The Newcastle upon Tyne Hospitals NHS Foundation Trust

Cardiopulmonary Resuscitation (CPR) and Training Policy

<table>
<thead>
<tr>
<th>Version No.</th>
<th>7.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective From</td>
<td>09 May 2019</td>
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<td>04 July 2021</td>
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<td>Date Ratified</td>
<td>08 May 2019</td>
</tr>
<tr>
<td>Ratified By</td>
<td>Resuscitation Committee</td>
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1 Introduction

The Newcastle upon Tyne Hospitals NHS Foundation Trust (the Trust) recognises the need for, and is committed to, providing a high standard of Cardiopulmonary Resuscitation. It is Trust policy to provide immediate and effective Cardiopulmonary Resuscitation (CPR) at the site of a cardio-respiratory arrest, when indicated. In order to achieve this aim, the Trust recognises the requirement to provide a high standard of CPR training appropriate to the needs of different staff groups.

2 Scope

The policy applies to all NUTH staff, clinical and non-clinical, including those not directly employed by the Trust such as voluntary workers, students, locums and agency workers. The policy applies to all NUTH sites including the Royal Victoria Infirmary, Freeman Road Hospital, Campus for Ageing and Vitality, Great North Children’s Hospital, Newcastle Fertility centre and Northern Genetics Service and all NUTH community locations.

3 Purpose

3.1 The roles and responsibilities of the Trust, the resuscitation committee, cascade trainers, the cardiac arrest team and adult and paediatric clinical staff for ensuring the cardio-pulmonary resuscitation of seriously ill patients

3.2 The arrest procedure for all age groups who may require resuscitation

3.3 The mechanisms for identifying patients at risk of deterioration and the procedures that should be followed

3.4 Do not attempt cardiopulmonary resuscitation policy and procedures

3.5 The standards for resuscitation equipment provision and checking procedures

3.6 Post resuscitation care and safe transfer procedures

3.7 Activation and membership of cardiac arrest teams

3.8 Contents of cardiac arrest trolley and drugs

3.9 The process for monitoring compliance with the above
### 4 Definitions

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AED</td>
<td>Automated external defibrillator</td>
</tr>
<tr>
<td>ALS</td>
<td>Advanced life support</td>
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<tr>
<td>APLS</td>
<td>Advanced paediatric life support</td>
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<tr>
<td>BLS</td>
<td>Basic life support</td>
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<tr>
<td>Capnography</td>
<td>End tidal carbon dioxide monitoring</td>
</tr>
<tr>
<td>Cascade trainer</td>
<td>Specialist health professional with additional skills and responsibilities to deliver BLS training</td>
</tr>
<tr>
<td>CAV</td>
<td>Campus for Ageing and Vitality</td>
</tr>
<tr>
<td>CCU</td>
<td>Coronary care unit</td>
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<tr>
<td>CPR</td>
<td>Cardiopulmonary resuscitation</td>
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<tr>
<td>DATIX</td>
<td>Adverse event reporting system</td>
</tr>
<tr>
<td>Deciding Right</td>
<td>North East regional document covering end of life decisions and including DNACPR policy for the region</td>
</tr>
<tr>
<td>DECT phone</td>
<td>Hand held mobile phone for use within the hospital</td>
</tr>
<tr>
<td>DNACPR</td>
<td>Do not attempt cardiopulmonary resuscitation</td>
</tr>
<tr>
<td>ESR system</td>
<td>On line record of NUTH staff mandatory training</td>
</tr>
<tr>
<td>EZ-IO</td>
<td>Mechanised system for insertion of an intraosseous needle</td>
</tr>
<tr>
<td>FRH</td>
<td>Freeman road Hospital</td>
</tr>
<tr>
<td>Grab bag</td>
<td>Rucksack stored in Leazes and NVW recovery (RVI) and ICU (FRH). Containing advanced airway equipment, capnography and anaesthetic drugs. Taken to cardiac arrest.</td>
</tr>
<tr>
<td>ICM</td>
<td>Intensive care medicine</td>
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<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>ILS</td>
<td>Intermediate life support</td>
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<tr>
<td>ILCOR</td>
<td>International liaison committee on resuscitation</td>
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<tr>
<td>IMCA</td>
<td>Independent mental capacity advocate</td>
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<tr>
<td>NCAAA</td>
<td>National cardiac arrest audit</td>
</tr>
<tr>
<td>NEWS</td>
<td>National early warning score</td>
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<tr>
<td>NUTH</td>
<td>Newcastle upon Tyne Hospitals NHS Trust</td>
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<tr>
<td>Pocket mask</td>
<td>A mask for delivery of resuscitation breaths that is contained in a pocket sized box.</td>
</tr>
<tr>
<td>Red resuscitation trolley</td>
<td>Red trolleys on which emergency resuscitation equipment, drugs and defibrillators are stored</td>
</tr>
<tr>
<td>Resuscitation council UK</td>
<td>UK professional governing body for resuscitation.</td>
</tr>
</tbody>
</table>
RO | Senior Workforce Development Officer (Resuscitation officer)
ROSC | Return of spontaneous circulation
RVI | Royal Victoria Infirmary
SGA | Supraglottic airway device
The Trust | Newcastle upon Tyne Hospital NHS Trust

5 Roles and responsibilities

5.1 Chief executive
The Chief Executive has ultimate accountability for ensuring robust systems are in place to support effective CPR management across the organisation but delegates this responsibility to the Medical Director.

5.2 Medical director
The Medical Director is the Executive with responsibility for ensuring robust systems are in place to support effective CPR management across the organisation.

5.3 Clinical Governance and Quality Committee and the Clinical Risk Group
The Clinical Governance and Risk Department and the Clinical Risk Group are responsible through the receipt of regular audit and annual reports from the Resuscitation Committee for monitoring continuous and measurable improvement in the quality of resuscitation services provided.

5.4 Training and Education Group
The Training and Education Group is responsible for
- approving resuscitation training strategy and overseeing its implementation and evaluation
- the receipt of regular audit and annual reports from the Resuscitation Committee to monitor continuous and measurable improvement in the content, level and quality of training provided
- ensuring compliance with mandatory training in adult and paediatric BLS
- The provision of educational facilities and up-to-date resuscitation educational equipment to support the training of staff through the Resuscitation service team.

5.5 Resuscitation Committee
The Resuscitation Committee is responsible for
- Development, implementation and evaluation of training strategy
- Ensuring implementation and adherence to national resuscitation guidelines and standards;
- Defining the role and composition of the resuscitation team;
  Recommendations across all Trust sites for the geographical location and provision of equipment for resuscitation
- Consulting with stakeholders on the provision of resuscitation services during the development of new facilities
• Standards for resuscitation equipment for clinical use and checking procedures;
• Standards for appropriate resuscitation drugs (including those for peri-arrest situations);
• Planning adequate provision of training in resuscitation;
• Determining requirements for and choice of resuscitation training equipment;
• Preparing and implementing policies relating to resuscitation and treatment of anaphylaxis;
• In conjunction with NEWS policy group, preparing and implementing policies relating to prevention of cardiac arrest;
• In conjunction with the Deciding Right committee, preparing and implementing a policy on resuscitation decisions, (e.g. DNACPR decisions), and advanced care planning (in collaboration with end-of-life care teams);
• Quality improvement - action plans based on audits, e.g. review of audit data using National Cardiac Arrest Audit data for benchmarking;
• Recording, reporting and investigation of patient safety incidents in relation to resuscitation.
• Meeting formally on a quarterly basis to review Resuscitation issues throughout the Trust.
• Keeping the Trust board informed via the Clinical Governance and Risk Department and Training and Education Group of the necessary requirements to maintain a high standard of CPR training and facilities necessary to provide effective basic and advanced life support.
• Critical incident review, identifying risks and reporting to Clinical Risk Group for entry onto the risk register

