Summary of adjustments to CPR algorithms in suspected or confirmed COVID-19 patients.

Reduce provider exposure

- Don PPE before entering the room/scene
- Limit personnel
- Consider using mechanical CPR devices for adults and adolescents who meet height and weight criteria
- Communicate COVID-19 status to any new providers

Prioritize oxygenation and ventilation strategies with lower aerosolization risk

- Use a HEPA filter, if available, for all ventilation
- Intubate early with a cuffed tube, if possible, and connect to mechanical ventilator, when able
- Engage the intubator with highest chance of first-pass success
- Pause chest compressions to intubate
- Consider use of video laryngoscopy, if available
- Before intubation, use a bag-mask device (or T-piece in neonates) with a HEPA filter and a tight seal
- For adults, consider passive oxygenation with nonrebreathing face mask as alternative to bag- mask device for short duration
- If intubation delayed, consider supraglottic airway
- Minimize closed circuit disconnections

Consider resuscitation appropriateness

- · Address goals of care
- Adopt policies to guide determination, taking into account patient risk factors for survival

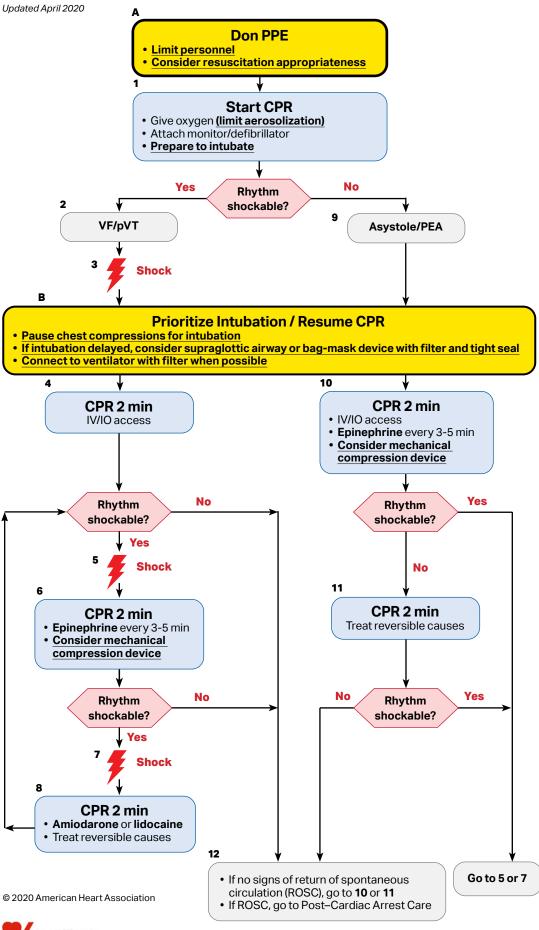


BLS Healthcare Provider Adult Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients

Updated April 2020 Verify scene safety Don PPE Limit personnel Victim is unresponsive. Shout for nearby help. · Provide rescue breathing Activate emergency response system using bag-mask device with via mobile device (if appropriate). filter and tight seal. Get AED and emergency equipment • 1 breath every 5-6 seconds, (or send someone to do so). or about 10-12 breaths/min. · Activate emergency re-**Normal** No normal sponse system (if not already breathing, Look for no breathing breathing, done) after 2 minutes. Monitor until or only gasping and check has pulse Continue rescue breathing: has pulse emergency check pulse about every pulse (simultaneously). responders arrive. Is pulse definitely felt 2 minutes. If no pulse, begin CPR (go to "CPR" box). within 10 seconds? · If possible opioid overdose, administer naloxone if No breathing available per protocol. or only gasping, no pulse By this time in all scenarios, emergency response system or backup is activated, and AED and emergency equipment are retrieved or someone is retrieving them. **CPR** Begin cycles of 30 compressions and 2 breaths using bag-mask device with filter and tight seal continuous compressions with passive oxygenation using face mask. Use AED as soon as it is available. AED arrives. Check rhythm. Shockable rhythm? Yes, No, nonshockable shockable Resume CPR immediately for Give 1 shock. Resume CPR immediately for about 2 minutes about 2 minutes (until prompted (until prompted by AED to allow by AED to allow rhythm check). rhythm check). Continue until ALS providers take Continue until ALS providers take over or victim starts to move. over or victim starts to move.



