



Quality standards for cardiopulmonary resuscitation practice and training

Primary care - Quality standards

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1. Introduction and scope

Healthcare organisations have an obligation to provide a high-quality resuscitation service, and to ensure that staff are trained and updated regularly to a level of proficiency appropriate to each individual's expected role.

In this document, primary care refers to the services provided by General Practitioners (GPs) and their practices as well as walk-in centres and out-of-hours service providers. These quality standards also apply to all other healthcare professionals who contribute to the delivery of primary care services. Separate quality standards for cardiopulmonary resuscitation practice and training in primary dental care are available.

Each section of this document contains the quality standards and supporting information and, where appropriate, supporting tools for each specific aspect of cardiopulmonary resuscitation in primary care.

The core standards for the provision of cardiopulmonary resuscitation across all healthcare settings are described in:

[Introduction and overview](#) Quality standards for cardiopulmonary resuscitation practice and training

2. Background

Dealing with a cardiorespiratory arrest is a rare event for the individual primary care clinician. The circumstances and skills available to assist at such a time may vary widely, as may the equipment available. However, excellent results of resuscitation by GPs have been reported when defibrillation is carried out promptly, with survival rates exceeding 50% under favourable circumstances.

Since the publication of "Cardiopulmonary Resuscitation: Guidance for clinical practice and training in Primary Care" in 2001, the delivery of primary care in the UK has changed. The provision of primary care "in hours" and "out of hours" is now clearly demarcated. The patients have very different characteristics, and are attended by professionals with varying skill sets. Doctors working with a higher-risk patient case-load, or GPs with an extended role in Urgent and Emergency Care, may have more skills in resuscitation than those working purely in daytime practice or who have other special interests. Individual doctors' skill sets are also dictated by factors such as working in remote and rural areas or responding to requests for assistance from the ambulance service. Even the equipment required by a

clinician on call for emergencies from a surgery will differ from that needed for routine home visits.

These guidelines do not define the skill sets or equipment required for each area of practice. They aim to provide standards that can be tailored to the needs of the individual practitioner or healthcare organisation, and allow decisions to be made about the skill sets and equipment that are required for the patients under their care.

Supporting information

1. Resuscitation Council (UK). Cardiopulmonary Resuscitation Guidance for clinical practice and training in Primary Care. 2001 <http://www.resus.org.uk/archive/archived-quality-standards/cpr-guidance-for-clinical-practice-and-training-primary-care/>
2. Royal College of General Practitioners. Guidance and competences for the provision of services using practitioners with special interests (PwSIs) - Urgent & Emergency care. 2008.
3. Colquhoun MC. Resuscitation by primary care doctors. *Resuscitation* 2006; 70: 229-237

3. Resuscitation Officers

Standards

All providers of primary care should have ready access to advice about resuscitation practice and training. This is best led by a dedicated, adequately trained Resuscitation Officer (RO) whose prime responsibility is for the coordination of all matters pertaining to resuscitation including training, audit and overseeing equipment. However, this may be difficult to organise in some primary care settings and some or all of the responsibilities could be delegated to providers outside the NHS or other providers such as the ambulance service. If a dedicated RO post is not commissioned, the responsibilities for the role should be undertaken by people or organisations of at least an equal level of training and experience in resuscitation, and their expected roles must be clearly defined. An RO in the community might be expected also to cover other healthcare provision outside acute hospitals such as clinics or community hospitals.

1. Every primary care organisation should have access to guidance and training in resuscitation.
2. As a guide, in hospitals one RO is required for every 750 clinical members of staff (See [Acute care](#) document for further information).
3. Depending on geography and numbers needing training more than one RO (or people undertaking the duties of an RO) may be required in some places, or adjacent commissioners may consider sharing a post in others.
4. An RO (or people undertaking the duties of an RO) should be mobile, with a commitment to visit practices and urgent-care facilities to provide training and to advise on equipment.
5. Because of geography, the RO (or people undertaking the duties of an RO) for an area will require a local, named resuscitation lead in smaller organisations such as some General Practices. This person should be accountable for adherence to quality standards within their organisation and should ensure that basic tasks such as checking equipment are done routinely.
6. ROs (or people undertaking the duties of an RO) should be adequately trained and credible. At least one such clinical trainer should be an Advanced Life Support (ALS) provider (or equivalent) at a minimum and preferably an ALS Instructor or holder of another qualification in teaching/training, so that they can support and train clinicians with extended skill sets and those caring for high-risk patients.
7. The accommodation required for resuscitation training will vary according to local arrangements. An RO (or people undertaking the duties of an RO) must have an office base with computer facilities, internet access, a telephone and secure filing for confidential documents. There must be adequate storage space for training equipment. The venues where training is delivered must have adequate space for training using a manikin and appropriate electronic teaching aids should also be available.
8. An RO (or people undertaking the duties of an RO) should have adequate administrative support.
9. Equipment for training will vary according to local needs. Adult, paediatric and newborn manikins should be available as should a training AED, ECG monitor and rhythm simulator. Airway management manikins may be required in some settings or for some groups of professionals. Equipment should be portable so that it can be taken to training venues. To ensure that training is of maximum relevance, whenever possible equipment

(especially defibrillators) used in training should be the same model as that used in actual clinical practice.

10. Adequate financial provision should be made for staffing, equipment and accommodation for such resuscitation training when contracts are being negotiated.
11. An RO (or people undertaking the duties of an RO) has a responsibility to maintain his/her own education in resuscitation. In order to achieve this, teaching on resuscitation courses outside their own organisation is recommended. In addition, regular attendance at professional meetings must be supported with a budget for study expenses. They should consider clinical attachments in acute settings, in particular to provide opportunities for clinical involvement in resuscitation attempts, in order to maintain clinical credibility.

Supporting information

1. Council For Professionals as Resuscitation Officers (contact rocouncil@gmail.com)
2. Scottish Resuscitation Group. <http://www.srg.scot.nhs.uk/>

4. Training of staff

Standards

1. All staff in a primary care organisation, including non-clinical staff, should undergo regular training in resuscitation of both adults and children to the level appropriate to their role.
2. Staff should undergo such training at induction and at appropriately frequent, regular intervals thereafter to maintain knowledge and skills.
3. According to Resuscitation Council (UK) guidelines, training must be in place to ensure that clinical staff can undertake cardiopulmonary resuscitation (CPR). Training and facilities must ensure that, when cardiorespiratory arrest occurs, as a minimum all clinical staff can:
 - o recognise cardiorespiratory arrest;
 - o summon help;
 - o start CPR;
 - o attempt defibrillation (if appropriate) with an automated external defibrillator (AED) with the minimum of delay, whenever possible within 3 minutes of collapse.
4. Clinical staff should have at least annual updates.
5. Training and updates that include an assessment are recommended for clinical staff.
6. Non-clinical staff generally should have annual updates also. However, a local risk assessment may be undertaken to assess the likelihood of them encountering a patient requiring resuscitation (for example a driver for an out-of-hours doctor's car may be required to assist at a cardiorespiratory arrest more frequently than a secretary in some daytime General Practices).
7. As a minimum, non-clinical staff must be trained to:
 - o recognise cardiorespiratory arrest;
 - o summon help;
 - o start CPR using chest compressions.
8. For all staff, various methods to acquire, maintain and assess resuscitation skills and knowledge can be used for updates (e.g. life support courses, manikin/simulation training, mock-drills, 'rolling refreshers', e-learning, video-based training/self instruction). The choice should be determined locally. For example, training materials such as Lifesaver (<http://www.life-saver.org.uk/>), developed by the Resuscitation Council (UK), or very brief videos aimed at lay people may be appropriate for non-clinical staff. Hands-on training using simulation and including assessment is recommended for clinical staff.
9. A system must be in place for identifying any resuscitation equipment that requires special training, and for ensuring that such training takes place.
10. The RO or resuscitation lead should organise and co-ordinate resuscitation training for staff. However, in order to achieve training targets, the RO may need to delegate some aspects of training.