5.6 Clinical Directorates
Line Managers are responsible for
• Ensuring supply and development of sufficient Cascade Trainers within their directorate in order to provide practical training to the clinical staff within their directorate
• Releasing their cascade trainers from regular duties in order to provide practical training to the clinical staff within their directorate
• Releasing their staff from regular duties to attend Resuscitation Training, in accordance with the requirements identified in the annual Training Needs Analysis, monitoring their attendance and ensuring compliance
• Ensuring appropriate checks of availability of cardiac arrest equipment and securing trolleys
• Informing the resuscitation department of their ward / department resuscitation trolley checking performance

5.7 Senior Workforce Development Officers (Resuscitation Officers)
The Resuscitation Officers are responsible for ensuring:
• Resuscitation training delivered to NUTH clinical staff adheres to the current Resuscitation Council (UK) guidelines and incorporates training on the current early warning system used by the Trust for the identification of patients at risk, including the systems for summoning assistance, and incorporates DNACPR decision making
• The delivery of annual resuscitation training to the appropriate staff identified by the annual Training Needs Analysis Working with directorates to ensure they reach agreed annual compliance targets
• Regular communication and engagement with stakeholders and L&D to ensure courses run at 100% occupancy
• Implementing and delivering bespoke and interventional actions to address shortfalls in compliance in order to achieve 95% by year end
• Informing staff on induction of the need to read and implement the resuscitation policy
• Delivery of ILS training to staff identified by annual training needs analysis
• Delivery of ALS training to staff identified by annual training needs analysis
• All data collected from the National Cardiac Arrest Audit is entered onto the database to support the audit of compliance
• A yearly audit of resuscitation equipment is undertaken, the results are disseminated to the relevant areas and recommendations are implemented to improve the service
• A yearly audit of DNACPR documentation is undertaken, the results are disseminated to the relevant areas and recommendations are implemented to improve the service
• Recording, investigation and reporting of patient safety incidents in relation to resuscitation.
• Training, support and assessment of competence of cascade trainers
• Consulting with stakeholders on the provision of resuscitation services during the development of new facilities
• Consulting with pharmacy on emergency drug supply issues and adherence to pharmacy policy
• Attendance at cardiac arrests, when able, to monitor the adherence to local resuscitation guidelines and equipment availability

5.8 Education and Workforce Development
Education and Workforce Development are responsible for
• Furnishing TEG, the Resuscitation Committee and the Clinical Directorates with accurate data on staff training
• Working with the Resuscitation Officers to ensure the Training Needs Analysis is appropriate for all members of staff
• Regular communication with TEG, the Resuscitation Committee, the Clinical Directorates and the Resuscitation Officers to ensure compliance with mandatory training
• Working with the Resuscitation Officers to ensure maximum occupancy of all courses

5.9 Cascade Trainers
Cascade trainers are responsible for
• Ensuring resuscitation training delivered to NUTH clinical staff adheres to the current Resuscitation Council (UK) guidelines and incorporates training on the current early warning system used by the Trust for the identification of patients at risk, including the systems for summoning assistance, and incorporates DNACPR decision making;
• The delivery of resuscitation training updates to staff within their directorate
• Deliver training once they have been approved by the resuscitation department to do so
• Keep up to date with mandatory training requirements
• Undertake a minimum of 4-6 sessions of training per year in their ward/department
• Ensuring they should be released from regular duties by their directorate manager in order to provide practical training to the clinical staff within their directorate
• Recording any training undertaken including feedback on their sessions and forward the information to the Learning and Workforce Development team
• Attend a minimum of two resuscitation link meetings per year and attend other relevant CPD sessions to update and assess their skills

5.10 Clinical staff
All staff are responsible for ensuring that they:
• Cooperate and comply with the implementation of this policy
• Practice within the current Resuscitation Council (UK) Guidelines and their own Codes of Professional Conduct
• Attend the appropriate resuscitation training as per Training Needs Analysis (Refer to Trust Related Policies – Statutory and Mandatory Training Needs Analysis). This will be monitored by the Line Managers and the Educational Training teams for the care group/Division (Appendix 6)
• Raise any queries about implementation of this policy with their line manager
• Immediately alert the appropriate response team in the event of an obstetric, paediatric, neonatal or adult emergency
• Are familiar with the processes to follow if any cardiac arrest equipment fails or is found to be faulty during the daily operational checks or when being used.
• Are familiar with the location of the nearest and next nearest automated external defibrillator (if applicable) and resuscitation equipment as available.

5.11 Non-clinical staff
All staff are responsible for ensuring that they:
• Cooperate and comply with the implementation of this policy
• Attend the appropriate resuscitation training on induction. This will be monitored by Line Managers for the care group/Division.

5.12 Cardiac Arrest Team
• CARDIAC ARREST DECT HOLDERS MUST RESPOND TO THE TEST CALLS.
Cardiac arrest dect holders- (mandatory responders) will:
  ▪ Ensure that their dect phone contains a live battery and is in full working order at all times. Any faults with dect phones are promptly reported to switchboard
  ▪ Ensure that the dect phone is never left unattended and is transferred from one suitably trained member of staff to another
- Respond immediately to a 2222 cardiac arrest message. This message will advise of location.
- If unable to leave a patient, immediately delegate the responsibility to a suitably qualified member of staff who will respond on their behalf.
- Dect phone holders who receive an inaudible, unclear or confusing message should call 2222 and request the information to be repeated over the phone line by a member of the switchboard team.

5.13 **Switchboard**

It is the responsibility of the switchboard managers to:

- Monitor that test calls are responded to appropriately
- Ensure that, in the event of system failure, the duplicate backup system is available for use and has been maintained and tested daily
- Ensure that radio pagers and emergency telephone procedures exist in the eventuality of a system failure

5.14 **Medical electronics**

Medical electronics are responsible for:

- Disseminating alerts of resuscitation equipment to relevant staff
- Responding to alerts and reports of any faults with emergency equipment and for making arrangements for repair or replacement of the equipment

5.15 **Pharmacy**

- Ensure an adequate supply of red, blue and green drug boxes which are in date and adequately stocked
- Monitoring national supply of emergency drugs and providing alternatives if there are supply problems
- Ensuring an adequate supply of anaphylaxis boxes which are in date and adequately stocked

6 **Resuscitation training**

6.1 **Clinical staff**

- ‘Clinical staff’ are taken to mean Doctors; Nurses; Healthcare Assistants; Professions allied to medicine; helpers and assistants to the afore mentioned; Pharmacists; Physicists and other persons who have some direct clinical contact with patients.
- Yearly adult Basic Life Support (BLS) training is mandatory for clinical staff caring for any age group of patient.
- Yearly Paediatric Basic Life Support (PBLs) training is mandatory for clinical staff regularly caring for paediatric patients.
- Yearly neonatal life support training is mandatory for all clinical staff who attend women in childbirth and/ or the immediate postnatal period. “Clinical staff” are taken to mean midwives, doctors and neonatal nurses.
- Cardiopulmonary Resuscitation training for medical students and foundation doctors will be incorporated into a training programme, which satisfies the requirements of the Postgraduate Institute for Medicine and Dentistry and the Colleges of various specialities.
• ILS training for all medical students
• ALS training for all Foundation doctors
• AED training will be provided by RO’s, cascade trainers and appropriate ALS instructors to advanced practitioners who work in areas with AED’s that are difficult for the cardiac arrest team to access
• All new staff are offered induction places by the training department, which includes an introduction to arrest procedures within the Trust
• Staff who have a disability, health condition or other issues that impinge on their ability to discharge their role should discuss the implications with their line manager. The resuscitation officers or line manager (most appropriate) will be informed of any member of staff who are unable to start or complete the training in relation to these issues, to ensure a risk assessment is carried out if appropriate and any necessary action plan formulated.