ACLS Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients



CPR Quality

- Push hard (at least 5 cm [2 inches]) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- · Change compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 30:2 compression-ventilation ratio.
- Quantitative waveform capnography
- If PETCO₂ <10 mm Hg, attempt to improve CPR quality.
- · Intra-arterial pressure
 - If relaxation phase (diastolic) pressure < 20 mm Hg, attempt to improve CPR quality.

Shock Energy for Defibrillation

- · Biphasic: Manufacturer recommendation (eg, initial dose of 120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- Monophasic: 360 J

Advanced Airway

- Minimize closed-circuit disconnection
- Use intubator with highest likelihood of first pass success
- Consider video laryngoscopy
- · Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Drug Therapy

- Epinephrine IV/IO dose: 1 mg every 3-5 minutes
- · Amiodarone IV/IO dose: First dose: 300 mg bolus. Second dose: 150 mg.

Lidocaine IV/IO dose:

First dose: 1-1.5 mg/kg. Second dose: 0.5-0.75 mg/kg.

Return of Spontaneous Circulation (ROSC)

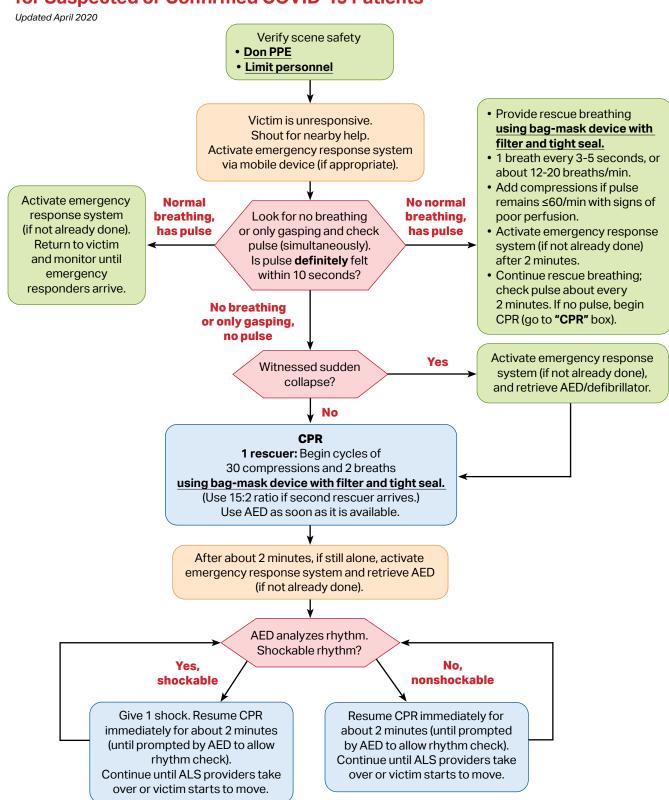
- · Pulse and blood pressure
- Abrupt sustained increase in Petco₂ (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes

- **H**ypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- · Thrombosis, pulmonary
- Thrombosis, coronary