11. All primary care providers should make provision for staff to have sufficient time to train in resuscitation skills as part of their employment.
12. Specific training for cardiorespiratory arrests in special circumstances (e.g. resuscitation of children or the newborn) should be provided for medical, nursing and other clinical staff where appropriate.
13. All training must be recorded (e.g. in an organisation's training database).

Supporting information

1. Resuscitation Guidelines 2015, Resuscitation Council (UK). <http://www.resus.org.uk/resuscitation-guidelines/>
2. Quality and Outcomes Framework 2012-2013 Guidance for PCOs and practices March 2012. BMA and NHS Employers. http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_2012-13.pdf

Supporting tools

1. Lifesaver. An interactive film by Martin Percy. 2013. <http://www.life-saver.org.uk/>

5. The team approach to resuscitation

1. Each practice should plan for the need to attempt resuscitation. Staff should have an understanding of what role they would be expected to undertake in those circumstances.
2. In primary care the availability at any one time of particular resuscitation skills and the numbers of people available to assist may vary. This should be borne in mind when planning the response to a collapsed patient and team members must be prepared to be flexible about their role within the boundaries of their own skill level.
3. All those trained to participate in resuscitation should know where essential drugs and equipment can be accessed immediately.

6. Resuscitation equipment

Standards

Equipment lists for specific healthcare settings are contained in the separate document:

[Equipment and drug lists for cardiopulmonary resuscitation in Primary Care](#)

7. Decisions relating to cardiopulmonary resuscitation

Standards

1. Healthcare professionals must be familiar with and follow published guidance, including in particular "Decisions relating to Cardiopulmonary Resuscitation, a joint statement by the British Medical Association, the Resuscitation Council (UK), and the Royal College of Nursing" and the General Medical Council's current guidance on 'Treatment and care towards the end of life: good practice in decision making'. The detailed guidance in the Joint Statement should be used as the main source of reference to guide clinical practice.
2. Healthcare professionals must be familiar with and must comply with the law as it applies to decisions about CPR. There are some differences in the law among countries of the United Kingdom. Healthcare provider organisations must ensure that their staff receive appropriate information and training regarding these laws.
3. It is essential to identify:
 - o patients for whom cardiorespiratory arrest is an expected part of the process of dying and in whom CPR is

inappropriate;

- patients who do not wish to receive CPR.

4. It is important to identify:

- patients at risk of dying for whom advance care planning, including decisions about CPR, may avoid inappropriate treatment, including inappropriate resuscitation attempts.

The Confidential Inquiry into premature deaths of people with learning disabilities (CIPOLD) 2013 identified a number of pitfalls for GPs regarding do-not-attempt-CPR (DNACPR) decisions:

- Incomplete documentation, especially unclear recording of the reason for not attempting CPR.
- “Blanket” policies concerning DNACPR in some care homes.
- Premature decisions not to attempt CPR.
- Failures to inform family and/or carers of decisions.

Supporting information

1. Guidance from the British Medical Association, the Resuscitation Council (UK), and the Royal College of Nursing. 2016. <http://www.resus.org.uk/dnacpr/decisions-relating-to-cpr/>
2. Recommended standards for recording decisions about cardiopulmonary resuscitation. Resuscitation Council (UK). Revised 2015. <http://www.resus.org.uk/dnacpr/do-not-attempt-cpr-model-forms/>
3. Treatment and care towards the end of life: decision making, General Medical Council. http://www.gmc-uk.org/guidance/ethical_guidance/end_of_life_care.asp
4. The Confidential Inquiry into premature deaths of people with learning difficulties (CIPOLD) 2013. <http://www.bris.ac.uk/cipold/fullfinalreport.pdf>
5. Adults with incapacity (Scotland) Act 2000 Part 5 Code of Practice. <http://www.scotland.gov.uk/Publications/2008/06/13114117/0>
6. Mental Capacity Act 2005 (England and Wales). <http://www.legislation.gov.uk/ukpga/2005/9/contents>

Supporting tools

1. The Resuscitation Council (UK) provides model DNACPR forms for use in adults and children respectively. <http://www.resus.org.uk/dnacpr/do-not-attempt-cpr-model-forms/>
2. Scotland has a single DNACPR policy. For more information including supporting tools see: <http://www.scotland.gov.uk/Topics/Health/Quality-Improvement-Performance/Living-Dying-Well/DNACPR>
3. Recommended Summary Plan for Emergency Care and Treatment. <http://www.respectprocess.org.uk/>

8. Audit and reporting

The audit and reporting of resuscitation attempts in primary care presents some logistical challenges due to the relative rarity of such events in any one practice. Nevertheless, for this very reason, it is important to capture as much information as possible to allow review of the response and improve patient outcome in subsequent cases.

Standards

1. Audit should always include a full ‘debriefing’ of staff after any cardiorespiratory arrest. This allows them to reflect on the treatment given and permits discussion of whether anything might have been done differently. When appropriate, a root cause analysis should be undertaken and the action plan implemented. This may be done locally as a practice ‘significant event’ or by studying all the events in the locality, collated by the lead for resuscitation.
2. Patient safety incidents (any unintended or unexpected incident which could have led or did lead to harm for one or more patients receiving NHS-funded healthcare) should be reported to the National Reporting Learning

System.

3. Audit of DNACPR policies is mandatory (Health Services Circular 2000/028).

Supporting information

1. National reporting learning system:
<http://www.nrls.npsa.nhs.uk/report-a-patient-safety-incident/healthcare-staff-reporting/>
2. NHS Executive. Health Services Circular 2000/028 - Resuscitation Policy
http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Healthservicecirculars/DH_4004244

9. Research

Despite significant advances in recent years, there remains substantial scope for research to improve best practice in resuscitation science, training and clinical practice. Research to further the evidence base concerning resuscitation in primary medical care should be encouraged. Research is a core activity of the NHS [NHS Constitution Key Principle 3] and should be supported whenever possible.

Standards

1. Research must be conducted in accordance with the NHS Research Governance Framework. Research involving human participants, their organs, tissue or data require NHS Research and Development approval. Such research may also require approval from a Research Ethics Committee. If in doubt advice should be sought from the local Research and Development Office in the first instance or NHS Research Ethics Advice Service.
2. Research involving patients who lack capacity must also comply with relevant legislation (e.g. UK Medicines for Human Use [Clinical Trials] Regulations 2004; Mental Capacity Act 2005 [England and Wales]; Adults with Incapacity [Scotland] Act 2000).

Supporting information

1. National Research Ethics Service. <http://www.nres.nhs.uk/>
2. National Research Ethics Service Does my project require review by a Research Ethics Committee? <http://www.hra-decisiontools.org.uk/research/>
3. NHS Constitution. <https://www.gov.uk/government/publications/the-nhs-constitution-for-england>

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Quality standards for cardiopulmonary resuscitation practice and training

Primary care - minimum equipment and drug lists for cardiopulmonary resuscitation

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1. Introduction and scope

Healthcare organisations have an obligation to provide a high-quality resuscitation service, and to ensure that staff are trained and updated regularly to a level of proficiency appropriate to each individual's expected role.

As part of the quality standards for cardiopulmonary resuscitation practice and training this document provides lists of the equipment and drugs required for cardiopulmonary resuscitation in primary care. This document is referenced from, and is a component of, the Quality standards for cardiopulmonary resuscitation practice and training for primary care.