6.2 Non-clinical staff
• “Non-clinical staff” are taken to mean ward clerks, secretaries, receptionists and other members of staff who have no clinical patient contact
• Induction training is mandatory for staff to be able to raise the alarm by calling 2222 for a collapsed individual

6.3 Delivery of training
• Basic Life Support training will be provided by:
  • The Resuscitation Officers
  • BLS (Adult & Paediatric) cascade trainers.
  • Specified, named Medical / Dental staff who are ALS instructors.
  • Neonatal BLS trainers
• BLS training delivered to NUTH clinical staff adheres to the current Resuscitation Council (UK) guidelines and incorporates training on the current early warning system used by the Trust for the identification of patients at risk, including the systems for summoning assistance, and DNACPR decision making
• BLS training will be delivered via blended learning.
• An on-line learning package should be completed every year using ESR.
• Yearly practical training may be delivered using the automated QCPR system or in traditional RO or cascade trainer led sessions
• Practical training may be delivered using the automated QCPR system or in traditional RO or cascade trainer led sessions
• There should be a maximum ratio of one trainer to six trainees at each RO led practical life support session, to provide adequate opportunity to demonstrate and practice resuscitation skills
• Cardiopulmonary resuscitation training will be carried out throughout the Trust in suitable venues, which allow space for the allocated number of students, trainers and equipment.
• A sufficient number of sessions will be provided by the RO’s and cascade trainers to meet the training needs of the NUTH workforce
6.4 Monitoring
- Completion of mandatory BLS training will be documented in line with the Trust policy by cascade trainers and RO’s, passed on to the Learning and Workforce Development department.
- Monitoring of mandatory BLS training will be conducted by directorate managers / line managers, the Training and Education Group and Learning and Workforce Development.
- The target is 95% compliance of identified clinical staff for mandatory BLS training.
- Staff who have not completed their yearly mandatory BLS training will be reminded of this by their directorate manager / line manager.

7 Resuscitation

7.1 Identification of patients at risk
- Early detection of physiological deterioration offers the best opportunity to intervene and prevent deterioration and cardiac arrest.
- All adult and paediatric patients should have their observations monitored, a NEWS/PEWS score calculated and if necessary the appropriate help summoned according to the trust NEWS/PEWS policy.

7.2 Raising the alarm
- The individual finding a collapsed person should initially call for help, assess the patient and raise the alarm according to national BLS guidelines.
- A member of staff should be assigned to call the emergency number 2222 or 999 depending upon the site of the collapsed person.

<table>
<thead>
<tr>
<th>Site</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeman Road Hospital</td>
<td>2222</td>
</tr>
<tr>
<td>Campus for Aging and Vitality</td>
<td>(9) 999</td>
</tr>
<tr>
<td>Royal Victoria Infirmary</td>
<td>2222</td>
</tr>
<tr>
<td>Dental Hospital</td>
<td>2222</td>
</tr>
<tr>
<td>Medical school</td>
<td>(9) 999</td>
</tr>
<tr>
<td>Community based services</td>
<td>(9) 999</td>
</tr>
</tbody>
</table>

7.3 2222
- On calling 2222 the member of staff should state “CARDIAC ARREST”, the exact location of the cardiac arrest:
  - Hospital
  - Wing
  - Floor
  - Ward
- Type of emergency:
  - Adult
  - Paediatric
- Neonatal
- Maternal
- Airway emergency
- Trauma

- The switchboard operator calls the cardiopulmonary arrest team for the area concerned, via the DECT handsets transmitting a short verbal message giving the type and location of the arrest

### 7.4 999

- The member of staff should respond to the questions posed by the emergency operator

### 7.5 Cardiac arrest team

- There are 4 different types of cardiac arrest and several different locations the arrest can occur within NUTH. Each will summon a different combination of staff to the scene.
  - Adult
  - Paediatric
  - Neonatal
  - Maternal

- **Adult cardiac arrest team**
  - Team leader – ideally an ALS provider
  - Airway specialist and airway assistant
  - Doctor 1 - Defibrillator operator
  - Doctor 2 – iv access
  - Nurse 1
  - Nurse 2
  - Porter

- **Paediatric cardiac arrest team**
  - Team leader – ideally an APLS provider
  - Airway specialist and airway assistant
  - Doctor 1 – defibrillation
  - Doctor 2 – iv access
  - Nurse 1
  - Nurse 2
  - Porter

- **Maternal cardiac arrest**
  - Team leader – ideally an ALS provider
  - Airway specialist and airway assistant
  - Obstetric specialist trainee
  - Neonatal specialist trainee
  - Doctor 1 – defibrillation
  - Doctor 2 – iv access
  - Nurse 1
  - Nurse 2
  - Porter

- **Neonatal cardiac arrest**
  - See neonatal resuscitation policy
The precise doctor or nurse fulfilling each of the roles listed above will vary depending upon the site of the arrest and experience of the team.

8 Resuscitation

Resuscitation should be delivered according to the Resuscitation Council UK Guidelines (Appendix 1 – 5)

9 Equipment

- The Resuscitation Committee will provide recommendations regarding essential equipment including standardisation. (appendix 7 - 8)
- Only items on the designated list should be in/on the trolley/bag. Any other items must be authorised by the resuscitation committee. Avoid clutter.
- In the case of neonatal resuscitation equipment, recommendations will be made by Trust Neonatologists.
- Pocket masks / masks & filters should be readily available in all adult clinical areas
- Community staff should carry pocket masks and filters or face shields on all visits out of clinical areas
- It is the responsibility of staff working in the clinical area to familiarise themselves with the location of all resuscitation equipment.
- Managers of all areas with resuscitation equipment will ensure that appropriate checks are carried out and documented

9.1 Red resuscitation trolleys

- Check the trolley, ensuring all the specific contents are present; in working order and have not expired
- Defibrillators, suction and oxygen equipment must be checked at least daily (working days) and preferably each shift, to ensure that they are in full working order.
- Any absent items should be documented and must be replaced immediately
- If any fault is found with resuscitation equipment, either during use or following daily checks, this should be reported immediately to the relevant maintenance department. If a fault occurred during use, a critical incident form should be completed
- A Trust record book must be signed and dated to confirm that checks have been performed
- If a trolley is shared between areas, the areas concerned must arrange a checking rota between them to ensure familiarity with the equipment
- Any resuscitation equipment must be renewed as soon as possible following use. All used disposable equipment must be replaced from an appropriate source.
- All non-disposable equipment must be cleaned and replaced in accordance with the manufacturer’s recommendations and the Infection control policy
A yearly audit of red trolley contents will be performed by the resuscitation officers. The results will be discussed at the Resuscitation Committee Meeting and feedback provided to areas where problems have been highlighted. The results will be shared with the Clinical Risk and Governance Group on an annual basis.

