

Paediatric Cardiac arrest in vaccination settings

Cardiorespiratory arrest in children is rare. Children attending a vaccination setting will usually be well, relative to their underlying condition, so their oxygen levels prior to vaccination should be at their normal baseline. The most likely cause of arrest in this setting, therefore, would be severe anaphylaxis – something which is very uncommon in young people (children and adolescents).

The first priority must be to treat anaphylaxis proactively according to the anaphylaxis guidelines (algorithm attached). In particular, intramuscular adrenaline should be a priority treatment and delivery of high-flow oxygen if available, along with a call to emergency services (999).

If cardiorespiratory arrest occurs the emergency services must be called, and immediate cardiopulmonary resuscitation (CPR) started.

Rescue breaths increase the risk of transmitting the COVID-19 virus, either to the rescuer or the child. However, this risk is small compared to the risk to the child of taking no action. Therefore give ventilations/rescue breaths wherever possible as per Paediatric Basic life Support guidelines (algorithm attached). Bag-valve-mask ventilation (ideally with an HME/viral filter) by those trained to do so, is preferable to using a face mask, which is in turn preferable to mouth-to-mouth or mouth-to-mouth-and-nose from a rescuer safety perspective.

With this in mind, a risk assessment is essential and should include the skills required, training to be provided and equipment made available, along with a documented response to emergencies.

The level of PPE provided will vary in vaccination settings (e.g. proximity to advanced resuscitation facilities, and vaccination of higher risk populations such as those with chronic health conditions) and the planned emergency response should reflect this. The individual rescuer may need to undertake a dynamic risk assessment and should be supported whenever possible in their actions.

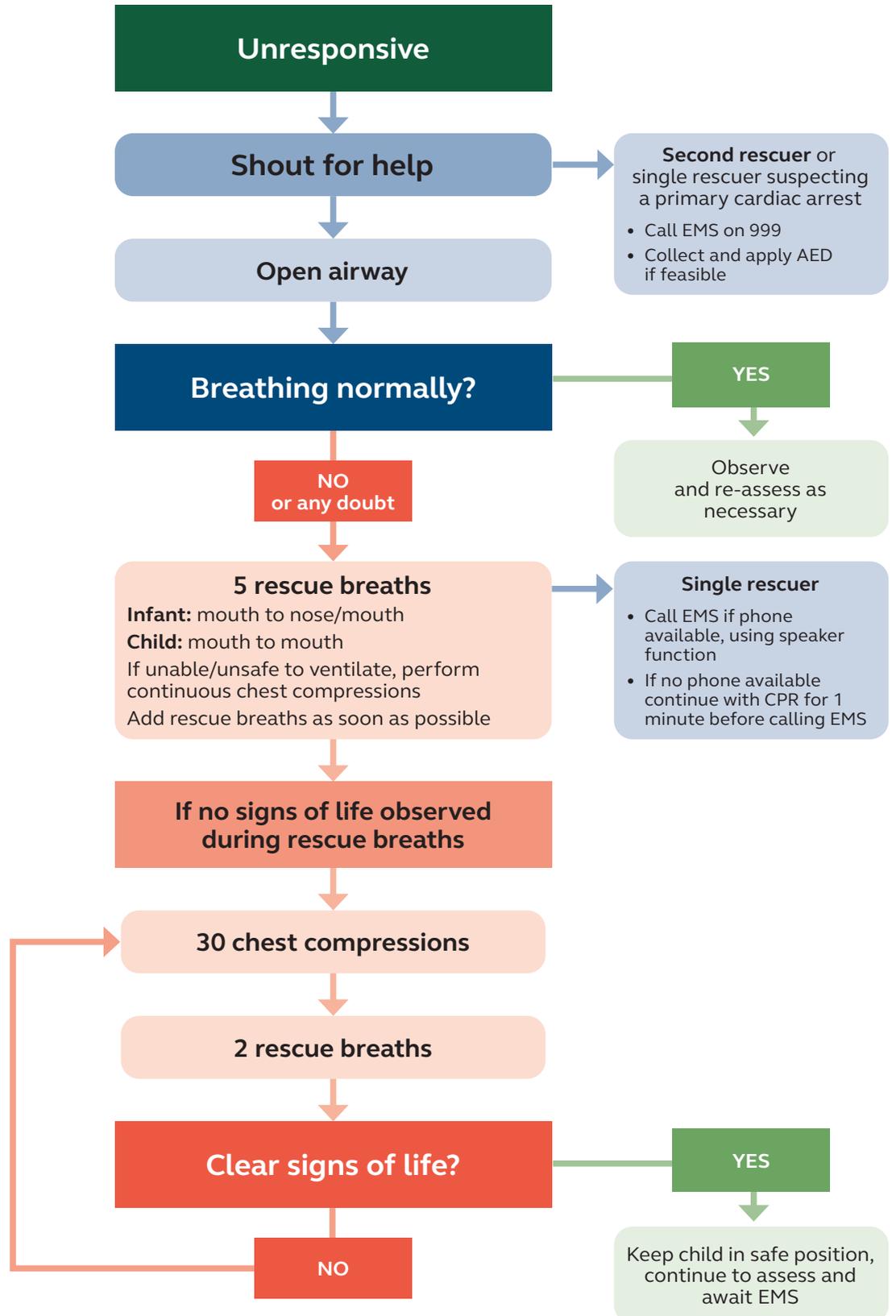
CPR (including ventilation and chest compressions) is an aerosol generating procedure. Therefore, resuscitation should be carried out using the highest level of PPE available to the rescuer. The risk assessment will clarify the planned response and needs within the vaccination setting and identify what PPE will be provided and the training to use it. This must be communicated to everyone working in the setting.

