause should be less than 10 seconds; we believe that it is possible to reduce this further still without endangering team members. To help achieve this and further minimise the pre-shock pause:

1. All rescuers should wear gloves during every resuscitation attempt.
2. Use self-adhesive defibrillation electrodes to deliver the shock. These should be applied whilst chest compressions are ongoing.

Document Title: Defibrillation-Guidelines for Healthcare Professionals	10 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

3. Safety issues should be addressed and planned for during chest compressions.
4. Before stopping chest compressions the team should plan what to do if the rhythm is shockable:
  - a. on stopping chest compressions, if the rhythm is shockable, everyone should “stand clear” and remove the oxygen if appropriate in AED mode. In manual mode, chest compressions should resume whilst the defibrillator is charging. Once charged, the person using the defibrillator will ask for compressions to be stopped for the shock to be delivered.
  - b. identify who will charge the defibrillator and deliver a safe shock if the rhythm is shockable,
  - c. identify who will immediately resume chest compressions after the shock is delivered.
5. When the team leader asks for compressions to stop:
  - a. the cardiac arrest rhythm should be confirmed as shockable and everyone should stand clear of the patient,
  - b. if the rhythm is shockable, the defibrillator is immediately charged whilst individuals are standing clear. If in manual mode, the defibrillator is charged whilst compressions are ongoing.
  - c. during the charging process there should be a clear instruction to “stand clear” with a rapid visual safety check,
  - d. the shock is delivered with minimal delay,
  - e. chest compressions should restart immediately after the shock unless the patient shows signs of life.
6. If there are delays caused by difficulties in rhythm analysis or if individuals are still in contact with the patient, chest compressions should be restarted whilst plans are made to decide what to do when compressions are next stopped.
7. A prolonged safety check during charging and before shock delivery is not necessary and is no longer recommended.

Document Title: Defibrillation-Guidelines for Healthcare Professionals	11 of 11	Approval Date: 07 Jun 2017
Reference Number: UHB 231		Next Review Date: 07 Jun 2020
Version Number: 2		Date of Publication: 21 Jul 2017
Approved By: Resuscitation Committee		

8. On the shockable side of the algorithm, cardiac arrest drugs are administered as per current guidelines.
  
9. Rescuers must not compromise their safety.