The core standards for the provision of cardiopulmonary resuscitation across all healthcare settings are described in:

[Introduction and overview](#) Quality standards for cardiopulmonary resuscitation practice and training

2. General points

1. All providers of primary care must ensure that their staff have immediate access to appropriate resuscitation equipment and drugs when needed. The standard AED sign should be used in order to reduce delay in a defibrillator in an emergency www.resus.org.uk/defibrillators/standard-sign-for-aeds/
2. All staff must have a means of calling for help (e.g. internal or external landline telephone, mobile telephone with reliable signal, alarm bell, or portable radio with reliable signal).
3. Staff should be trained to use the available equipment according to their expected roles.
4. It is recognised that planning for every eventuality is complex; therefore, providers of primary care must undertake a risk assessment to determine what resources are required in their local circumstances. Risk factors to consider are:
 - patient groups (e.g. adults, children,)

- likelihood of cardiorespiratory arrest (more patients seen in out-of-hours home visits may be at higher risk than those seen in routine daytime visits)
 - training of staff likely to be available to assist at any specific location
 - the response time for the ambulance service to be able to provide more advanced equipment and life support skills
5. This risk assessment should be overseen by a designated resuscitation lead. Expert advice should also be sought locally from those involved frequently in resuscitation (e.g. resuscitation officers, emergency physicians, ambulance services).
 6. Resuscitation equipment should be for single-patient use and latex-free, whenever possible. Where non-disposable equipment is used, a policy for decontamination between use in different patients must be available and followed.
 7. Personal protective equipment (e.g. gloves, aprons, eye protection) and sharps boxes must be available according to local policy.
 8. A reliable system of equipment checks and replacement must be in place to ensure that equipment and drugs are always available for use in a cardiorespiratory arrest. This process should be designated to named individuals, with reliable arrangements for cover in case of absence. The frequency of checks will depend upon local circumstances but should be at least weekly.
 9. The manufacturers' instructions must be followed regarding the use, storage, servicing and expiry of equipment and drugs.
 10. The precise availability of equipment and drugs should be determined locally. The lists below include recommendations on when equipment and drugs should be available:
 - Immediate - available for use within the first minutes of cardiorespiratory arrest (i.e. at the start of resuscitation).
 - Accessible - available for prompt use when the need is determined by those attempting resuscitation.
 11. These lists are not exhaustive. Local experts should be consulted to ensure that appropriate equipment and drugs are available when they are needed, to enable provision of high-quality attempted resuscitation.
 12. These lists refer *only* to equipment for the management of cardiorespiratory arrest. All organisations providing primary care should have appropriate equipment and drugs for managing other life-threatening emergencies (e.g. anaphylaxis).

3. Equipment and drug lists

Primary Care - Minimum suggested equipment

Item	Suggested availability	Comments
Protective equipment - gloves, aprons, eye protection	Immediate	
Pocket mask (adult) with oxygen port	Immediate	May be used inverted in infants
Oxygen cylinder (with key where necessary)	Immediate	
Oxygen tubing	Immediate	
		Preferably with facilities for paediatric use as well as use in adults.

Primary Care - Minimum suggested equipment

Automated external defibrillator (AED)	Immediate	Type of AED and location determined 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.
Adhesive defibrillator pads	Immediate	Spare set also recommended
Razor	Immediate	
Stethoscope	Immediate	
Absorbent towel	Immediate	To dry chest if necessary

Primary Care - For skill sets covering patients at increased risk of cardiorespiratory arrest

(see [Notes](#))

AIRWAY AND BREATHING

Item	Suggested availability	Comments
Protective equipment - gloves, aprons, eye protection	Immediate	
Pocket mask with oxygen port	Immediate	
Portable suction (battery or manual) with Yankauer sucker and soft suction catheters	Immediate	Airway suction equipment. NPSA Signal. Reference number 1309. February 2011
Oropharyngeal airways sizes 0,1,2,3,4	Immediate	
Self-inflating bag with reservoir (adult)	Immediate	
Self-inflating bag with reservoir (child)	Immediate	
Clear face masks sizes 0,1,2,3,4	Immediate	
Supraglottic airway device with syringes, lubrication, and ties/tapes/scissors as appropriate	Accessible	Choice of device (e.g. laryngeal mask airway, i-gel®/laryngeal tube) and size will depend on local policy and staff training
Oxygen cylinder (with key where necessary)	Immediate	
Oxygen tubing	Immediate	
Stethoscope	Immediate	

**Primary Care - For skill sets covering patients at increased risk of cardiorespiratory arrest
(see [Notes](#))**

CIRCULATION

Item	Suggested availability	Comments
Automated external defibrillator (AED)	Immediate	<p>Preferably with facilities for paediatric use as well as use in adults.</p> <p>Type of AED and locations determined by local risk assessment.</p> <p>AEDs are not intended for use in infants (less than 12 months old) and this should be considered at risk assessment.</p>
Adhesive defibrillator pads	Immediate	Spare set of pads also recommended.
Razor	Immediate	
ECG electrodes	Accessible	May use AED pads or ECG electrodes with ECG monitor, according to local policy.
Intravenous cannulae (selection of sizes) and 2% chlorhexidine/alcohol wipes, tourniquets and cannula dressings	Accessible	
Adhesive tape	Accessible	
Intravenous infusion set	Accessible	
Sodium chloride 0.9% (2 x 1000 ml)	Accessible	
Glucose 10% (500 ml)	Accessible	
Selection of needles and syringes	Accessible	
Intraosseous access device and / or needles suitable for infants, children and adults	Accessible	
IV extension set	Accessible	Types of connectors, ports, and caps to be determined locally
50 ml syringes x 2	Accessible	For intraosseous infusion
Adrenaline 1 mg (= 10 ml 1:10,000) as a prefilled syringe	Accessible	Number of syringes required will depend on anticipated time until ambulance arrives: 1mg needed for each 4-5 min of CPR
Algorithms, emergency drug doses, paediatric drug calculators	Immediate	According to local policy
Sharps container	Accessible	
Scissors	Accessible	
Glucose monitor	Accessible	

Notes

1. The list for those with enhanced skills or covering higher-risk patients, particularly, is for guidance only. Certain organisations may have practitioners whose skills can provide more advanced care than included on this list (tracheal intubation, arrhythmia management, other critical-care skills). Organisations employing those with such skills should ensure that provision is made so that these skills can be employed to ensure that patients receive optimal care.
2. Similarly, some organisations may have staff who are not familiar with certain equipment in which case a local decision should be made as to whether training is increased to cover such skills or whether such equipment is not required.
3. Keeping resuscitation drugs locked away - this problem was addressed in detail in 2005 by the Royal Pharmaceutical Society of Great Britain in a revision of the Duthie Report (1988) 'The Safe and Secure Handling of Medicines'. The RC (UK) responded with a statement, along with an accompanying letter written to the CQC explaining the position. www.resus.org.uk/media/statements/keeping-resuscitation-drugs-locked-away/

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Quality standards for cardiopulmonary resuscitation practice and training

Primary dental care - equipment list

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1. Introduction and scope

Primary dental care facilities have an obligation to provide a high-quality resuscitation service, and to ensure that staff are trained and updated regularly to a level of proficiency appropriate to each individual's expected role.

As part of the quality standards for cardiopulmonary resuscitation practice and training this document provides lists of the minimum equipment required for cardiopulmonary resuscitation in primary dental care. This document is referenced from, and is a component of, the 'Quality standards for cardiopulmonary resuscitation practice and training for primary dental care'.

The core standards for the provision of cardiopulmonary resuscitation across all healthcare settings are described in:

[Introduction and overview](#) Quality standards for cardiopulmonary resuscitation practice and training

2. General points

1. All clinical dental areas should have immediate access (within the first minutes of a cardiorespiratory arrest) to oxygen, resuscitation equipment for airway management including suction, and an automated external defibrillator (AED). The standard AED sign should be used in order to reduce delay in a defibrillator in an emergency www.resus.org.uk/defibrillators/standard-sign-for-aeds/
2. All primary dental care staff must have a means of calling for immediate help (e.g. internal or external landline telephone, mobile telephone with reliable signal, alarm bell).
3. Primary dental care staff should be trained to use the available equipment according to their expected roles.
4. Staff must be familiar with the location of all resuscitation equipment within their working area.
5. Resuscitation equipment should be for single-patient use and latex-free whenever this is feasible (e.g. bag-mask devices, oxygen masks and tubing).
6. Responsibility for checking resuscitation equipment rests with the staff at the dental facility where the equipment is held. This process should be designated to named individuals, with reliable arrangements for cover in case of absence. The frequency of checks will depend upon local circumstances but should be at least weekly. Checking should be the subject of local audit.
7. The manufacturer's instructions must be followed regarding the use, storage, servicing and expiry of equipment.

