Resuscitation Council (UK) basic and advanced life support guidelines 2015

The Resuscitation Council (UK) (2015) Guidelines for basic and advanced life support for adults, children and the newborn were updated in October. Using a process of scientific review accredited by the National Institute for Health and Care Excellence, these reflect the recommendations of the International Liaison Committee on Resuscitation and replace the 2010 guidelines. Patient survival to hospital discharge for in-hospital cardiac arrest in the UK is currently 18% (Intensive Care National Audit and Research Centre, 2015). Given that National Cardiac Arrest Audit data demonstrate that several hospitals have survival rates twice this level, doing things better is the key message. The changes are otherwise subtle.

Advanced life support providers

In the event of witnessing and responding to an in-hospital cardiac arrest you should:

- Call for help and ensure that the hospital's cardiac arrest team is activated by the usual channels. Start cardiopulmonary resuscitation immediately, with an emphasis on high quality chest compressions with minimal interruptions
- Remember the 5-second rule: no advanced life support intervention (attempted defibrillation and tracheal intubation included) should exceed 5 seconds
- Follow the algorithm (*Figure 1*) which is available on a free iResus app available for both iPhones and Android phones
- Note that there are no changes in drug selection or doses
- Note also that management of peri-arrest arrhythmia remains essentially the same.

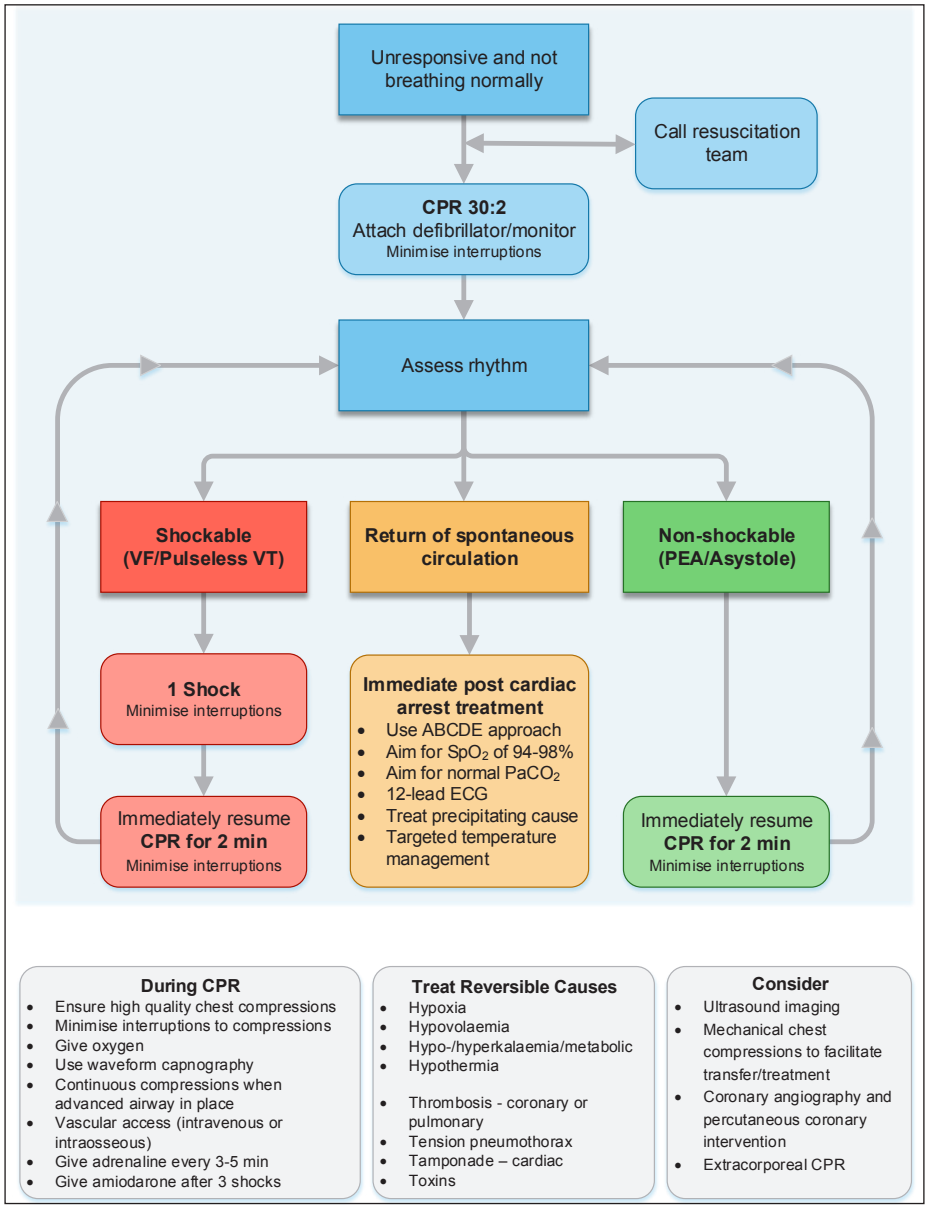
Table 1. Key changes in advanced life support

