R1 Cardiorespiratory, respiratory and peri-arrest

Assessment of these competencies is via Mini-CEX, with final summative Mini-CEX to be completed by the end of the programme. If the trainee has evidence of ALS certification valid up to the time of end of programme review this can be used as evidence of completion of some of the relevant knowledge, skills and behaviours within this module.

In addition, key DOPs should be carried out as part of this module including Basic airway management (PP5) and CPR (PP6) unless holding valid BLS training certification within the last 12 months.

Potential situations in which these competencies could be assessed include the following:

- Any adult presentation where resuscitation is instigated, and resus team or team support is required for management
- Patient in respiratory distress requiring airway adjuncts and or additional ventilatory support requiring resus, anaesthetic or team-based support
- Patient presenting with deteriorating cardiac or respiratory presentation requiring escalation of support and management by team e.g. post MI, pericardial effusion with tamponade, asthmatic requiring ventilation, major embolic event, acute LVF

Core competencies to achieve with adult patients, are EPA level 3 (Indirect active-partial supervision by senior clinician, no prompting or help provided, direct line of vision or supervisor immediately available). Paediatric competencies are to be assessed to EPA level 2 (Direct active – full supervision by senior clinician, with prompting/ verbal and actual guidance and help throughout)

Knowledge/ Skill/ Behaviour	**Detail of competency**
Knowledge	Demonstrates knowledge of the causes of respiratory and cardiac arrest including special situations (such as drowning, electrical incident) and reversible causes in both adults and children e.g. hypothermia, trauma, overdose ("4 H's / T's").
	Recalls/explains the mechanism of defibrillation, energy used to defibrillate and the factors influencing the success of defibrillation
	Demonstrates familiarity with the ALS and APLS algorithms and can outline indications, mode of action and safe use of relevant drugs in the management of respiratory and cardiac arrest in adults and children

Knowledge/ Skill/ Behaviour	Detail of competency
	Is able to identify and discuss the use of resuscitation equipment, including basic and advanced airway adjuncts, monitoring, near-patient testing, defibrillators and automated compression devices
	Demonstrates knowledge of the indications for central venous catheterisation and relevant aftercare
	Demonstrates knowledge of post-arrest care and appropriate critical care involvement where necessary
Skills- History	Demonstrates the ability to obtain a targeted history from patient or collateral history from friends, family, paramedics- inc. relevant past medical history and comorbidities, medications and quality of life factors
	Focuses on relevant aspects of history and maintains focus despite multiple and often conflicting agendas
Skills – Examination	Can rapidly assess the patient systematically, following the ABCDE approach, correctly interpret signs and be able to safely initiate resuscitation in respiratory and cardiac arrest in adults and children
	Demonstrates an ability to perform an effective evaluation of respiratory function in the critically ill patient, including assessment of airway – particularly obstructive problems
Skills- investigation and treatment	Is able to obtain and interpret an ABG and recognise electrolyte and acid-base balance disturbances in the context of a patient with peri-arrest/cardiac arrest [see also – PP2)
	Is able to obtain and interpret ECG and recognise arrhythmias, asystole, rhythms associated with pulseless electrical activity [PEA], etc. in the context of peri-arrest/cardiac arrest [see also – PP3)
	Is able to maintain a clear airway using basic techniques with or without simple adjuncts, deliver oxygen and maintain ventilation using: • Expired air via a pocket mask • Self-inflating bag via facemask • Advanced airway techniques – such as LMA or endotracheal tube
	Performs basic life support competently as defined by The International Liaison Committee on Resuscitation (ILCOR): effective chest compressions with minimum interruption, airway manoeuvres and coordinated bag and mask ventilation
	Can deliver safe DC shocks when indicated (using an automated or manual defibrillator), including cardioversion, according to ALS protocols
	Understands the process of, and delivery of, external pacing and when it would be indicated

Knowledge/ Skill/ Behaviour	Detail of competency
	Is able to order and interpret and act on further investigations appropriately, such as blood tests, chest x-ray, transthoracic ultrasound
Skills- Clinical decision making, judgement and planning ***[in addition to CC1]***	Can elicit signs of patients who are peri-arrest and intervene in critical illness promptly to prevent respiratory and cardiac arrest (e.g. peri-arrest arrhythmias, hypoxia)
	Can identify those patients with respiratory compromise who may require non-invasive (CPAP/BiPAP) or invasive respiratory support and escalate appropriately
Behaviour- Communication & professionalism ***[In addition to CC7& CC8]***	Demonstrates leadership, team-working and professionalism when working within a team managing a resuscitation
	Can utilise team strengths, recognising weaknesses and delegating tasks appropriately
	Maintains situational awareness, asking for vital signs and monitoring according to ALS algorithms and ensuring timely intervention
	Involves other members of team in important resuscitation decision-making such as when to cease CPR
	Involves family members in important resuscitation decision-making if they wish to be present, and ensuring information is provided in a sensitive and clear manner
Paediatric specific competencies*	Knows the infective, allergic and obstructive causes of airway obstruction in children including epiglottitis and post-tonsillectomy bleeding
	Is able to recognise signs of airway obstruction and initiate basic life support, including use of airway adjuncts and oxygen delivery
	Must be familiar with the paediatric equipment and guidelines in the resuscitation room

*Valid APLS certification can be used as evidence of paediatric specific competencies.

Additional optional competencies- EPA 1 or 2

Knowledge/ Skill/ Behaviour	Detail of competency
Skills- investigation and treatment	Familiar with use of transthoracic US to look for IVC compression and cardiac tamponade or right-side dilatation
	Insertion intraosseous device for drug / fluid administration
	Insertion of an arterial line for invasive BP monitoring
	Insertion of a central line for access / vasoactive drug administration

	Initiation of general anaesthesia / paralysis, endotracheal intubation (RSI) and formal invasive ventilation for post-arrest critical care
	Initiation of non-invasive ventilation in appropriate patients