

CARDIOPULMONARY RESUSCITATION OF ADULTS WITH COVID-19 IN HEALTHCARE SETTINGS

Key points

- This guidance applies to **adults** with **confirmed COVID-19**.
- The guidance for **first responders** is for healthcare workers trained in Basic Life Support, in healthcare settings including hospitals, primary care clinics, and aged care facilities.
- The guidance for **ongoing resuscitation** is for healthcare workers trained in Advanced Life Support.
- **Maximise staff safety** and **commence chest compressions as soon as possible**, except where resuscitation is likely to be futile or there is a documented DNACPR (Do Not Attempt Cardiopulmonary Resuscitation) for the patient.
- Undertake resuscitation procedures according to the **level of PPE** worn by responders.
- For CPR in settings such as quarantine hotels or a person's own home, refer to **BASIC LIFE SUPPORT FOR ADULTS IN THE COMMUNITY DURING THE COVID-19 PANDEMIC** flowchart.

HEALTH SERVICE PLANNING, PPE & INDIVIDUAL PATIENT CONSIDERATIONS

Refer to **PREPAREDNESS FOR CARDIOPULMONARY RESUSCITATION DURING THE COVID-19 PANDEMIC** flowchart

First Responders

PPE RECOMMENDATIONS PREFERRED

Contact, droplet & airborne

gown, particle filter respirator, eye protection, gloves
visor, head & neck protection as per local guidelines

MINIMUM

Contact & droplet

gown, surgical mask, eye protection, gloves
visor, head & neck protection as per local guidelines

RECOMMENDED ACTIONS

- Commence resuscitation **where the patient is found** (e.g. in a waiting room, or corridor, or en route to a negative pressure room).
- Look, but do **not** listen or feel for breathing.
- If a defibrillator is readily available, do not delay **early defibrillation of shockable rhythms**.
- If not responding and not breathing normally, start **chest compressions** (continuous until ready for additional resuscitation techniques – see below)
- If healthcare providers are concerned about aerosol generation with compression-only CPR, first responders could **consider covering the patient's mouth and nose with an oxygen mask** with flow of up to 6 L/min, and covering this (e.g. with a surgical mask) as additional protection against droplet/spray contamination until additional responders arrive to deliver ongoing resuscitation.
- If a view of the mouth and nose is obscured, regularly **check the patient's airway for vomit/ secretions**.

Rationale

- An oxygen mask provides passive oxygen delivery while compression-only CPR is ongoing. The use of an oxygen mask in this way is not considered aerosol-generating.
- Defibrillation or compression-only CPR are thought to be low-risk procedures with regard to disease transmission.
- Defibrillation is considered to be a lower risk procedure than compression-only CPR because it can be delivered at a distance and any aerosol generation will be short-lived.
- Theoretical benefits of covering the face/mask include a potential reduction in risk of virus transmission and may increase the likelihood that a responder will start compressions. However, by possibly restricting airflow, there is a risk that covering the face or mask may decrease the effectiveness of compression-only CPR.

Ongoing resuscitation

PPE RECOMMENDATIONS REQUIRED

Contact, droplet & airborne

gown, particle filter respirator, eye protection, gloves
visor, head & neck protection as per local guidelines

Any first responders who are not wearing contact, droplet & airborne PPE must leave the area before any additional resuscitation techniques (i.e. ventilation, airway interventions) commence.

RECOMMENDED ACTIONS

Optimise the setting for resuscitation:

- Ongoing resuscitation should occur in the highest level of isolation immediately available.
- A negative pressure room is the most appropriate location for AGPs but may not always be available.
- Resuscitation should not be withheld if a single room is not immediately available.

If appropriate, consider early use of airway interventions:

- Pause compressions before placing an advanced airway.
- A tracheal tube is more reliable at preventing aerosol generation than a supraglottic airway or bag-mask ventilation.
- In the lead up to tracheal intubation, consider the following to reduce the risk of virus transmission:
 - Bag-mask ventilation is best performed with two rescuers where possible – one rescuer using two hands to hold the mask and ensure a tight mask seal, and the second rescuer alternating between doing compressions and squeezing the bag.
 - A supraglottic airway may provide a better airway seal than a face mask.
 - For ventilation with a bag-mask or supraglottic airway, pause chest compressions for ventilation using a 30:2 compression to ventilation ratio.
 - Prolonged bag-mask ventilation should be avoided.

Rationale

- **Ventilation is considered an AGP**, regardless of whether it is delivered through a supraglottic airway, endotracheal tube or face mask.
- Negative pressure rooms do not provide additional protection for people in the room, but do minimise the risk of transmission to patients, staff and visitors in adjacent areas.

Ongoing compressions:

- An appropriate heat and moisture exchanging (HME) viral filter must be connected to any positive pressure oxygen delivery device, as close to the patient as possible. Take care to ensure that all connections are secure.
- Mechanical CPR devices may be useful to reduce the number of health care workers present during resuscitation. They should only be used when staff are adequately trained in their use.

LEGEND

Prioritised for review

Not prioritised for review

Post resuscitation

RECOMMENDED ACTIONS

Following return of spontaneous circulation (ROSC):

- Connect a closed inline suction system if available.

Termination of resuscitation:

- Clinicians should give early consideration to the appropriateness of ongoing resuscitation when no reversible cause of cardiac arrest can be identified.

Sources

ACEM – Management of adult cardiac arrest in the COVID-19 era: consensus statement from the Australasian College for Emergency Medicine. MJA. 2020;213:126-133.
CDNA - Coronavirus Disease 2019 (COVID-19) Communicable Diseases Network Australia (CDNA) National Guidelines for Public Health Units. V4.2, 29 January 2021.
Couper/Taylor-Phillips (ILCOR) – COVID-19 in cardiac arrest and infection risk to rescuers: A systematic review. Resuscitation. 2020;151:59-66.
ILCOR – International Liaison Committee on Resuscitation: COVID-19 consensus on science, treatment recommendations and task force insights. Resuscitation. 2020;151:145-147.
NHMRC – Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: National Health and Medical Research Council (2019).
RCUK – Resuscitation Council UK Statement on COVID-19 in relation to CPR and resuscitation in acute hospital settings. Version 5 (1 May 2020).