8. A planned replacement programme should be in place for disposable equipment items that have been used or that reach their expiry date.
9. Personal protective equipment (e.g. gloves, aprons, eye protection) must be available according to local policy.
10. AEDs reduce the mortality from cardiorespiratory arrest caused by ventricular fibrillation and ventricular tachycardia. The widespread deployment of such devices throughout the UK and the Department of Health's 'Public Access Defibrillation' programme has ensured that AEDs are now available in many public places and are in common use.
11. The general public expects AEDs to be available in every healthcare setting and primary dental care premises are no exception. The Department of Health Cardiovascular Disease (CVD) Outcomes Strategy promotes AED site mapping/registration, first responder programmes and ways of increasing the number of people trained in cardiopulmonary resuscitation (CPR) and use of AEDs. The Resuscitation Council (UK) recommends that all AEDs located in the community are registered with the local ambulance service, to facilitate prompt access to the nearest AED whenever one is needed.
12. The provision of an AED enables all dental staff to attempt defibrillation safely after relatively little training and should be immediately available within the first few minutes of a cardiorespiratory arrest occurring. These defibrillators should have internal data storage facilities and standardised consumables (e.g. adhesive electrode pads, connecting cables). Scissors may be required to remove items of clothing from the patient. Adult AEDs can be used safely on children over 8 years old. Some machines have paediatric pads or a mode that adjusts them to make them more suitable for use in children between 1 and 8 years of age. This type of AED should be considered, especially for practices that treat children. In cardiorespiratory arrest situations when paediatric pads or an adjustable AED are not available, a standard adult AED may be used in a child over 1 year old. Staff should be familiar with the device in use on their premises and its mode of operation.
13. Oxygen cylinders should be of such a size to be portable easily, but must also allow for an adequate flow rate (e.g. 15 l.min⁻¹) until the arrival of an ambulance (e.g. a full 'CD' size integral valve cylinder contains 460 l of oxygen and can deliver a flow rate of 15 l.min⁻¹ for approximately 30 min). Local policy should dictate the precise size of cylinder and whether a second cylinder is required in case the first one is at risk of running out. Published guidance from the British Thoracic Society on the use of high-flow oxygen has caused some concern and confusion regarding its safety. Current guidelines recommend that in any cardiorespiratory arrest the initial administration of high-flow oxygen (15 l.min⁻¹) is the correct course of action. If the patient regains a cardiac output and oxygen saturation levels can be measured accurately using a pulse oximeter (e.g. provided by the ambulance crew), then the concentration of inspired oxygen can be adjusted accordingly.
14. The precise availability of equipment should be determined locally. The lists below include recommendations on when equipment and should be available:
 - Immediate - available for use within the first minutes of cardiorespiratory arrest (i.e. at the start of resuscitation)
 - Accessible - available for prompt use when need is determined by those attempting resuscitation
15. These lists refer only to equipment for the management of cardiorespiratory arrest. Primary dental care facilities should also have appropriate equipment and drugs for managing other life-threatening medical emergencies (e.g. anaphylaxis) as recommended in the dental section in the British National Formulary.

3. Suggested minimum equipment list

Primary Dental Care		
AIRWAY AND BREATHING		
Item	Suggested availability	Comments

Primary Dental Care

Protective equipment - gloves, aprons, eye protection	Immediate	
Pocket mask with oxygen port	Immediate	
Portable suction e.g. Yankauer	Immediate	Airway suction equipment. NPSA Signal. Reference number 1309. February 2011
Oropharyngeal airways sizes 0,1,2,3,4	Immediate	
Self-inflating bag with reservoir (adult)	Immediate	
Self-inflating bag with reservoir (child)	Immediate	
Clear face masks for self-inflating bag (sizes 0,1,2,3,4)	Immediate	
Oxygen cylinder	Immediate	
Oxygen masks with reservoir	Immediate	
Oxygen tubing	Immediate	

Primary Dental Care

CIRCULATION

Item	Suggested availability	Comments
Automated external defibrillator (AED)	Immediate	Type of AED and location determined by a local risk assessment. Consider facilities for paediatric use, especially for practices that treat children.
Adhesive defibrillator pads	Immediate	Spare set of pads also recommended.
Razor	Immediate	
Scissors	Immediate	

Notes

1. Keeping resuscitation drugs locked away - this problem was addressed in detail in 2005 by the Royal Pharmaceutical Society of Great Britain in a revision of the Duthie Report (1988) 'The Safe and Secure

Handling of Medicines'. The RC (UK) responded with a statement, along with an accompanying letter written to the CQC explaining the position. www.resus.org.uk/media/statements/keeping-resuscitation-drugs-locked-away/

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9. [Acknowledgements](#)

1. Summary

'A patient could collapse on any premises at any time, whether they have received treatment or not. It is therefore essential that ALL registrants are trained in dealing with medical emergencies, **including resuscitation**, and possess up to date evidence of capability'.

General Dental Council 'Scope of Practice' 2013

- Cardiorespiratory arrest is rare in primary dental practice.
- There is a public expectation that dental practitioners and all other dental care professionals should be competent in treating cardiorespiratory arrest.
- All primary care dental facilities should have a process for medical risk-assessment of their patients.
- Specific resuscitation equipment should be available immediately in all primary care dental premises. This equipment list should be standardised throughout the UK.
- All clinical areas should have immediate access to an automated external defibrillator (AED).
- Primary dental care providers, general dental practitioners and all other dental healthcare professionals should undergo training in cardiopulmonary resuscitation (CPR) including basic airway management and the use of an AED.
- Each primary dental care facility should have a plan for summoning assistance in the event of a cardiorespiratory arrest. For most practices this will mean calling 999 immediately.
- There should be regular practice and teaching using simulation-based cardiorespiratory arrest scenarios.
- Dental staff's knowledge and skills in resuscitation should be updated at least annually.

2. Introduction and scope

Healthcare providers have an obligation to provide resuscitation skills in the event of a cardiorespiratory arrest and to

ensure that staff are trained and updated regularly to a level of proficiency appropriate to each individual's expected role. This document provides quality standards and supporting information for the aspects of cardiopulmonary resuscitation practice and training relevant to the setting of primary dental care. The document does **not** include the resuscitation standards expected when 'Conscious Sedation' techniques are undertaken by dental practitioners as there is existing guidance for this specific area of practice from the Academy of Medical Royal Colleges (see Supporting information).

Furthermore, this document replaces the Resuscitation Council (UK) document 'Medical Emergencies in General Dental Practice' which will no longer be supported or available on the RC (UK) website. Those requiring information on medical emergencies encountered in dental practice (other than cardiorespiratory arrest) are referred to the relevant section in the [British National Formulary](#) (BNF). Further enquiries should be directed to the Dental Advisory Group of the BNF or the British Dental Association who contributed to the advice within the BNF.

The core standards for the provision of cardiopulmonary resuscitation across **all** healthcare settings are described in: [Introduction and overview](#) Quality standards for cardiopulmonary resuscitation practice and training.

3. Resuscitation Equipment

Standards

There should be a standard list of equipment required for cardiopulmonary resuscitation within any primary dental care practice in the UK.

Equipment lists for specific healthcare settings are contained in the separate document; [Minimum equipment list for cardiopulmonary resuscitation in primary dental care](#)

4. Training of staff

Standards

Accurate documentation of any patient's medical history should allow most people at risk of certain medical emergencies and subsequent cardiorespiratory arrest to be identified in advance of any proposed treatment.

