# Management of respiratory and cardiac arrest in adults and children

[To be gained during the first 6 months of training]

For those who have not completed an ALS/APLS/EPLS course successfully, simulation may be used to assist in the teaching and assessment of these competencies

Learning outcomes:

To have gained a thorough understanding of the pathophysiology of respiratory and cardiac arrest and the skills required to resuscitate patients
Understand the ethics associated with resuscitation

Core clinical learning outcome:

Be able to resuscitate a patient in accordance with the latest Resuscitation Council (UK) guidelines. [Any trainee who has successfully completed a RC(UK) ALS course in the previous year, or who is an ALS Instructor/Instructor candidate, may be assumed to have achieved this outcome]

NB: All competencies annotated with the letter 'E' can be examined in any of the components of the Primary examination identified in the FRCA examination blueprint on page B-99 or in the Final examination identified in the Final FRCA blueprint on page C72 of Annex C.

| Knowledge | | | |
|---|---|---|---|
| Competence | Description | Assessment Methods | GMP |
| RC_BK_01 | Recalls/lists the causes of a respiratory arrest, including but not limited to:<br>Drugs, toxins<br>Trauma<br>Pulmonary infection<br>Neurological disorders<br>Muscular disorders | C,E,S | 1 |

| Knowledge | | | |
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| Competence | Description | Assessment Methods | GMP |
| RC_BK_02 | Identifies the causes of a cardiac arrest, including but not limited to:<br>Ischaemic heart disease<br>Valvular heart disease<br>Drugs<br>Hereditary cardiac disease<br>Cardiac conduction abnormalities<br>Electrolyte abnormalities<br>Electrocution<br>Trauma<br>Thromboembolism | C,E,S | 1 |
| RC_BK_03 | Demonstrates an understanding of the basic principles of the ECG, and the ability to recognise arrhythmias including but not exclusively:<br>Ventricular fibrillation<br>Ventricular tachycardia<br>Asystole<br>Rhythms associated with pulseless electrical activity [PEA] | C,E,S | 1 |
| RC_BK_04 | Discusses the mode of action of drugs used in the management of respiratory and cardiac arrest in adults and children, including but not limited to:<br>Adrenaline<br>Atropine<br>Amiodarone<br>Lidocaine<br>Magnesium sulphate<br>Naloxone | C,E,S | 1 |
| RC_BK_05 | Identifies the doses of drugs, routes given [including potential difficulty with gaining intravenous access and how this is managed] and frequency, during resuscitation from a respiratory or cardiac arrest | C,E,S | 1 |
| RC_BK_06 | Explains the physiology underpinning expired air ventilation and external chest compressions | C,E,S | 1 |
| RC_BK_07 | Explains the need for supplementary oxygen during resuscitation from a respiratory or cardiac arrest in adults and children | C,E,S | 1 |
| RC_BK_08 | Lists advantages and disadvantages of different techniques for airway management during the resuscitation of adults and | A,C,E,S | 1 |

| Knowledge | | | |
|---|---|---|---|
| Competence | Description | Assessment Methods | GMP |
| | children, including but not limited to:<br>Oro and nasopharyngeal airways<br>Laryngeal Mask type supraglottic airways including but not limited to: LMA, Proseal, LMA supreme, iGel<br>Tracheal intubation | | |
| RC_BK_09 | Explains the reasons for avoiding hyperventilation during resuscitation | C,E | 1 |
| RC_BK_10 | Compares the methods by which ventilation can be maintained in a patient suffering a respiratory or cardiac arrest, using:<br>Mouth to mask Self-<br>inflating bag<br>Anaesthetic circuit<br>Mechanical ventilator | A,C,E,S | 1 |
| RC_BK_11 | Recalls/explains the mechanism of defibrillation and the factors influencing the success of defibrillation | C,E,S | 1 |
| RC_BK_12 | Identifies the energies used to defibrillate a patient | C,E,S | 1 |
| RC_BK_13 | Recalls/discusses the principles of safely and effectively delivering a shock using both manual and automated defibrillator | C,E,S | 1,2 |
| RC_BK_14 | Explains the need for continuous chest compressions during resuscitation from cardiac arrest once the trachea is intubated | C,E,S | 1 |
| RC_BK_15 | Explains the need for minimising interruptions to chest compressions | C,E,S | 1 |
| RC_BK_16 | Recalls/discusses the reversible causes of cardiac arrest and their treatment, including but not limited to:<br>Hypoxia<br>Hypotension<br>Electrolyte and metabolic disorders<br>Hypothermia<br>Tension pneumothorax<br>Cardiac tamponade<br>Drugs and toxins<br>Coronary or pulmonary thrombosis | C,E,S | 1 |
| RC_BK_17 | Recalls/describes the Adult and Paediatric Advanced Life Support algorithms | C,E,S | 1 |
| RC_BK_18 | Discusses the specific actions required when managing a cardiac arrest due to:<br>Poisoning<br>Electrolyte disorders<br>Hypo/hyperthermia | C,E,S | 1 |