Once the emergency medical response arrives, direction should be taken from the ambulance personnel. They may require rescuers to withdraw from the area whilst procedures are carried out and all directions should be followed.

There should be a debrief of the event and the drug reaction should be reported using the 'yellow card system'. There should be governance structures in place to review and report events.

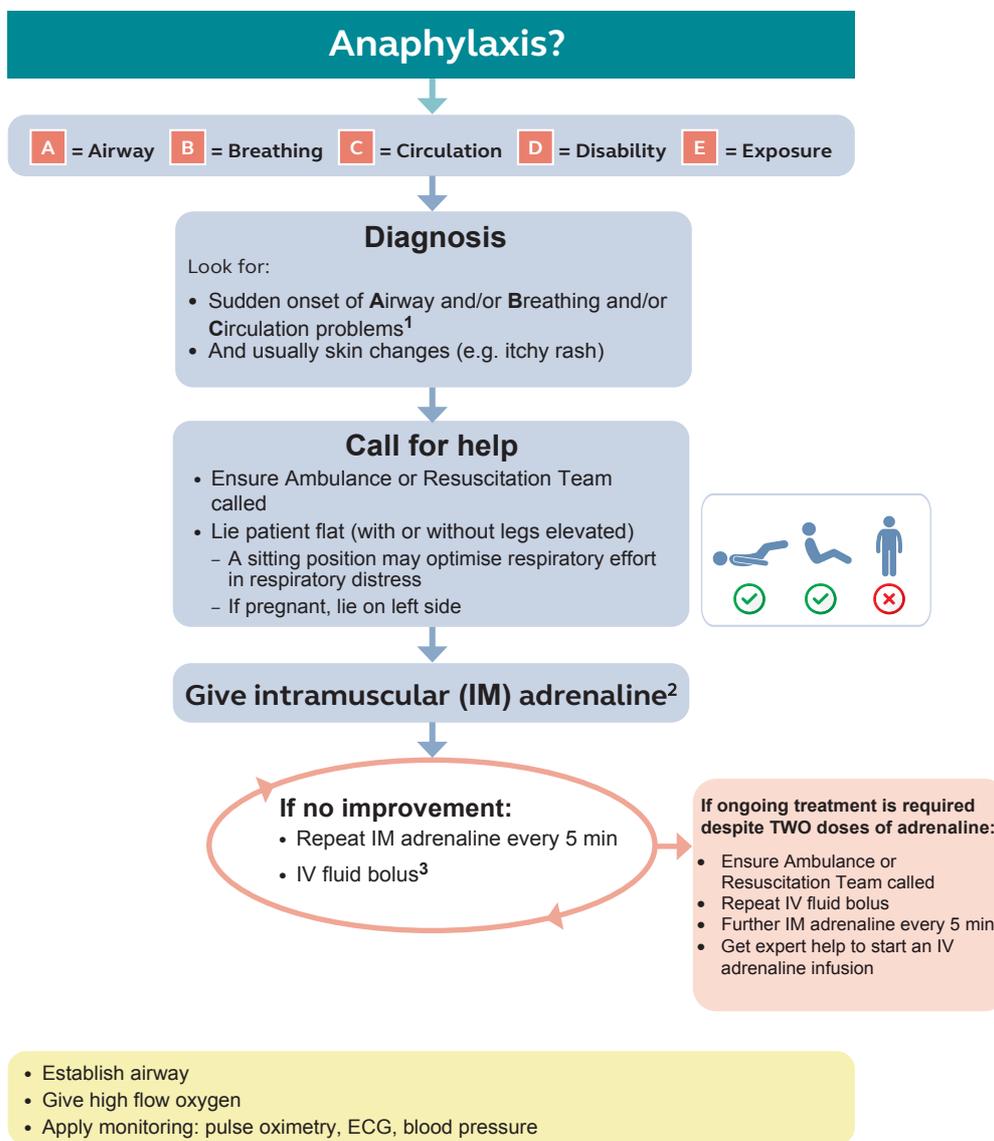
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Paediatric out-of-hospital basic life support



Those trained only in 'adult' BLS (may include healthcare providers and lay rescuers) who have no specific knowledge of paediatric resuscitation, should use the adult sequence they are familiar with, including paediatric modifications.

MANAGEMENT OF ANAPHYLAXIS IN THE VACCINATION SETTING



1. Life-threatening problems

Airway
Swelling, hoarseness, stridor

Breathing
Rapid breathing, wheeze, fatigue, cyanosis, SpO₂ <94%, confusion

Circulation
Pale, clammy, low blood pressure, faintness, drowsy/coma

2. IM adrenaline

IM doses of 1 mg in 1 mL (1:1000) adrenaline

Adult and child >12 years: 500 micrograms IM (0.5 mL)

Child 6–12 years: 300 micrograms IM (0.3 mL)

Child 6 months to 6 years: 150 micrograms IM (0.15 mL)

Child <6 months: 100–150 micrograms IM (0.1–0.15 mL)

(Adrenaline IV to be given only by experienced specialists)

3. IV fluid bolus

Use crystalloid

Adults: 500–1000 mL

Children: 10 mL/kg