1. Dental practitioners and other dental care professionals must be trained in cardiopulmonary resuscitation (CPR) so that in the event of cardiorespiratory arrest occurring they can:
 - o recognise cardiorespiratory arrest;
 - o summon help immediately (dial 999);
 - o start CPR, using chest compressions and providing ventilation with a pocket mask or bag-mask device and supplemental oxygen. (Evidence suggests that chest compressions can be performed effectively in a fully reclined dental chair);
 - o attempt defibrillation (if appropriate) within 3 minutes of collapse, using an AED;
 - o provide other advanced life support skills if appropriate and if trained to do so.
2. Dental practitioners and other dental care professionals who work with children should learn the differences in CPR (from CPR in adults) for use in children and practise these on paediatric manikins.
3. Dental practitioners and other dental healthcare staff should update their knowledge and skills in resuscitation at least annually.
4. A system must be in place for identifying which equipment requires special training, (such as AEDs, bag-mask devices and oropharyngeal airway insertion) and for ensuring that such training takes place.
5. All new members of dental staff should have resuscitation training as part of their induction programme.

6. Training can be undertaken locally within the dental practice or within local or regional training centres. Qualified trainers in resuscitation from within the dental practice staff should be encouraged to deliver 'cascade' training to other staff members (e.g. in Basic Life Support). Training in more advanced techniques may require a more advanced trainer (e.g. Resuscitation Officer) or attendance at a designated course.
7. For all staff, various methods to acquire, maintain and assess resuscitation skills and knowledge can be used for updates (e.g. life support courses, simulation training, mock-drills, 'rolling refreshers', e-learning, video-based training/self instruction). The appropriate methods should be determined locally. For example, the interactive film Lifesaver (<http://www.life-saver.org.uk/>), developed by the Resuscitation Council (UK), or brief videos aimed at lay people may be appropriate for non-clinical staff. 'Hands-on' simulation training and assessment is recommended for clinical staff.
8. Training in resuscitation must be a fundamental requirement for dental practitioners and other dental care professional qualifications. Undergraduate and postgraduate examinations for all dental practitioners and dental care professionals should include an evaluation of competency in resuscitation techniques appropriate to their role.
9. All primary dental care providers should recognise the need for and make provision for dental staff to have sufficient time to train in resuscitation skills as part of their employment.
10. All training should be recorded in a database.
11. Training and retraining should be a mandatory requirement for Continuing Professional Development and maintenance on professional healthcare registers. It may be appropriate for some retraining to be undertaken using 'e-learning'.

5. Transfer of patients

Standards

1. In the event of cardiorespiratory arrest, emergency services should be summoned immediately by calling 999. A local protocol should include clear directions on how to find the dental care facility and whether or not there may be a difficult access point. Primary dental care practices should identify clearly all access points and patient removal routes.
2. Ambulance personnel will provide equipment, expertise, practical help and a range of treatments supplementary to those available in the dental surgery.
3. Written documentation containing details of the dental procedure (if any), medical emergency, any treatment given and the name of the Dental Practitioner should all accompany the patient to hospital.
4. Relatives or carers should be informed about the transfer of a patient, but should not expect to travel with the patient in the ambulance. Contact details should be obtained by the ambulance personnel.

6. Audit

Standards

1. To ensure a high-quality service, primary care dental facilities should audit:
 - weekly (as a minimum) checks of the resuscitation equipment;
 - other elements of health and safety (e.g. manual handling).
2. Audit should always include a full 'debriefing' of staff after any cardiorespiratory arrest. This allows them to reflect on the treatment given and permits discussion of whether anything might have been done differently.
3. Where audit identifies deficiencies, steps must be taken to correct these.

7. Decisions relating to cardiopulmonary resuscitation

Standards

Dental practitioners and other dental healthcare providers may treat patients who have a 'Do Not Attempt Cardiopulmonary Resuscitation' decision or who possess a legal document (Advance Decision to Refuse Treatment) specifying that they do not want CPR in the event of a cardiorespiratory arrest. Management of such patients must comply with the law and should follow national guidance ' [Decisions Relating to Cardiopulmonary Resuscitation - A Joint Statement by the British Medical Association, Resuscitation Council \(UK\) and the Royal College of Nursing](#)', and further guidance issued by the General Medical Council.

8. Supporting information

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17. UK Ambulance Services Clinical Practice Guidelines 2013. <http://aaceguidelines.co.uk>
18. Emergency Oxygen Use in Adult Patients (2008). <http://www.brit-thoracic.org.uk/guidelines/emergency-oxygen-use-in-adult-patients.aspx>
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http://www.gmc-uk.org/guidance/ethical_guidance/end_of_life_care.asp
21. Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease. Department of Health.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/141273/9387-2900853-CVD-Outcomes_web1.pdf
22. Standards for Conscious Sedation in the Provision of Dental Care. Report of the Intercollegiate Advisory Committee for Sedation in Dentistry 2015
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9. Acknowledgements

The Resuscitation Council (UK) acknowledges the contribution made to this document by:

Dr Julie L Burke, PhD FDSRCS BChD
Lecturer and Specialist in Oral Surgery
School of Dentistry, Leeds.

Dr Kathryn H Taylor, PhD FDS.RCS (Oral Surg.) FDS.RCS BDS BSc (hons)
Lecturer and Specialist in Oral Surgery
School of Dentistry, Leeds.

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Quality standards for cardiopulmonary resuscitation practice and training

CPR and AED training in the community

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1. Introduction and scope

Cardiac arrest can occur at any time and in any place. These standards refer specifically to cardiac arrest in adults where the most important interventions to save a life are: early recognition of cardiac arrest, calling the emergency services (dialling 999*), starting cardiopulmonary resuscitation (CPR) and using an automated external defibrillator (AED). In adults, defibrillation within 3-5 minutes of collapse may produce survival rates as high as 50-70%. Recent Out of Hospital Cardiac Arrest Audit data show that, in England, around 30% of cardiac arrest victims, for whom bystander CPR could have been initiated, did not receive CPR prior to the arrival of the emergency medical services (OHCAO Registry Report, 2017

https://warwick.ac.uk/fac/sci/med/research/ctu/trials/ohcao/publications/epidemiologyreports/ohcao_annual_rep

The Resuscitation Council UK Strategic Plan (Resus 2020 www.resus.org.uk/about-us) has, therefore, identified the development of quality standards for CPR practice and training in the community as one of its key objectives.

In certain settings it may be appropriate to teach specific approaches to paediatric resuscitation, but the standards in this document refer to the management of cardiac arrest in adults according to the Resuscitation Council UK current guidelines for Basic Life Support and Automated External Defibrillation (www.resus.org.uk/resuscitation-guidelines/adult-basic-life-support-and-automated-external-defibrillation/).

With these community quality standards, the Resuscitation Council UK aims to:

- improve outcomes from out-of-hospital cardiac arrest by increasing response rates from concerned citizens
- improve quality of training and service provision
- provide individuals, as members of their community, with guidance on how to act when a person has a cardiac arrest
- provide guidance to organisations on their responsibilities in providing emergency care for victims of cardiac arrest
- provide guidance to organisations on their responsibilities in providing resuscitation training and equipment

- highlight the training, support, guidance and legislation available for individuals and organisations to achieve these standards within the countries of the UK
- offer resources to assist trainers to deliver agreed teaching specifications
- promote AED availability and use in the wider community
- ensure all out-of-hospital cardiac arrests are reported accordingly.

The Resuscitation Council UK already defines quality standards for healthcare settings (www.resus.org.uk/quality-standards). There are numerous other settings where cardiac arrest can occur, and where CPR standards are not as clearly defined, including: workplaces, swimming pools, health clubs, shopping centres, transport hubs, the home and many more. These Resuscitation Council UK standards are aimed at giving guidance to support training and practice in non-clinical settings.

*Please note that in the UK, 999 and 112 both connect you to emergency services with no enhanced location service for either. In Europe, 112 may be dialled to access the national emergency services of the country you are calling from. For simplicity, this document refers to 'dialling 999' as the generic way of accessing the emergency services in the UK.