9.2 Red bags
- **RVI adults**
  - Red bags are taken from CCU, Leazes or New Victoria Wing recovery to the scene of a cardiac arrest by the airway assistant
  - They contain additional airway equipment and the EZ-IO intraosseous equipment
  - They contain waveform capnography monitoring
  - They also contain additional anaesthetic drugs

- **FRH adults**
  - Red bags are taken from ward 37 ICCU or ward 21 cardiac ICU to the scene of a cardiac arrest by the ICU resident
  - They contain extra airway equipment and the EZ-IO intraosseous equipment
  - They contain waveform capnography monitoring
  - They also contain additional anaesthetic drugs

- **RVI paediatrics**
  - Red bags are taken from PICU and paediatric recovery to the scene of a cardiac arrest
  - They contain extra airway equipment and the EZ-IO intraosseous equipment
  - They contain waveform capnography monitoring
  - They also contain additional anaesthetic drugs

- **FRH paediatrics**
  - Red bags are taken from PICU to the scene of a cardiac arrest
  - They contain extra airway equipment and the EZ-IO intraosseous equipment
  - They contain waveform capnography monitoring
  - They also contain additional anaesthetic drugs

9.3 Defibrillators
- Safe use of defibrillators is paramount
  - Only use a manual defibrillator if you have been trained to do so
  - No one must touch the patient during shock delivery. Standard clinical examination gloves (or bare hands) do not provide a safe level of electrical insulation
  - Any member of staff using the defibrillator in an unsafe manner should be asked to stop using it and their name reported to the resuscitation officers for further training
• Defibrillators on each site must be positioned appropriately in preparation for immediate use. If a defibrillator is shared by more than one area, it must be housed in an area of easy access to all areas concerned. All clinical staff must be aware of the whereabouts of the nearest defibrillator covering their area. Each new clinical area will be assessed, to ensure that a defibrillator can be brought to the bedside within 2 minutes.

• All qualified nursing staff should be aware of any appropriate accessory equipment required for their area of work (e.g. internal paddles, ECG cables etc.) and know how this equipment is used.

• Defibrillators should be checked daily as a minimum. Any problems should be reported to medical electronics.

9.4 AEDs

• AEDs make it possible to defibrillate many minutes before senior help arrives.
• AEDs may be used by any appropriately trained individual in the trust.
• AED training should be delivered on a yearly basis to all AED providers within NUTH.
• AEDs should be checked on a daily basis. If there are any problems they should be reported to medical electronics.

9.5 Drugs

• The evidence base to support the use of drugs during cardiac arrest is not strong so although drugs are still included among ALS interventions, they are of secondary importance to high quality uninterrupted chest compressions and early defibrillation.
• Drugs for cardiac arrest are available in blue boxes (immediate use for adults), red boxes (second line for adults) and green boxes (immediate use for paediatrics).
• A replacement box must be obtained immediately after use, or if the seal/ box appears to have been tampered with, or if it is approaching expiry.
• If the contents of a drug box have been tampered with, or the box is missing, report the incident to the Pharmacy department and complete an untoward incident form.

• Blue drug boxes
  Contents
  o Adrenaline prefilled syringe 10mls of 1:10000
    • Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
  o Amiodarone prefilled syringes 300mg
Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
- Atropine prefilled syringes 3mg in 30mls
- Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
- Adrenaline ampoule 1ml of 1:1000

**Location**
- Every resuscitation trolley
- Every theatre

**Green drug boxes**

**Contents**
- Adrenaline prefilled syringes 10mls of 1:10000
- Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
- Atropine prefilled syringes 500mcg in 5mls
- Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
- Amiodarone prefilled syringes 300mg in 30mls
- Due to supply problems prefilled syringes may be unavailable and ampoules will be provided
- Adrenaline ampoule 1ml of 1:1000

**Location**
- Every paediatric resuscitation trolley
- Every paediatric theatre

**Red drug boxes**

**Contents**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine 6mg in 2ml</td>
<td>1 box (6 vials)</td>
</tr>
<tr>
<td>Calcium chloride 10mmol in 10ml</td>
<td>1 box (10 amps)</td>
</tr>
<tr>
<td>Diazemuls 10mg in 2ml</td>
<td>1 box (10 amps)</td>
</tr>
<tr>
<td>Magnesium sulphate 1g in 10ml</td>
<td>1 box (10 amps)</td>
</tr>
<tr>
<td>Metoprolol 5mg in 5ml</td>
<td>1 box (5 amps)</td>
</tr>
<tr>
<td>Sodium bicarbonate 8.4% (50ml)</td>
<td>5 x 10ml amps</td>
</tr>
<tr>
<td>Glucose – hypostop</td>
<td>1 box</td>
</tr>
<tr>
<td>Sodium chloride 0.9% 10ml amps</td>
<td>20 amps</td>
</tr>
</tbody>
</table>

**Locations**

<table>
<thead>
<tr>
<th>RVI</th>
<th>FRH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 18 / ICU – NVW</td>
<td>Ward 37 / GICU</td>
</tr>
<tr>
<td>Ward 22 – Claremont wing</td>
<td>Ward 5</td>
</tr>
<tr>
<td>EAU – Leazes wing</td>
<td>Ward 24a / CCU</td>
</tr>
<tr>
<td>Ward 38 HDU – Leazes wing</td>
<td>Ward 32 / renal</td>
</tr>
<tr>
<td>CCU / ward 50 – Leazes wing (3 boxes)</td>
<td>Ward 21 / CICU</td>
</tr>
<tr>
<td>PICU – paeds wing</td>
<td></td>
</tr>
<tr>
<td>Ward 1b</td>
<td></td>
</tr>
</tbody>
</table>
• The Pharmacy Department is responsible for ensuring up-to-date boxes are available. It is the ward manager’s responsibility to ensure that the boxes are in-date. If a box is opened (regardless of whether any drugs are used or not), it is the responsibility of the senior member of staff present for that clinical area, to ensure the box is returned to pharmacy at the earliest available opportunity, in order that it can be replaced immediately from available stock.

10 Moving and handling

10.1 Patients can have cardiac arrest in many different areas of the hospital and body positions that make CPR difficult or at worse ineffective.

10.2 Patients should be moved into the supine position and where the cardiac arrest team can gain access according to trust Moving and Handling Policy

10.3 The emergency nature of this situation can lead to conflicts between ideal moving and handling practice and the necessity to act fast. Guidance for this situation has been provided by the UK resuscitation council

11 Documentation

11.1 The cardiac arrest
• The events occurring at cardiac arrest should be recorded by the team leader, or designated deputy, in the patients notes at the soonest possible moment
• Documentation should be compliant with general GMC recommendations and the Utstein template for recording cardiac arrests (appendix 9)

11.2 NCAA
• NUTH contributes data to the National Cardiac Arrest Audit
• A data collection form should be completed for every 2222 call where CPR is administered
  • By the CCU nurse at the RVI
  • By the outreach nurse at FRH
• Completed forms should be returned to a RO for entry on to the electronic database

11.3 Datix
• All cardiac arrests must be reported using the Datix system
• Reporting should be performed by the patient’s parent team. If the patient has no parent team it should be performed by the team leader
• Any other cardiac arrest related critical incidents (eg equipment issues) should also be reported using the datix system
• The clinical governance and risk department will comprise a summary of cardiac arrest reports on a yearly basis
12 Post-resuscitation care and transfer

12.1 The team leader is responsible for ensuring the patient receives appropriate post resuscitation care and that this is delivered in an appropriate environment. They may hand this task over to an appropriate person.