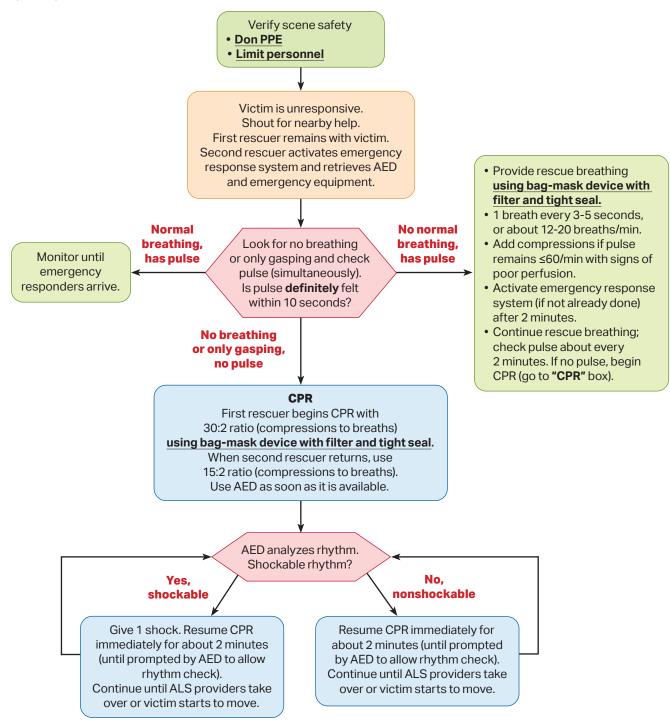
BLS Healthcare Provider Pediatric Cardiac Arrest Algorithm for the Single Rescuer for Suspected or Confirmed COVID-19 Patients





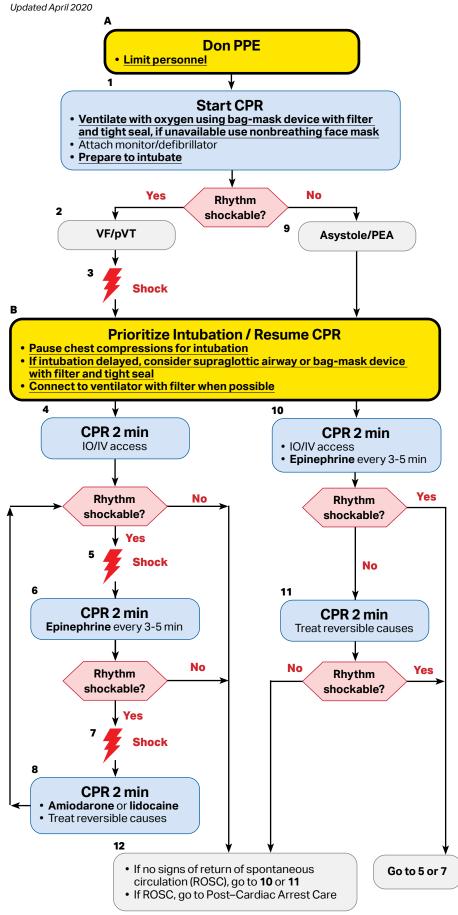
BLS Healthcare Provider Pediatric Cardiac Arrest Algorithm for 2 or More Rescuers for Suspected or Confirmed COVID-19 Patients

Updated April 2020





Pediatric Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients



CPR Quality

- Push hard (≥⅓ of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Change compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 15:2 compression-ventilation ratio.

Shock Energy for Defibrillation

First shock 2 J/kg, second shock 4 J/kg, subsequent shocks ≥4 J/kg, maximum 10 J/kg or adult dose

Advanced Airway

- Minimize closed-circuit disconnection
- Use intubator with highest likelihood of first pass success
- Consider video laryngoscopy
- Prefer cuffed endotracheal tube if available
- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Drug Therapy

- Epinephrine IO/IV dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Repeat every 3-5 minutes.
- Amiodarone IO/IV dose:
 5 mg/kg bolus during cardiac arrest.
 May repeat up to 2 times for refractory VF/pulseless VT.

Lidocaine IO/IV dose:

Initial: 1 mg/kg loading dose. Maintenance: 20-50 mcg/kg per minute infusion (repeat bolus dose if infusion initiated >15 minutes after initial bolus therapy).

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes

- Hypovolemia
- **H**ypoxia
- Hydrogen ion (acidosis)
- **H**ypoglycemia
- **H**ypo-/hyperkalemia
- **H**ypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