Less than 5-second rule for chest compression interruptions
Waveform capnography roles include confirmation of tracheal tube placement, monitoring the quality of cardiopulmonary resuscitation and identifying recovery of spontaneous circulation
Bag-valve-mask ventilation will suffice
Consider intraosseous access if peripheral cannulation is unsuccessful
Consider the role of mechanical chest compression devices in hypothermia and for those patients needing cardiac catheterization
Therapeutic hypothermia is no longer recommended

Resuscitation team leaders

Note the following additional detail if you are a hospital doctor designated to lead the management of a patient in cardiac arrest:

Figure 1. Algorithm for adult advanced life support. From Resuscitation Council (UK) (2015).



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- Enforce the 5-second rule – minimal interruption of chest compressions. That will include continuing chest compressions while charging the defibrillator and resuming these promptly post-shock, rather than checking for a pulse
- The three roles of waveform capnography:
  1. Confirmation of tracheal tube placement (noting that it will not distinguish tracheal *vs* bronchial placement)
  2. Monitoring the quality of cardiopulmonary resuscitation
  3. Early indication of return of spontaneous circulation, thereby avoiding the potentially harmful dosing of adrenaline in patients with return of spontaneous circulation
- Airway management: the Resuscitation Council (UK) recognizes the lack of evidence of superiority of one intervention over another; quality bag-valve-mask ventilation is sufficient. A supraglottic airway (for example an i-gel or laryngeal mask airway) or tracheal tube can be placed when the necessary skilled physician arrives, remembering that the less than 5-second rule in chest compression interruption still applies
- No intravenous access? Then consider the intraosseous route
- The efficacy of both adrenaline and amiodarone in achieving increased functional survival (when compared with placebo) is unproven and the results of ongoing trials are eagerly awaited
- Devices for mechanical chest compression are not routinely recommended, but they are a pragmatic choice in those patients who are envisaged to need prolonged cardiopulmonary resuscitation (e.g. those with hypothermia) and for those selected for emergency cardiac catheterization and possible percutaneous coronary intervention
- For those patients in whom return of spontaneous circulation is achieved, therapeutic hypothermia is no longer recommended; nevertheless the patient's temperature should not exceed 36°C.

Wider issues

Thinking more widely, the Resuscitation Council (UK) emphasizes the need to identify those patients who do not wish to be resuscitated, and for whom cardiac arrest is an anticipated terminal event. This echoes their joint statement with the British Medical Association and Royal College of Nursing (2014) and the recommendations from the National Confidential Enquiry into Patient Outcome and Death (2012) publication *Time to intervene*. The rate of in-hospital cardiac arrest is 1.6 per 1000 patients nationally. Focussing on improving communication and recording cardiopulmonary resuscitation decisions in the author's own hospital (Lloyd, 2015) has helped achieve a cardiac arrest incidence of only 1 per 1000 patients and a survival to hospital discharge twice the national average (37%) as per National Cardiac Arrest Audit data.

Regarding basic life support in children, the duration of delivering a breath is now 1 second, as per adult practice. In chest compressions, the lower sternum should be depressed by at least one third of the anterior-posterior diameter of the chest. There are updated sections for paediatric advanced life support and neonatal resuscitation.

Finally, the Resuscitation Council recommend that all school children should be taught how to perform cardiopulmonary resuscitation and should be made aware of how to use an automated external defibrillator. Those with school-aged children are encouraged to take up this issue with headteachers, and highlight the fantastic educational support available to them from the British Heart Foundation (2015). BJHM

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Figure 1 *is reproduced with the kind permission of the Resuscitation Council (UK).*

British Heart Foundation (2015) CPR kits for schools. https://www.bhf.org.uk/heart-health/nation-of-lifesavers/call-push-rescue/schools (accessed 25 November 2015)
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KEY POINTS

- Chest compressions should be interrupted for no more than 5 seconds (including attempts at defibrillation and airway device insertion).
- The new Resuscitation Council (UK) guidelines have no drug changes or doses.
- There are also no significant changes to the management of peri-arrest arrhythmias.
- Ensure that the views of patients who appropriately do not wish to be resuscitated are documented in advance.

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