12.2 For more information on post-resuscitation care see the guideline Post-cardiac arrest care (Appendix 10)

12.3 For more information on intrahospital transfer of patients see the trust guideline

13 DNACPR
DNACPR is covered in the regional deciding Right policy – Your life Your choice

14 Equality and diversity

The Trust is committed to ensuring that, as far as is reasonably practicable, the way we provide services to the public and the way we treat our staff reflects their individual needs and does not discriminate against individuals or groups on any grounds. This document has been appropriately assessed.

15 Monitoring and Review

<table>
<thead>
<tr>
<th>Standard / process / issue</th>
<th>Monitoring and audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance at training</td>
<td>Directorates will monitor attendance rates for BLS training (adult, paediatric, neonatal) and put in place action plans to rectify any problems. Learning and Workforce Development will provide the Resuscitation Officers / Resuscitation Committee with quarterly reports on the BLS (adult &amp; paediatric) training figures.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>By: Directorates, Training and education group, Resuscitation Committee</td>
</tr>
<tr>
<td></td>
<td>Frequency: Quarterly</td>
</tr>
<tr>
<td>Review of cascade training</td>
<td>The Resuscitation Officers will monitor the training carried out by cascade trainers. This will include review of evaluation forms completed by attendees, attendance at a cascade update, (a minimum of one update a year) and by ensuring</td>
</tr>
<tr>
<td></td>
<td>Resuscitation Officer, Resuscitation Committee</td>
</tr>
<tr>
<td></td>
<td>Frequency: Quarterly</td>
</tr>
<tr>
<td>Task Description</td>
<td>Responsible Authority</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Adherence to resuscitation guidelines and equipment available</td>
<td>Resuscitation Officers will attend arrests when able (e.g. not training) to monitor the adherence to the resuscitation guidelines and equipment availability</td>
</tr>
<tr>
<td>To monitor resuscitation equipment throughout the Trust.</td>
<td>Audits of resuscitation equipment (including resuscitation trolleys).</td>
</tr>
<tr>
<td>To monitor DNACPR throughout the Trust.</td>
<td>Audits of Do not attempt resuscitation orders</td>
</tr>
<tr>
<td>To monitor rates of cardiac arrest throughout the trust</td>
<td>A datix form must be completed for every cardiac arrest in the trust. These will be summarised annually and a report sent to the resuscitation committee</td>
</tr>
<tr>
<td>To monitor rates of cardiac arrest throughout the trust</td>
<td>A National Cardiac Arrest form must be completed for every cardiac arrest. This will be uploaded onto the database by the ROs</td>
</tr>
<tr>
<td>To monitor compliance with BLS mandatory training</td>
<td>Learning and Workforce Development to publish quarterly reports and an annual report of compliance with BLS mandatory training for TEG, the Resuscitation Committee and the Resuscitation Officers</td>
</tr>
</tbody>
</table>
Unresponsive and not breathing normally

Call 999 and ask for an ambulance

30 Chest compressions

2 Rescue breaths

Continue CPR 30:2

As soon as AED arrives switch it on and follow instructions
Appendix 2

Resuscitation Council (UK) Adult Advanced Life Support

Unresponsive and not breathing normally

Call resuscitation team

CPR 30:2
Attach defibrillator/monitor
Minimise interruptions

Assess rhythm

Shockable (VF/Pulseless VT)

Return of spontaneous circulation

Non-shockable (PEA/Asystole)

1 Shock
Minimise interruptions

Immediately resume CPR for 2 min
Minimise interruptions

Immediate post cardiac arrest treatment
- Use ABCDE approach
- Aim for SpO₂ of 94-98%
- Aim for normal PaCO₂
- 12-lead ECG
- Treat precipitating cause
- Targeted temperature management

Immediately resume CPR for 2 min
Minimise interruptions

During CPR
- Ensure high quality chest compressions
- Minimise interruptions to compressions
- Give oxygen
- Use waveform capnography
- Continuous compression when advanced airway in place
- Vascular access (intravenous or intraosseous)
- Give adrenaline every 3-5 min
- Give amiodarone after 3 shocks

Treat Reversible Causes
- Hypoxia
- Hypovolaemia
- Hypo-hyperkalaemia/metabolic
- Hypothermia
- Thrombosis coronary or pulmonary
- Tension pneumothorax
- Tamponade cardiac
- Toxins

Consider
- Ultrasound imaging
- Mechanical chest compressions to facilitate transfer/treatment
- Coronary angiography and percutaneous coronary intervention
- Extracorporeal CPR
Appendix 3

Unresponsive

Shout for help

Open airway

Not breathing normally

5 Rescue breaths

No signs of life

15 Chest compressions

2 Rescue breaths 15 Chest compressions

Call resuscitation team (1 min CPR first, if alone)
Appendix 4

Resuscitation Council (UK)  
Paediatric Advanced Life Support

Unresponsive  
Not breathing or only occasional gasps

Call resuscitation team  
(1 min CPR first, if alone)

CPR  
(5 initial breaths then 15:2)  
Attach defibrillator/monitor  
Minimise interruptions

Assess rhythm

Shockable  
(VF/Pulseless VT)

Return of spontaneous circulation

Non-shockable  
(PEA/Asystole)

1 Shock  
4 J kg⁻¹

Immediately resume CPR for 2 min  
Minimise interruptions

Immediate post cardiac arrest treatment
- Use ABCDE approach
- Controlled oxygenation and ventilation
- Investigations
- Treat precipitating cause
- Temperature control

Immediately resume CPR for 2 min  
Minimise interruptions

During CPR
- Ensure high-quality CPR: rate, depth, recoil
- Plan actions before interrupting CPR
- Give oxygen
- Vascular access (intravenous, intraosseous)
- Give adrenaline every 3-5 min
- Consider advanced airway and capnography
- Continuous chest compressions when advanced airway in place
- Correct reversible causes
- Consider amiodarone after 3 and 5 shocks

Reversible Causes
- Hypoxia
- Hypovolaemia
- Hyper/hypokalaemia, metabolic
- Hypothermia
- Thrombosis (coronary or pulmonary)
- Tension pneumothorax
- Tamponade (cardiac)
- Toxic/therapeutic disturbances
Appendix 5

Resuscitation Council (UK) 2015

Newborn Life Support

Birth

Dry the baby
Maintain normal temperature
Start the clock or note the time

Assess (tone), breathing, heart rate

If gasping or not breathing:
Open the airway
Give 5 inflation breaths
Consider SpO₂ ± ECG monitoring

Re-assess
If no increase in heart rate look for chest movement
during inflation

If chest not moving:
Recheck head position
Consider 2-person airway control and other
airway manoeuvres
Repeat inflation breaths
SpO₂ ± ECG monitoring
Look for a response

If no increase in heart rate look for chest
movement

When the chest is moving:
If heart rate is not detectable or very slow
(< 60 min⁻¹) start chest compressions;
coordinate with ventilation breaths (ratio 3:1)

Re-assess heart rate every 30 seconds
If heart rate is not detectable or very slow
(< 60 min⁻¹) consider venous access and drugs

Update parents and debrief team

Acceptable pre-ductal SpO₂
2 min 60%
3 min 70%
4 min 80%
5 min 85%
10 min 90%

Increase oxygen
(grounded by cannula if available)

AT ALL TIMES
ASK:
DO YOU NEED HELP?
Maternal cardiac arrest algorithm

Put into left lateral position
Call for help if appropriate
Check maternal obs
Assess fetal wellbeing
Call for obstetric review

No

Unresponsive?