2. Core standards for cardiopulmonary resuscitation

When cardiac arrest occurs, systems and education should be in place to ensure that:

- cardiac arrest is recognised early
- help is sought – shout for nearby help and dial 999
- CPR is promptly started according to current guidelines
- an AED is located, retrieved and used as early as possible.

These interventions can be performed with guidance from the 999 call handler including: instructions for confirming cardiac arrest, starting compression-only CPR, and locating, retrieving and using an AED.

3. Methods

A working group reviewed the evidence for specific aspects of resuscitation practice based on the current Resuscitation Council UK Guidelines. The process used to produce these guidelines is accredited by the National Institute for Health and Care Excellence (www.nice.org.uk).

4. The National Standard

As far as possible, all citizens/residents of the UK should be aware of how to: recognise a cardiac arrest, call the emergency services (dial 999), start CPR, locate and operate an AED.

Organisations where there is an expectation or requirement to perform CPR and use an AED should have appropriately trained personnel and equipment fit for that purpose.

To achieve this, the Resuscitation Council UK is committed to:

- developing strategies to raise national awareness of CPR, for example: Lifesaver, national TV campaigns, World Restart a Heart Day, media engagement
- lobbying UK Governments to mandate that all school children are trained in CPR and use of an AED. English schools have already agreed to this and will be implementing from 2020
- advising 999 call handlers to provide appropriate telephone instructions to help callers: recognise cardiac arrest, start CPR, locate and use the nearest AED
- setting standards for CPR and use of an AED
- setting standards for the teaching of CPR and use of an AED
- setting standards for provision of CPR-related equipment and their use and maintenance.

5. Organisational standards**

5.1 Organisations where resuscitation is not their prime activity should:

- meet the legal requirement for first aiders in the workplace in accordance with The Health and Safety (First-Aid) Regulations 1981 (www.hse.gov.uk/pubns/books/l74.htm).
- nominate a member of staff to manage first aid and resuscitation related activities including training and

equipment monitoring

- train all staff to at least the CPR/AED Awareness standard so that CPR is started without delay whilst waiting for further help
- ensure systems are in place to ensure that: 999 calls are placed rapidly; quality CPR is started early, and an AED is located and used promptly and appropriately
- consider training key staff to an enhanced CPR standard ([see Appendix A](#)).

To achieve this, organisations should:

- have permissive guidance to enable all staff to act promptly to help save a life
- make training available to all staff
- appoint an accountable person to manage first aid and resuscitation provision
- conduct a risk assessment with regard to providing an AED (www.resus.org.uk/defibrillators/do-i-need-an-aed/)
- ensure that the location of first aid equipment (including AED) is clearly and appropriately signposted (www.resus.org.uk/defibrillators/standard-sign-for-aeds/)
- make all staff aware of where the nearest AED is located
- ensure the AED (where provided) is readily accessible and that its presence is indicated throughout the premises with appropriate AED signage
- where an AED is provided by the organisation, ensure that it is subject to appropriate checks and registered with the ambulance service and/or national defibrillator network.

5.2 Organisations with a responsibility to provide resuscitation in the community should:

- nominate a member of staff to oversee first aid and resuscitation activities, including training
- ensure that all staff with a duty to respond have a current first aid qualification that includes CPR and AED operation
- encourage all other staff to be trained to at least the CPR/AED Awareness Standard
- ensure that all staff have appropriate equipment to carry out their role
- train key staff to an enhanced CPR standard ([see Appendix A](#))
- Consider training some staff to become CPR trainers.

In order to achieve this, organisations should:

- appoint an accountable person to manage first aid and resuscitation provision, including training
- have a system in place to facilitate early call for an ambulance and for rescuers to be able to talk directly with call handler if necessary
- ensure local procedures allow emergency services easy access to premises
- have permissive guidance to enable all staff to act promptly to help save a life
- make CPR/AED training available to all staff
- provide access to appropriate training for all those with a duty to respond
- conduct a first aid needs assessment
- conduct a risk assessment with regard to purchasing an AED (www.resus.org.uk/defibrillators/do-i-need-an-aed/)
- provide an AED or access to an AED in the workplace. Staff should know the location of the AED, ensure it is signposted and registered with the local ambulance service.

6. Training standards

Training standards are defined for four distinct groups:

1. The general population – CPR/AED Awareness.
2. Children in secondary education (taught via curriculum) – Basic CPR/AED Training.
3. Those without a formal duty of care – Basic CPR/AED Training.
4. Those with a duty of care – Enhanced CPR/AED Training.

Training specifications for these groups are provided at [Appendix A](#). It is up to individual organisations to decide and define their respective training liability, which may involve formal risk assessment.

The principles underlying these training standards are that:

- individuals should receive training based on their role and responsibilities
- CPR training may comprise a variety of methods (e.g. formal courses, simulation training, video-based training/self-instruction, videos). For example, Lifesaver (<https://www.life-saver.org.uk/>) and Lifesaver VR (<https://lifesavervr.org.uk/>) developed by the Resuscitation Council UK, teach CPR and AED awareness through interactive gaming on a smartphone, tablet or computer
- all training should include: recognition of cardiac arrest, the need for an early 999 call, performance of chest compressions and retrieving and using an AED
- enhanced training should include the above, plus: methods of artificial ventilation, compression/ventilation ratios, simulated use of an AED in a real-world (e.g. workplace) environment. Where possible, CPR performance should be objectively assessed using a simulated incident and a resuscitation training manikin that gives feedback on compression rate, depth, position and recoil. Where possible, records of an individual's CPR training performance should be retained by the organisation
- at least annual refresher training should be provided and for basic and enhanced level, this must include practical performance of CPR.

7. Equipment standards

Organisations should have equipment available based on the level of resuscitation training and response they provide:

- there should be a process in place to ensure all equipment and supplies are in working order
- all organisations should conduct a risk assessment regarding the provision of an AED.

To achieve this, organisations should have systems in place to:

- ensure that emergency equipment is located and signposted appropriately and checked according to manufacturers' guidelines
- ensure that training covers the use, location and checking of equipment
- monitor the checking of equipment, including record of expiry dates and functionality of equipment, using signed and dated checklists
- where owned or leased by the organisation, ensure the AED is registered with the local ambulance service and/or national defibrillator network.

8. Supporting documents

Resuscitation Council UK Guidelines 2015 (2020): www.resus.org.uk/resuscitation-guidelines/

A guide to AEDs: www.resus.org.uk/publications/a-guide-to-aeds/

Guide to AED signage: www.resus.org.uk/defibrillators/standard-sign-for-aeds/

HSE – First aid at work legislation: www.hse.gov.uk/pubns/books/l74.htm

Links to National Strategy Documents

England: www.resus.org.uk/publications/resuscitation-to-recovery/

Northern Ireland: www.health-ni.gov.uk/articles/community-resuscitation

Scotland: www.gov.scot/Publications/2016/11/7733/2

Wales: <https://gov.wales/health-social-care>

UK Out-of-Hospital cardiac arrest outcomes project:

<https://warwick.ac.uk/fac/med/research/ctu/trials/ohcao/>

CPR, AEDs and the law: www.resus.org.uk/cpr/cpr-aeds-and-the-law/

9. APPENDIX A

9.1 Teaching Specification – Community-based Adult CPR/AED Awareness

CPR Awareness training can be delivered using self-directed learning using a variety of learning resources. For example, Lifesaver (<https://lifesaver.org.uk/>) and Lifesaver VR (<https://lifesavervr.org.uk/>) are available as a free resource for the general public and also available as a licensed e-learning product. To discuss how this might benefit your organisation, contact the Resuscitation Council UK.

