



- During CPR**
- Ensure high-quality CPR: rate, depth, recoil
 - Plan actions before interrupting CPR
 - Give oxygen
 - Vascular access (intravenous, intraosseous)
 - Give adrenaline every 3-5 min
 - Consider advanced airway and capnography
 - Continuous chest compressions when advanced airway in place
 - Correct reversible causes
 - Consider amiodarone after 3 and 5 shocks

- Recommended PPE**
- Level 2 PPE
- Disposable gloves
 - Disposable apron
 - Fluid resistant surgical mask
 - Disposable eye protection
- Level 3 AGP (aerosol generating procedures) PPE
- Disposable gloves
 - Disposable gown
 - Filtering face piece (FFP3) respirator
 - Disposable eye protection

- Reversible Causes**
- Hypoxia
 - Hypovolaemia
 - Hyper/hypokalaemia, metabolic
 - Hypothermia
 - Thrombosis (coronary or pulmonary)
 - Tension pneumothorax
 - Tamponade (cardiac)
 - Toxic/therapeutic disturbances

Paediatric cardiac arrest management for positive or suspected COVID

(see overleaf for algorithm)

1. **Stop! Safe approach! Is the patient for CPR? Don PPE!**
2. **Bag-valve-mask (BVM) and chest compressions are aerosol generating procedures (AGPs) and require full PPE (FFP3, visor, gown, and gloves). Defibrillation is not an AGP**
3. **To minimise aerosol, use a Heat Moisture Exchanger (HME) between the bag and the mask and maintain a two-handed mask grip**
2. Check for response, call for help (e.g. pull crash alarm)
3. **Do not put your face near the patients face.** Confirm hypoventilation, No or abnormal breathing
4. **Ensure anyone else there not in full PPE leaves before starting BVM.** If in full AGP PPE, begin BVM ventilation. If a second person in full PPE is available use a two-handed mask grip with the second person squeezing the bag
5. After 5 ventilations assess for response, signs of life, and if able to, feel for a pulse.
6. If no response, signs of life, no or a slow pulse (below 60), begin chest compressions at a ratio of 15:2. If only two staff in AGP PPE present the person doing chest compressions should squeeze the bag whilst the first person maintains a two-handed mask
- NOTE:** Supraglottic Airway (SGA) or Tracheal Intubation should only be carried out by experienced individuals
8. Staff outside the hot area put out a paediatric cardiac arrest call (2222) (**say COVID paediatric cardiac Arrest**) and bring the cardiac arrest trolley. Cardiac arrest trolley remains in the cold area. Pass the defibrillator and any required equipment into the hot area
11. **Appoint a gatekeeper to prevent staff not in full PPE from entering**

Guidance on the resuscitation of paediatric patients with suspected or confirmed COVID-19

This document is intended to advise those with a duty of care to children on the safest way to provide lifesaving treatment to critically ill patients with a suspected COVID-19 infection, whilst reducing risk to those caring for them. It is relevant for the management of both COVID-19 respiratory failure and cardiac arrest from other causes in children who may have had COVID-19 exposure.

Although child deaths from COVID-19 are relatively few in comparison with adult patients, the early recognition of serious illness and instigation of supportive therapies is key in reducing mortality and morbidity for all ages. Early recognition will also facilitate the preparation of personal protective equipment (PPE) for staff and will require high sensitivity testing of all hospitalised children at risk of acute physiological deterioration.

The fundamental principles are:

- **Rapid identification of patients who may be infected with COVID-19**
- **Immediate recognition of children at risk of deterioration**
- **Identification of children in whom CPR is inappropriate**

In children at risk of COVID-19 and deterioration it is essential that PPE is available and prepared. It is not acceptable for staff to have to choose between resuscitating a child and protecting themselves.

For children in whom resuscitation is not appropriate, it is important that sensitive and caring symptom control is initiated and maintained.

As the situation is fast moving, we will continue to update this guidance as and when more information becomes available.



Resuscitation of paediatric COVID-19 patients in hospital

1

Full Aerosol Generating Procedure (AGP) Personal Protective Equipment (PPE) must be worn by members of the resuscitation/emergency team attending the patient in cardiopulmonary arrest. Sets of AGP PPE must be readily available on the resuscitation trolley (or where resuscitation equipment is being stored) or by the cubicle if the patient is isolated. No airway procedures, ventilation, chest compressions or defibrillation should be undertaken without full AGP PPE.

2

When calling 2222, state the risk of COVID-19 and restrict the number of staff in the resuscitation room. Allocate a gatekeeper to do this.

3

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 airway¹. Tracheal intubation or SGA insertion must only be attempted by individuals who are experienced and competent in this procedure.

4

Defibrillate shockable rhythms rapidly - the early restoration of circulation may prevent the need for airway and ventilatory support. Local guidance must be followed about equipment entering the area.

5

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.

6

Dispose of, or clean, all equipment used during CPR following local infection control guidelines.

7

Post resuscitation debrief is important and should be planned taking local infection control precautions into account.

References

[1] COVID-19 Airway Management Principles: <https://icmanaesthesiacovid-19.org/covid-19-airway-management-principles>