Yes

Open airway
Look for signs of life

Wedge/tilt patient

Call obstetric resuscitation team

Assess rhythm

100% supplemental O2
Intubate early
Insert two IV cannulae
(wide-bore)

If no response to CPR after 4 minutes, proceed to delivery/perimortem caesarean section

CPR 30:2
Until defibrillator/monitor attached

Call consultant obstetrician and anaesthetist

Assess rhythm

Shockable (VF/pulseless VT)

Non-shockable (PEA/asystole)

1 shock
150–360 J biphasic or 360 J monophasic

If no response to CPR after 4 minutes, proceed to delivery/perimortem caesarean section

Return of spontaneous circulation

Immediately resume CPR for 2 minutes

Reversible causes:
- Hypoxia
- Hypovolaemia
- Hyperkalaemia/metabolic
- Hypothermia
- Thrombosis – coronary or pulmonary
- Tamponade – cardiac
- Toxins
- Tension pneumothorax

During CPR:
- Ensure high-quality CPR: rate, depth, recoil
- Plan actions before interrupting CPR
- Give oxygen
- Consider advanced airway and capnography
- Continuous chest compressions when advanced airway in place
- Vascular access (intravenous, intrasosseous)
- Give adrenaline every 3–5 minutes
- Correct reversible causes

Immediate postcardiac arrest treatment
- Use ABCDE approach
- Controlled oxygenation and ventilation
- 12-lead ECG
- Treat precipitating cause
- Temperature control/therapeutic hypothermia

Immediately resume CPR for 2 minutes

KEY
ABCD = airway, breathing, circulation, disability, exposure; CPR = cardiopulmonary resuscitation;
RCG = electrocardiogram; PEA = pulseless electrical activity; VF = ventricular fibrillation; VT = ventricular tachycardia

RCOG Green-top Guideline No. 56
Appendix 6: Staff mandatory training recommendations

All staff having regular patient contact with adults need to complete adult BLS training
All staff having regular patient contact with children need to complete paediatric BLS training

Staff working only in adult patient areas

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Adult BLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Staff (with patient contact)</td>
<td>✓</td>
</tr>
<tr>
<td>Nursing staff</td>
<td>✓</td>
</tr>
<tr>
<td>District Nursing staff</td>
<td>✓</td>
</tr>
<tr>
<td>Health Visitors</td>
<td>✓</td>
</tr>
<tr>
<td>Podiatrists</td>
<td>✓</td>
</tr>
<tr>
<td>Nursing Assistants; Health care assistants (Aux/N; S/W; HCA)</td>
<td>✓</td>
</tr>
<tr>
<td>Dentist (all grades)</td>
<td>✓</td>
</tr>
<tr>
<td>Dental Nurses</td>
<td>✓</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>✓</td>
</tr>
<tr>
<td>Physiotherapy assistants / helpers</td>
<td>✓</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>✓</td>
</tr>
<tr>
<td>Occupational Therapy assistants / helpers</td>
<td>✓</td>
</tr>
<tr>
<td>Portering Staff / Operating department orderlies</td>
<td>✓</td>
</tr>
<tr>
<td>Plaster Technicians</td>
<td>✓</td>
</tr>
<tr>
<td>Cardiac &amp; Nuclear Technicians</td>
<td>✓</td>
</tr>
<tr>
<td>Operating department practitioners</td>
<td>✓</td>
</tr>
<tr>
<td>Operating Department Technicians and Anaesthetic Assistants (nursing)</td>
<td>✓</td>
</tr>
<tr>
<td>Radiographers/ Radiography practitioners</td>
<td>✓</td>
</tr>
<tr>
<td>Radiographer assistants / helpers</td>
<td>✓</td>
</tr>
<tr>
<td>Dietitians</td>
<td>✓</td>
</tr>
<tr>
<td>Any staff member who regularly cares for / deals with adult patients</td>
<td>✓</td>
</tr>
</tbody>
</table>

Staff working with paediatric patients - minimum requirements

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Adult BLS</th>
<th>Paed BLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Staff (with patient contact)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nursing staff</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>District Nursing staff</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Health Visitors</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nursing Assistants (Aux/N; S/W; HCA)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dentist (all grades)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dental Nurses</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Technicians in dentistry (with patient contact)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Physiotherapy assistants / helpers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Occupational Therapy assistants / helpers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Staff Group</td>
<td>Adult BLS</td>
<td>Paed BLS</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>helpers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Portering Staff</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Plaster Technicians</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cardiac &amp; Nuclear Technicians</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Operating department practitioners</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Operating Department Technicians and Anaesthetic Assistants (nursing)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Radiographers Radiography practitioners</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Radiographer assistants / helpers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dieticians</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Any staff member who regularly cares for / deals with paediatric patients</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Staff attending women in childbirth and or the immediate post natal period

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Adult BLS</th>
<th>Paed BLS</th>
<th>NLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwives</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Medical Staff</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal Nursing staff</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Nursery Nurses</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

NOTE: Advanced RCUK or ALSG courses are valid for a 4 year period, BLS is included and does not need to be repeated in the same year of successfully completing an advanced life support course if the Trust has a record of the advanced life support course.

Staff working in areas where there is access to Automated External Defibrillators need to have the appropriate training for the use of AEDs

Staff working in adult patient areas

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>ILS</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Anaesthetists/ Emergency Physicians/ Intensivists/ Acute medicine</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ST, ACCS, F2; F1s, other cardiac arrest team leaders</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ST in anaesthesia, intensive care medicine, emergency medicine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Nursing staff - On arrest team</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Nursing staff (CCU) on arrest team</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Cardiac &amp; Nuclear Technicians</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Operating Department Practitioners (on arrest team)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Potential BLS Cascade trainers</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Non-medical staff wishing to extend their role in manual defibrillation (at the discretion of each Directorate / department)</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** ILS course completion is not necessary if you have a valid ALS provider or instructor certificate. Staff may not want to attend UKRC courses however they should be able to demonstrate a working knowledge of the appropriate resuscitation algorithms along with safe use of equipment, to a level equivalent to the courses outlined below.
This does not exclude other groups of staff undertaking intermediate or advanced life support courses at the discretion of the line manager / Directorate Manager

### Staff working with paediatric patients

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Paed ILS / 1day PLS</th>
<th>APLS / EPLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Anaesthetists/ Accident and Emergency</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ST, ACCS’ F2</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ST &amp; Consultant anaesthetist (if appropriate to their role)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Nursing staff - On arrest team</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Operating Department Practitioners (on paediatric arrest team)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Potential BLS Cascade trainers</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

course completion is not necessary if you have a valid APLS or EPLS provider or instructor certificate

This does not exclude other groups of staff undertaking intermediate or advanced life support courses at the discretion of the line manager / Directorate Manager

### Qualified staff working in Obstetrics

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>In-house Clinical Skills day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwives</td>
<td>✓</td>
</tr>
<tr>
<td>Medical Staff</td>
<td>✓</td>
</tr>
</tbody>
</table>
Appendix 7: Trolley checklist for adults only

