

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

This statement is for healthcare professionals who are performing CPR in a healthcare 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. 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
- 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-in-china/>), 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. The DHSC/PHE recommends the following personal protective equipment (PPE) for HCWs:

All healthcare workers carrying out direct patient care, with a patient with a flu-like illness or probable/confirmed COVID-19, would be advised to wear an FFP3 respirator, gloves with long tight-fitting cuffs, a single-use disposable fluid-resistant full-sleeve gown and eye protection (e.g. full-face visor / single-use goggles). If the patient is wearing a mask this would also further reduce any potential risk.

1.6. During CPR, there is always the potential for rescuers to be exposed to bodily fluids, and for procedures (e.g. chest compressions, tracheal intubation or ventilation) to generate an infectious aerosol. Individual healthcare organisations should carry out local risk assessments, based on the latest guidance from RCUK/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 healthcare 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 minimum PPE requirements to assess a patient, start chest compressions and establish monitoring of the cardiac arrest rhythm are an FFP3 facemask, eye protection, plastic apron, and gloves. 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 by looking for the absence of signs of life and the absence of 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. If there are any doubts about the diagnosis of cardiac arrest, the default position is to start chest compressions until help arrives.

- 2.5. Start compression-only CPR and monitor the patient's cardiac arrest rhythm as soon as possible. Avoid mouth-to-mouth ventilation and the use of 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.
- 2.6. Local staff (already wearing full AGP PPE) may be able to give support whilst chest compressions are ongoing before the arrival of the resuscitation team. Other helpers and members of the resuscitation team must apply FFP3 respirators, gowns, gloves and eye protection, before taking over from the first responders to the cardiac arrest.
- 2.7. Defibrillate shockable rhythms rapidly - the early restoration of circulation may prevent the need for airway and ventilatory support.
- 2.8. Airway interventions must be carried out by experienced individuals (e.g. supraglottic airway (SGA) insertion or tracheal intubation). Individuals should only use the airway skills (e.g. bag-mask ventilation) for which they have received training. For many HCWs this will mean a two-person bag-mask technique 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.
- 2.9. Patients may have a cardiac arrest that is caused directly by COVID-19 or because of a co-existing illness. It is important to attempt to identify and treat any reversible causes (e.g. severe hypoxaemia) before considering stopping CPR.
- 2.10. 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.
- 2.11. 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.

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.

20 March 2020