Standard	Content to be taught
Recognise emergency situation	Recognition of life-threatening emergencies and sudden collapse sometimes preceded by the victim feeling 'unwell'. The difference between 'heart attack' and 'cardiac arrest'. You may shout for help at any time in order to alert people nearby.
Danger	Make sure you, the victim and others are safe before proceeding. If in doubt, dial 999. Don't delay assessment of victim if environment appears safe.
Response	Check the victim for a response. Gently shake their shoulders and ask loudly 'Are you all right?'
Airway	Open the airway. Turn victim onto their back and open airway using head tilt and chin lift.
Breathing	Look, listen and feel for normal breathing for no more than 10 seconds. Be aware that slow, noisy, gasping breaths are sometimes present during cardiac arrest and that these shouldn't be confused with 'normal' breathing. (In an unresponsive victim who is breathing normally, dial 999).
Dial 999* and send for an AED	If the victim is unresponsive and not breathing normally, shout for nearby help and ask someone to dial 999 or do it yourself on 'hands-free' and stay with the victim in order to start CPR promptly. Be aware that the 999 call handler will ask questions and attempt to help by giving instructions. If possible, send someone to find an AED and bring it to the victim without delay. Some rural areas may have procedures for alerting local volunteers and this should be discussed in the context of summoning additional help whilst ensuring that the 999 call is made without delay.
Start Chest Compressions	Kneel next to victim, place heel of one hand in centre of victim's chest, place heel of other hand on top and interlock fingers. Keep elbows straight and shoulders vertically above your hands. Compress the chest at a rate of 100-120 per minute to a depth of 5-6 cm ensuring all pressure is released from the chest between each compression without losing contact between the heel of the hand and the sternum. DO NOT interrupt CPR [chest compressions] unless: <ul style="list-style-type: none"> a healthcare professional tells you to stop, the casualty is definitely waking, or you become exhausted.
Locate and use AED	Needs additional people to find and bring an AED whilst others ensure uninterrupted CPR is performed. Turn on the AED and follow prompts. Need to achieve removal of clothes and application of pads whilst minimising interruption to chest compressions.

*There is no need to teach alternate phone numbers as 999, 112, 911 all connect to the 999 service in UK.

9.2 Teaching specification – Community-based Adult CPR/AED Basic

Standard	Content to be taught
Recognise emergency situation	Recognition of life-threatening emergencies and sudden collapse sometimes preceded by the victim feeling 'unwell'. The difference between 'heart attack' and 'cardiac arrest'. You may shout for help at any time in order to alert people nearby.
Danger	Is it safe to approach? Remove or manage any immediate danger. Do not ask for a definitive list of 'dangerous circumstances', stick to the simple to understand principles. If it is safe to approach, proceed quickly, if there is manageable danger, manage the danger, and if it is too dangerous or complex to proceed, dial 999 in the first instance.
Response	Is victim responsive or unresponsive? Gently try to rouse the victim using 'shake and shout'. Try to stimulate a response by gently shaking the victim by the shoulders and asking loudly "Are you all right?". An unresponsive victim is 'unconscious' and needs immediate further assessment and professional help. If the victim responds, leave them in the position you found them and try to ascertain whether they want/need help and summon accordingly. Reassess frequently.
Alert others	Alert others to your situation to expedite a response (this does not have to be done at a specific point). Shout for help and alert other citizens or colleagues to the emergency. If on your own, do not phone 999 until you know whether the victim is breathing or not, but if there are multiple bystanders, when appropriate, they can call 999 (see below) and get a defibrillator to your aid, the sooner the better. Be aware that some rural areas may have procedures for alerting local volunteers and this should be discussed in the context of summoning additional help whilst ensuring that the 999 call is made without delay.
Airway	Use head tilt and chin lift to manually open airway. Place a hand on the victim's forehead and then lift the bony part of the point of the chin. When you know or suspect there is neck trauma, you may assess for breathing first, but if breathing is absent, an airway opening manoeuvre is required.
Breathing	Look, listen and feel for normal breathing for no more than 10 seconds. Maintain head tilt and chin lift and: Look at the victim's chest to ascertain whether they are breathing normally. Look for regular rise and fall of the chest associated with normal breathing. Listen for noises of breathing near to the victim's mouth and nose. Feel for expired air with your cheek next to the victim's mouth. The 'feel' does not refer to placing a hand on the chest as this necessitates the removal of a hand that is keeping the airway open. Assessment of breathing should take long enough to make an accurate assessment but should not delay commencement of CPR. Assessment should take no more than 10 seconds. Discuss gasping or agonal breathing and apparent seizures and that these should not be confused with 'normal breathing'. Where possible, show a video of agonal gasps to aid recognition (widely available on the internet). If you are certain that the victim is breathing normally but still unresponsive: Place them in the recovery position, summon additional help, dial 999 if concerned. If victim is unresponsive and NOT breathing normally: Dial 999*, start CPR as below.
	Start chest compressions. Ensure correct hand position (middle of lower half of sternum). Do not teach 'measuring techniques' just identify the centre of the chest. Compression depth 5-6 cm. Emphasise that quality of chest compressions, including

Standard	Content to be taught
Circulation/CPR	<p>depth, is directly related to survival.</p> <p>Compression rate 100-120 per minute. Ensure full recoil of chest between compressions. Spend as much time on compression as recoil, keep it smooth. Rescuer's arms should be straight at the elbow with shoulders vertically above the heels of the hands. The rescuer's weight should be through the heel of the hand directly onto the bony sternum. The best position for performing chest compressions is kneeling beside the victim. It does not matter which side you do it from.</p> <p>As a minimum, perform continuous chest compressions until additional help is available. If giving ventilations, CPR ratio is 30 compressions to 2 ventilation attempts.</p> <p>DO NOT interrupt CPR [chest compressions] unless:</p> <ul style="list-style-type: none"> a healthcare professional tells you to stop, the casualty is definitely waking, or you become exhausted.
Rescue Breaths (Optional)	<p>(This is not a mandatory component of Basic CPR/AED training, but may be taught to basic CPR providers who are willing to perform mouth-to-mouth and who have been previously trained. In areas where there are known delays in ambulance response times, we recommend the inclusion of rescue breaths).</p> <p>Give 2 rescue breaths</p> <p>Provided that it is safe to do so, and the rescuer is trained, willing and able to perform mouth-to-mouth ventilations, having established good quality chest compressions in the first instance, 2 breaths should be given, immediately followed by 30 compressions continuing in this ratio of 30 compressions to 2 breaths. Delays to chest compressions should always be minimised and no more than 10 seconds should be taken to give 2 ventilations.</p> <p>Discuss use of barrier devices and pocket masks. Assembling these devices takes too long for a single rescuer to achieve, so if unwilling/unable to give direct mouth-to-mouth, consider delaying use of barrier devices and perform continuous uninterrupted chest compressions until more rescuers arrive.</p> <p>Minimise interruptions to CPR</p> <p>Further emphasise need to minimise interruptions to chest compressions until help arrives or AED tells you to pause.</p> <p>Do not stop chest compressions whilst waiting for equipment (AED) to be brought and applied.</p>
<p>For paediatric resuscitation, modifiers to adult guidelines may be taught. These modifiers include: depth of chest compression appropriate to body size (third of the depth of the chest), importance of ventilating, if possible, and that applying the adult guidelines to a child is acceptable.</p>	
Turn on AED and follow prompts	<p>Discuss what an AED does and where they can be found. Demonstrate: how the AED works, where and how to apply the pads, what the voice prompts mean, the need to stand clear when advised and how to deliver the shock if advised. Emphasise need to continue CPR uninterrupted whilst preparing and applying AED. The most expedient way to do this is to ask a helper (trained or untrained) to give continuous chest compressions whilst the person who is most familiar with the AED applies the AED pads.</p> <p>Discuss actions if 'no shock advised'. If victim not breathing, carry on CPR. AED works on 2-minute cycles of CPR and re-assessment.</p> <p>No specific training is required to use an AED and it can do no harm as it will not shock a person who doesn't need it.</p>