**Acute hospital care – ADULT**

<table>
<thead>
<tr>
<th>Item</th>
<th>Suggested availability</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket mask with oxygen port</td>
<td>Immediate</td>
<td>According to local policy</td>
</tr>
<tr>
<td>Oxygen mask with reservoir</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Self-inflating bag with reservoir</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Clear face masks, sizes 3, 4, 5</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Oropharyngeal airways, sizes 2, 3, 4</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Nasopharyngeal airways, sizes 6, 7 (and lubrication)</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Portable suction (battery or manual) with Yankauer sucker and soft suction catheters</td>
<td>Immediate</td>
<td>Airway suction equipment. NPSA Signal. Reference number 1309. February 2011</td>
</tr>
<tr>
<td>Supraglottic airway device with syringes, lubrication and ties/tapes/scissors as appropriate</td>
<td>Immediate / Accessible</td>
<td>Choice of device (e.g. laryngeal mask airway, i-gel®, laryngeal tube) and size will depend on local policy and staff training</td>
</tr>
<tr>
<td>Oxygen cylinder (with key where necessary)</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Oxygen tubing</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Magill forceps</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Stethoscope</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Tracheal tubes, cuffed, sizes 6, 7, 8,</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>Tracheal tube introducer (stylet)</td>
<td>Immediate / Accessible</td>
<td>This will depend on local policy and staff training. For example, there is not consensus on the role of a ‘stylet’.</td>
</tr>
<tr>
<td>Intubation bougie</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laryngoscope handles (x 2) and blades (size 3 and 4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spare batteries for laryngoscope and spare bulbs (if applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syringes, lubrication and ties/tapes/scissors for tracheal tube</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waveform capnograph – with appropriate tubing and connector</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Suggested availability</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Defibrillator</td>
<td>Immediate</td>
<td>Type of defibrillator, and locations determined by a local risk assessment. Available to enable shock within 3 minutes of collapse. Pacing function is recommended for cardiac units, cardiac catheter laboratories, emergency departments, intensive care units and operating theatres. It may also be appropriate for other settings, and this should be determined locally.</td>
</tr>
<tr>
<td>Manual and/or automated external defibrillator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacing function if needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive defibrillator pads</td>
<td>Immediate</td>
<td>Spare set of pads also recommended. Pads should be suitable for external pacing if needed.</td>
</tr>
<tr>
<td>Razor</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>ECG electrodes</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Intravenous cannulae (selection of sizes) and 2% chlorhexidine/alcohol wipes, tourniquets and cannula dressings</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>Adhesive tape</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>Intravenous infusion set</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>0.9% sodium chloride (1000 ml)</td>
<td>Immediate / Accessible</td>
<td>Amount depends on availability of further supplies.</td>
</tr>
<tr>
<td>Selection of needles and syringes</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>Intra-osseous access device</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Central venous access – Seldinger kit, full barrier precautions (hat, mask, sterile gloves, gown) and skin preparation (2% chlorhexidine / alcohol)</td>
<td>Accessible</td>
<td>Placed with ultrasound guidance, where possible.</td>
</tr>
<tr>
<td>Ultrasound / echocardiography</td>
<td>Accessible</td>
<td>To identify and treat reversible causes of cardiorespiratory arrest.</td>
</tr>
<tr>
<td>Item</td>
<td>Suggested availability</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Clock/timer</td>
<td>Accessible</td>
<td>Further personal protective equipment may be required according to local policy</td>
</tr>
<tr>
<td>Gloves, aprons, eye protection</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Nasogastric tube</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Sharps container and clinical waste bag</td>
<td>Immediate</td>
<td>Sharps container must be immediately available wherever sharps used</td>
</tr>
<tr>
<td>Large scissors</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>2% chlorhexidine / alcohol wipes</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood sample tubes</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>IV extension set</td>
<td>Accessible</td>
<td>Types of connectors, ports, and caps to be determined locally</td>
</tr>
<tr>
<td>Pressure bags for infusion</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood gas syringe</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood glucose analyser with appropriate strips</td>
<td>Immediate / Accessible</td>
<td>According to local policy</td>
</tr>
<tr>
<td>Drug labels</td>
<td>Accessible</td>
<td>Guidance on colour coding for syringe labels.</td>
</tr>
<tr>
<td>Manual handling equipment</td>
<td>Accessible</td>
<td>According to setting. See Guidance for safer handling during resuscitation in healthcare settings Resuscitation Council (UK) November 2009</td>
</tr>
<tr>
<td>Cardiorespiratory arrest record forms for patient records, audit forms and DNACPR forms</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Access to algorithms, emergency drug doses</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Suggested availability</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pocket mask with oxygen port – paediatric and adult</td>
<td>Immediate</td>
<td>According to local policy</td>
</tr>
<tr>
<td>Oxygen mask with reservoir - paediatric and adult</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Self-inflating bag with reservoir - paediatric and adult</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Clear face masks, size 00, 0, 1, 2, 3, 4, 5</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Oropharyngeal airways, sizes 00, 0, 1, 2, 3, 4</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Nasopharyngeal airways, sizes 4.0, 4.5, 5.0, 5.5, 6.0, 7.0 (and lubrication)</td>
<td>Immediate</td>
<td>Uncuffed tracheal tubes of appropriate length may be used as an alternative according to local policy</td>
</tr>
<tr>
<td>Portable suction (battery or manual) with Yankauer sucker (paediatric and adult) and soft suction catheters, sizes 5, 6, 8, 10, 12, 14</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Oxygen cylinder (with key if necessary)</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Oxygen tubing</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Magill forceps (adult and paediatric sizes)</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Stethoscope</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Supraglottic airway device with syringes, lubrication and ties/tapes/scissors as appropriate</td>
<td>Accessible</td>
<td>Choice of device and size will depend on local policy and staff training</td>
</tr>
<tr>
<td>Tracheal tubes, uncuffed sizes 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6</td>
<td>Accessible</td>
<td>Cuffed paediatric tubes according to local policy</td>
</tr>
<tr>
<td>Tracheal tubes, cuffed sizes 6, 7, 8</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Croup tube (uncuffed, longer than standard tracheal tube), sizes 2, 2.5, 3, 3.5</td>
<td>Accessible</td>
<td>Alternative devices may be substituted according to local policy (e.g. Cole’s® tubes)</td>
</tr>
<tr>
<td>Tracheal tube introducer (stylet) small and medium</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Intubating bougie – 5 Ch &amp; 10 Ch</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Laryngoscope handles (x 2) and blades (sizes - straight 0, 1, curved 2, 3, 4)</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Spare batteries for laryngoscope and spare bulbs (if applicable)</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Status</td>
<td>Ref.</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Syringes, lubrication and ties/tapes (e.g. Elastoplast® / Hypofix® / ribbon gauze/tape) and scissors</td>
<td>Accessible</td>
<td></td>
</tr>
</tbody>
</table>
# Acute hospital care – PAEDIATRIC