| Knowledge | | | |
|---|---|---|---|
| Competence | Description | Assessment Methods | GMP |
| | Drowning<br>Anaphylaxis<br>Asthma<br>Trauma<br>Pregnancy [including peri-mortem Caesarean Section]<br>Electrocution | | |
| RC_BK_19 | Identifies the signs indicating return of a spontaneous circulation | A,C,E,S | 1 |
| RC_BK_20 | Recalls/lists the investigations needed after recovery from a respiratory or cardiac arrest and describes the potential difficulties with obtaining arterial blood samples and how this may be overcome in these patients | C,E,S | 1 |
| RC_BK_21 | Discusses the principles of care required immediately after successful resuscitation from a respiratory or cardiac arrest | C,E,S | 1,3,4 |
| RC_BK_22 | Discusses the importance of respecting the wishes of patients regarding end of life decisions | C,E,S | 1,3,4 |
| RC_BK_23 | Outlines who might benefit from resuscitation attempts and the importance of knowing/accepting when to stop | C,E,S | 1,3,4 |
| RC_BK_24 | Discusses the importance of respecting the wishes of relatives to be present during a resuscitation attempt | C,E,S | 3,4 |
| RC_BK_25 | Describes the value of debriefing meetings and the importance of active participation | C,S | 3,4 |

| Skills | | | |
|---|---|---|---|
| Competence | Description | Assessment Methods | GMP |
| RC_BS_01 | Uses an ABCDE approach to diagnose and commence the management of respiratory and cardiac arrest in adults and children | D,S | 1 |
| RC_BS_02 | Demonstrates correct interpretation of the signs of respiratory and cardiac arrest | S | 1,2 |
| RC_BS_03 | Maintains a clear airway using basic techniques with or without simple adjuncts:<br>Head tilt<br>Chin lift<br>Jaw thrust<br>Oro- and nasopharyngeal airways | D,S | 1,2 |
| RC_BS_04 | Demonstrates correct use of advanced airway techniques including:<br>Supraglottic devices, including but not limited to LMA, Proseal, LMA supreme, iGel | D,S | 1,2 |

| Skills | | | |
|---|---|---|---|
| Competence | Description | Assessment Methods | GMP |
| | Tracheal intubation | | |
| RC_BS_05 | Maintain ventilation using:<br>Expired air via a pocket mask<br>Self-inflating bag via facemask, or advanced airway<br>Mechanical ventilator | D, S | 1,2 |
| RC_BS_06 | Performs external cardiac compression | D,S | 1,2 |
| RC_BS_07 | Monitor cardiac rhythm using defibrillator pads, paddles or ECG lead | D,S | 1,2 |
| RC_BS_08 | Uses a manual or automated defibrillator to safely defibrillate a patient | D, S | 1,2 |
| RC_BS_09 | Turn a patient into the recovery position | D | 1,2 |
| RC_BS_10 | Prepare a patient for transfer to a higher level of care | A,M | 1,2 |
| RC_BS_11 | Maintains accurate records of all resuscitation events | A,M | 1,2 |