

Resuscitation Council UK Statement on COVID-19 in relation to CPR and resuscitation in acute hospital settings

This statement is for healthcare professionals who are performing CPR in an acute hospital setting.

1. Purpose

- 1.1. Resuscitation Council UK has received several enquiries concerning the risks of COVID-19 during cardiopulmonary resuscitation (CPR).
- 1.2. This statement provides specific guidance for healthcare workers (HCWs) on CPR in healthcare settings for patients with suspected or confirmed COVID-19.
- 1.3. This supplements guidance available from the Department of Health and Social Care (DHSC) and Public Health England (PHE) (<https://www.gov.uk/government/collections/wuhan-novel-coronavirus>) as well as Public Health Wales (<https://phw.nhs.wales/news/public-health-wales-statement-on-novel-coronavirus-outbreak/>), Health Protection Scotland (HPS) (<https://www.hps.scot.nhs.uk/a-to-z-of-topics/covid-19/>) and Department of Health Northern Ireland (DHNI) (<https://www.health-ni.gov.uk/coronavirus/>), and may change based on increasing experience in the care of patients with COVID-19, as well as the effect of the outbreak on health services. It is therefore important to always check the latest guidance on the DHSC/PHE/PHW/HPS/DHNI websites.
- 1.4. COVID-19 is thought to spread in a way similar to seasonal influenza; from person-to-person through close contact and droplets. Standard principles of infection control and droplet precautions are the main control strategies and should be followed rigorously. Aerosol transmission can also occur. **Attention to hand hygiene and containment of respiratory secretions produced by coughing and sneezing are the cornerstones of effective infection control.**
- 1.5. All HCWs managing those with suspected or confirmed COVID-19 must follow local and national guidance for infection control and the use of PPE.
- 1.6. During CPR, there is always the potential for rescuers to be exposed to bodily fluids, and for procedures (e.g. tracheal intubation or ventilation) to generate an infectious aerosol. Individual healthcare organisations should carry out local risk assessments, based on the latest guidance from the DHSC/PHE regarding PPE for HCWs to develop local guidance.

1.7. Resuscitation team members must be trained to put on/remove PPE safely (including respirator-fit testing) and to avoid self-contamination. Click [here](#) for further advice on PPE from the DHSC.

2. Guidance on CPR in patients with a COVID-19 like illness or a confirmed case of COVID-19 in acute hospital settings.

2.1. Patients with a COVID-19 like illness, who are at risk of acute deterioration or cardiac arrest, should be identified early. Appropriate steps to prevent cardiac arrest and avoid unprotected CPR should be taken. Use of physiological track-and-trigger systems (e.g. NEWS2) will enable early detection of acutely ill patients. Patients for whom a 'do not attempt cardiopulmonary resuscitation' (DNACPR) and/or other similar decision is appropriate should also be identified early.

2.2. The locally/nationally agreed minimum level of PPE must be used to assess a patient, start chest compressions and establish monitoring of the cardiac arrest rhythm. For more information, please view our infographic on the resuscitation of COVID-19 patients in hospital: https://www.resus.org.uk/_resources/assets/attachment/full/0/36100.pdf

2.3. The need to don PPE may delay CPR in patients with COVID-19. Review of the processes involved (including the availability of Aerosol Generating Procedure (AGP) PPE kits on resuscitation trolleys), along with training and practice, will minimise these delays. Staff safety is paramount. In a cardiac arrest of presumed hypoxic aetiology (including paediatric events), early ventilation with oxygen is usually advised. Any airway intervention performed without the correct PPE protection will subject the rescuer to a significant risk of infection. Consequently, we recommend even in presumed hypoxic arrest starting with chest compressions.

2.4. Recognise cardiac arrest. Look for the absence of signs of life and normal breathing. Feel for a carotid pulse if trained to do so. Do not listen or feel for breathing by placing your ear and cheek close to the patient's mouth. When calling 2222, state the risk of COVID-19.

2.5. If a defibrillator is readily available defibrillate shockable rhythms rapidly prior to starting chest compressions. The early restoration of circulation may prevent the need for further resuscitation measures. Local guidance must be followed about equipment entering the area.

- 2.6. Full Aerosol Generating Procedure (AGP) Personal Protective Equipment (PPE) must be worn by all members of the resuscitation/emergency team before entering the room. Sets of AGP PPE must be readily available where resuscitation equipment is being locally stored. No chest compressions or airway procedures such as those detailed below should be undertaken without full AGP PPE. Once suitably clothed, start compression-only CPR and monitor the patient's cardiac arrest rhythm as soon as possible. Do not do mouth-to-mouth ventilation or use a pocket mask. If the patient is already receiving supplemental oxygen therapy using a face mask, leave the mask on the patient's face during chest compressions as this may limit aerosol spread. If not in situ, but one is readily available, put a simple oxygen mask on the patient's face. Restrict the number of staff in the room (if a single room). Allocate a gatekeeper to do this.
- 2.7. Airway interventions (e.g. supraglottic airway (SGA) insertion or tracheal intubation) must be carried out by experienced individuals. Individuals should use only the airway skills (e.g. bag-mask ventilation) for which they have received training. For many HCWs this will mean two-person bag-mask techniques with the use of an oropharyngeal airway. Tracheal intubation or SGA insertion must only be attempted by individuals who are experienced and competent in this procedure.
- 2.8. Identify and treat any reversible causes (e.g. severe hypoxaemia) before considering stopping CPR. Discussion should be maintained throughout the resuscitation event and early planning of the post resuscitation phase undertaken. Contact senior help and gain advice from critical care partners as part of the planning.
- 2.9. Dispose of, or clean, all equipment used during CPR following the manufacturer's recommendations and local guidelines. Any work surfaces used for airway/resuscitation equipment will also need to be cleaned according to local guidelines. Specifically, ensure equipment used in airway interventions (e.g. laryngoscopes, face masks) is not left lying on the patient's pillow, but is instead placed in a tray. Do not leave the Yankauer sucker placed under the patient's pillow; instead, put the contaminated end of the Yankauer inside a disposable glove.
- 2.10. Remove PPE safely to avoid self-contamination and dispose of clinical waste bags as per local guidelines. Hand hygiene has an important role in decreasing transmission. Thoroughly wash hands with soap and water; alternatively, alcohol hand rub is also effective.
- 2.11. Post resuscitation debrief is important and should be planned.

Paediatric advice

We are aware that paediatric cardiac arrest is unlikely to be caused by a cardiac problem and is more likely to be a respiratory one, making ventilations crucial to the child's chances of survival. However, for those not trained in paediatric resuscitation, the most important thing is to act quickly to ensure the child gets the treatment they need in the critical situation.

The Resuscitation Council UK Statement on COVID-19 in relation to CPR and resuscitation in healthcare settings advice for in-hospital cardiac arrest is relevant to all ages. Mouth to mouth ventilations should not be necessary as equipment is available for bag-mask ventilation/intubation and must be immediately available for any child/infant at risk of deterioration/cardiac arrest in the hospital setting.

4 March 2020

Updated 6 April 2020.

Reviewed August 2021; no changes made.