## CIRCULATION

<table>
<thead>
<tr>
<th>Item</th>
<th>Suggested availability</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defibrillator</td>
<td>Immediate</td>
<td>Type of defibrillator and locations decided by a local risk assessment. AEDs are not intended for use in infants (less than 12 months old) and this should be considered at risk assessment. Availability of pacing function according to local policy</td>
</tr>
<tr>
<td>- Manual and/or automated external defibrillator (AED)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Pacing function if needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive defibrillator pads – paediatric and adult sizes</td>
<td>Immediate</td>
<td>Spare set of pads also recommended. Pads should be suitable for external pacing if needed</td>
</tr>
<tr>
<td>ECG electrodes (paediatric &amp; adult sizes)</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Intravenous cannulae (sizes 14, 16, 18, 20, 22, 24G) and 2% chlorhexidine / alcohol wipes, tourniquets and dressings</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Adhesive tape</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Intravenous infusion sets (with and without incorporated burette)</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>IV extension set with 3-way taps and bungs</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>0.9% sodium chloride$^1$</td>
<td>Accessible</td>
<td>Amount depends on access to further fluids</td>
</tr>
<tr>
<td>10% Dextrose$^1$</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Selection of needles and syringes</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Intra-osseous access device with needles suitable for neonates, children and adults</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Colloid solution for IV infusion$^1$</td>
<td>Accessible</td>
<td>According to local policy</td>
</tr>
<tr>
<td>Central venous access – Seldinger kit, full barrier precautions (hat, mask, sterile gloves, gown) and skin preparation (2% chlorhexidine / alcohol)</td>
<td>Accessible</td>
<td>Sizes and type according to local policy. Placed with ultrasound guidance, where possible</td>
</tr>
<tr>
<td>Ultrasound / echocardiography</td>
<td>Accessible</td>
<td>To identify and treat reversible causes of cardiorespiratory arrest</td>
</tr>
<tr>
<td>Item</td>
<td>Suggested availability</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Clock / timer</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Gloves, aprons, eye protection</td>
<td>Immediate</td>
<td></td>
</tr>
<tr>
<td>Urinary catheter, sizes 6-14</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Nasogastric tube, sizes 8-14</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Sharps container and clinical waste bag</td>
<td>Immediate</td>
<td>Sharps container must be immediately available wherever sharps are used</td>
</tr>
<tr>
<td>Large scissors</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>2% chlorhexidine / alcohol wipes</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood sample tubes</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Pressure bags for infusion</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood gas syringe</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Blood glucose monitor with appropriate strips</td>
<td>Immediate / Accessible</td>
<td></td>
</tr>
<tr>
<td>Drug labels</td>
<td>Accessible</td>
<td>Guidance on syringe labels</td>
</tr>
<tr>
<td>Manual handling equipment</td>
<td>Accessible</td>
<td>According to setting. See Guidance for safer handling during resuscitation in healthcare settings Resuscitation Council (UK) November 2009</td>
</tr>
<tr>
<td>Cardiorespiratory arrest record form for patient records and audit forms. DNACPR forms appropriate for children.</td>
<td>Accessible</td>
<td></td>
</tr>
<tr>
<td>Access to algorithms, emergency drug doses, paediatric drug dose calculators (e.g. Broselow tape)</td>
<td>Immediate</td>
<td>According to local policy</td>
</tr>
</tbody>
</table>
Appendix 9: Utstein documentation

Cardiac Arrest Data Collection Form

Date of arrest YYYYY/MM/DD

Patient identifier (first name, last name, or ID number)

Sex

Age years (estimated) OR Date of birth YYYYY/MM/DD

Cardiac arrest determined by

Cause of arrest

Treatment before EMS arrival

- Bystander CPR
- Defibrillation by bystander ☐ or implanted defibrillator ☐

Resuscitation attempted by EMS

Location of arrest out of hospital in hospital

Witnessed If witnessed, time of arrest HH:MM

Initial rhythm

Chest compressions

Defibrillation attempt

Ventilation Drugs

Time of collapse HH:MM (estimated)

Time of call receipt HH:MM

Time vehicle stopped HH:MM

Time of first rhythm analysis HH:MM

Spontaneous circulation (on arrival in ED)

Hospital admission

Hospital discharge

Date of hospital discharge (or death) YYYYY/MM/DD

Neurologic status at discharge (CPC)
Post-resuscitation (ROSC and comatos)

**Immediate treatment**

- **Airway and Breathing**
  - Maintain SpO₂ 94 – 98%
  - Advanced airway
  - Waveform capnography
  - Ventilate lungs to normocapnia

- **Circulation**
  - 12-lead ECG
  - Obtain reliable intravenous access
  - Aim for SBP > 100 mmHg
  - Fluid (crystalloid) – restore normovolaemia
  - Intra-arterial blood pressure monitoring
  - Consider vasopressor/ inotrope to maintain SBP

- **Control temperature**
  - Constant temperature 32°C – 36°C
  - Sedation; control shivering

---

**Diagnosis**

- **Likely cardiac cause?**
  - No
  - Consider CT brain and/or CTPA
  - ST elevation on 12 lead ECG?
    - No
      - Consider Coronary angiography ± PCI
    - Yes
      - Coronary angiography
  - Cause for cardiac arrest identified?
    - No
      - Treat non-cardiac cause of cardiac arrest
    - Yes
      - Admit to Intensive Care Unit

---

**ICU management**

- Temperature control: constant temperature 32°C – 36°C for ≥ 24 h; prevent fever for at least 72 h
- Maintain normoxia and normocapnia; protective ventilation
- Optimise haemodynamics (MAP, lactate, ScvO₂, CO/CI, urine output)
- Echocardiography
- Maintain normoglycaemia
- Diagnose/treat seizures (EEG, sedation, anticonvulsants)
- Delay prognostication for at least 72 h

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**Optimising recovery**

- Secondary prevention e.g. ICD, screen for inherited disorders, risk factor management

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**Follow-up and rehabilit**

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The Newcastle upon Tyne Hospitals NHS Foundation Trust

Equality Analysis Form A

This form must be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

PART 1

1. **Assessment Date:** 2 February 2018

2. **Name of policy / guidance/ strategy / service development / Investment plan/Board Paper:** Cardiopulmonary Resuscitation (CPR) and Training Policy

3. **Name and designation of author:**
   Dr Jonathon Shelton, Chair, Resuscitation Committee

4. **Names & Designations of those involved in the impact analysis screening process:**
   Trust Resuscitation Committee

5. **Is this a:** Policy Yes
   **Is this:** Revised Yes
   **Who is affected:** Staff

6. **What are the main aims, objectives of the document you are reviewing and what are the intended outcomes?**
   (These can be cut and pasted from your policy)
   To, provide a high standard of Cardiopulmonary Resuscitation including immediate and effective Cardiopulmonary Resuscitation (CPR) at the site of a cardio-respiratory arrest, when indicated. In order to achieve this aim, the Trust recognises the requirement to provide a high standard of CPR training appropriate to the needs of different staff groups.

7. **Does this policy, strategy, or service have any equality implications?** No
   
   If No, state reasons and the information used to make this decision, please refer to paragraph 2.3 of the Equality Analysis Guidance before providing reasons:
   
   The policy applies to all NUTH staff, clinical and non-clinical, including those not directly employed by the Trust such as voluntary workers, students, locums and agency workers. The policy applies to all NUTH sites including the Royal Victoria Infirmary.
8. Summary of evidence related to protected characteristics

<table>
<thead>
<tr>
<th>Protected Characteristic</th>
<th>Evidence</th>
<th>Does evidence/engagement highlight areas of direct or indirect discrimination?</th>
<th>Are there any opportunities to advance equality of opportunity or foster good relations? If yes what steps will be taken? (by whom, completion date and review date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race / Ethnic origin (including gypsies and travellers)</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Sex (male/ female)</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Religion and Belief</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Sexual orientation including lesbian, gay and bisexual people</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Age</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Disability – learning difficulties, physical disability, sensory impairment and mental health. Consider the needs of carers in this</td>
<td>Policy applies equally to all.</td>
<td>None</td>
<td>N/A</td>
</tr>
</tbody>
</table>
9. Are there any gaps in the evidence outlined above? No

10. Engagement has taken place with people who have protected characteristics and will continue through the Equality Delivery System and the Equality Diversity and Human Rights Group. Please note you may require further engagement in respect of any significant changes to policies, new developments and or changes to service delivery. In such circumstances please contact the Equality and Diversity Lead or the Involvement and Equalities Officer.

   Do you require further engagement       No

11. Could the policy, strategy or service have a negative impact on human rights? (E.g. the right to respect for private and family life, the right to a fair hearing and the right to education?)

   No

PART 2

Name of author:  

Date of completion

(If any reader of this procedural document identifies a potential discriminatory impact that has not been identified, please refer to the Policy Author identified above, together with any suggestions for action required to avoid/reduce the impact.)