9.3 Teaching specification – Community-based Adult CPR/AED Enhanced

Standard	Content to be taught
Danger	<p>Is it safe to approach? Remove or manage any immediate danger. Do not ask for a definitive list of 'dangerous circumstances', stick to the simple to understand principles. If it is safe to approach, proceed quickly, if there is manageable danger, manage the danger, and if it is too dangerous or complex to proceed, dial 999 in the first instance.</p>
Response	<p>Is victim responsive or unresponsive? Gently try to rouse the victim using 'shake and shout'. Try to stimulate a response by gently shaking the victim by the shoulders and asking loudly "Are you all right?". You do not need to teach to shout into each of the victim's ears in turn 'in case they are deaf in one ear'. Someone who is unresponsive is considered 'unconscious' and needs immediate further assessment and professional help. If the victim responds, leave them in the position you found them and try to ascertain whether they want/need help and summon accordingly. Re-assess the victim frequently.</p>
Alert others	<p>Alert others to your situation to expedite a response (this does not have to be done at a specific point). Shout for help and alert other citizens or colleagues to the emergency. If on your own, do not phone 999 until you know whether the victim is breathing or not, but if there are multiple bystanders, when appropriate, they can call 999 (see below) and get a defibrillator to your aid, the sooner the better. Be aware that some rural areas may have procedures for alerting local volunteers and this should be discussed in the context of summoning additional help whilst ensuring that the 999 call is made without delay.</p>
Airway	<p>Use head tilt and chin lift to manually open airway. Place a hand on the victim's forehead and then lift the bony part of the point of the chin. When you know there is neck trauma, you may assess for breathing first, but if breathing is absent, an airway opening manoeuvre is required and takes priority over cervical spine control.</p>
Breathing	<p>Look, listen and feel for normal breathing for no more than 10 seconds. Maintain head tilt and chin lift and: Look at the victim's chest to ascertain whether they are breathing normally. Look for regular rise and fall of the chest associated with 'normal breathing'. Listen for noises of breathing near to the victim's airway. Feel for expired air with your cheek next to the victim's mouth. The 'feel' does not refer to placing a hand on the chest as this necessitates removal of a hand that is keeping the airway open.</p> <p>Discuss gasping or agonal breathing and apparent seizures and that these should not be confused with 'normal breathing'. Wherever possible, learners should be shown a video of agonal gasps to aid recognition (widely available on the internet). Assessment of breathing should take long enough to make an accurate assessment but should not delay commencement of CPR. Assessment should take no more than 10 seconds.</p> <p>If breathing normally: Place them in the recovery position. Summon additional help. Dial 999 if necessary.</p> <p>If NOT breathing normally: Dial 999, start CPR.</p>

Standard	Content to be taught
Dial 999	<p>Dial 999, send someone to find and bring an AED. Cover activation of local emergency team, first responders, the National Defibrillator Network (NDN), GoodSAM, AEDs or national emergency services. Information required: Location and victim not breathing, starting CPR. Where possible this should be done without delay in starting chest compressions. If alone, where possible, use mobile phone on speakerphone, when there are others present ensure they dial 999 and confirm to you that they have done so whilst you perform chest compressions.</p> <p>Getting an AED is the next practical priority once CPR has been started.</p>
Circulation/CPR	<p>Start chest compressions. Ensure correct hand position (middle of lower half of sternum). Do not teach 'measuring techniques' just identify the centre of the chest. Do this with good practical demonstration.</p> <p>Compression depth 5-6cm. This is difficult to teach and assess without a manikin that gives feedback. Emphasise that quality of chest compressions is directly related to survival.</p> <p>Compression rate 100-120 per minute. Ensure full recoil of chest between compressions. Spend as much time on compression as recoil, keep it smooth. Rescuer's arms should be straight at the elbow with shoulders vertically above the heels of the hands. The rescuer's weight should be through the heel of the hand directly onto the bony sternum. The best position for performing chest compressions is kneeling beside the victim. It does not matter which side you do it from.</p> <p>DO NOT interrupt CPR [chest compressions] unless:</p> <ul style="list-style-type: none"> • a healthcare professional tells you to stop, the casualty is definitely waking, or you become exhausted <p>Discuss rescuer fatigue and importance of maintaining quality of chest compressions and chest compression fraction. This is the percentage of time in which chest compressions are done by rescuers during a cardiac arrest. In a real-world cardiac arrest, CPR is often interrupted or delayed by things such as rescue breaths, pulse checks and heart rhythm analysis. Unnecessary interruptions to CPR (e.g. randomly checking for breathing when there are no obvious signs of life) reduces survival rates.</p> <p>If there is more than one rescuer, change the chest compression provider every two minutes ensuring that delays in chest compressions are minimal.</p> <p>If combining with ventilation, perform 30 compressions to every 2 ventilations. If unable, unwilling or unsure how to give artificial ventilations, just perform continuous chest compressions until additional help is available and ventilation established.</p>
Rescue breaths/ventilations	<p>Give 2 rescue breaths/ventilations. Having performed at least 30 chest compressions and provided that it is safe to do so, and the rescuer is trained, willing and able to perform mouth-to-mouth, 2 breaths should be given, immediately followed by 30 compressions. Continue delivering this ratio of 30 compressions to 2 ventilations. Delays to chest compressions should always be minimised and no more than 10 seconds should be taken to give 2 ventilations. Demonstrate and recommend correct use of barrier devices and pocket masks. Where appropriate and with more highly trained and skilled learners this may include correct use of bag-mask ventilation (2-person technique) with supplemental oxygen. Assembling these devices takes too long for a single rescuer to achieve, so if unwilling to give direct mouth-to-mouth, consider delaying use of additional ventilation devices until more rescuers arrive.</p> <p>Continue CPR until help and/or AED arrives.</p>

Standard	Content to be taught
	<p>For paediatric resuscitation, modifiers to adult guidelines may be taught. These modifiers include: depth of chest compression appropriate to body size (third of the depth of the chest), importance of ventilating, if possible, and that applying the adult guidelines to a child is acceptable.</p>
<p>Turn on AED and follow prompts</p>	<p>Further emphasise need to minimise interruptions to chest compressions until help arrives or AED tells you to pause.</p> <p>Do not stop chest compressions whilst waiting for equipment (AED) to be brought and applied. If alone and unless an AED is within easy reach, do not leave the victim in order to retrieve an AED as stopping chest compressions will reduce the chance of survival. Asking other people to find and bring the nearest AED is the best course of action and this process can be informed by the 999 call handler who will have access to the National Defibrillator Network database.</p> <p>Cover types of AED and ways of accessing them. Public-access defibrillators, locally available resources (e.g. appointed first aiders, common AED locations – supermarkets, gyms, transport hubs etc.), role of ambulance control/despatcher and ‘AED Location Apps’ as well as initiatives such as ‘GoodSAM’.</p> <p>Locate ‘ON’ button and push firmly. Follow voice prompts. Listen carefully and minimise interruptions to CPR whilst attaching AED pads. (The most expedient way to do this is to ask a helper (trained or untrained) to give continuous chest compressions while the person who is most familiar with the AED applies the AED pads).</p> <p>Chest needs to be bare, dry and relatively hair free. Shave the chest only if the hair is excessive, and even then, spend as little time as possible on this. Do not delay defibrillation if a razor is not immediately available.</p> <p>Pads should be applied one at a time immediately after removing backing from self-adhesive covering.</p> <p>Position pads below right clavicle and in the left axilla.</p> <p>Stop CPR when AED tells you to, to allow it to analyse heart rhythm.</p> <p>If shock advised, deliver shock without delay ensuring other rescuers are not touching the victim, then restart CPR.</p> <p>If no shock advised, resume CPR immediately unless the victim is definitely waking up, moving, opening eyes AND breathing normally.</p> <p>Continue to follow prompts, advise that the AED works on 2-minute cycles of CPR and analysis.</p> <p>Discuss how to communicate with the EMS.</p> <p>Discuss paediatric mode and modifiers.</p>

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