PAEDIATRIC ADVANCED LIFE SUPPORT ALGORITHM

GUIDELINES 2025
EUROPEAN RESUSCITATION COUNCIL©

Recognise cardiac arrest

No signs of life and / or bradycardia < 60 min^{-1} with poor perfusion

- Call EMS / resuscitation team
- 5 rescue breaths, then CPR 15:2
- Attach defibrillator / monitor

ASSESS RHYTHM

Shockable
VF/pVT

Non shockable
Bradycardia, asystole, PEA

1 Shock
4 J kg^{-1}

IV / IO adrenaline as soon as possible

Immediately resume CPR for 2 minutes

Termination of resuscitation

Return of spontaneous circulation (ROSC)

! Correct reversible causes

- Hypoxia
- Hypovolaemia
- Hyper-hypokalaemia, -calcaemia, -magnesaemia, hypoglycaemia (metabolic)
- Hyper-hypothermia
- Toxic agents
- Tamponade (cardiac)
- Tension pneumothorax
- Thromboembolism (coronary / pulmonary)

For shockable rhythms

- Continue with shocks every 2 minutes at 4 J kg^{-1}
- If necessary, escalate to up to 8 J kg^{-1}, max 360 J for refractory VF / pVT (from the 5th shock)

IV / IO Adrenaline 10 µg kg^{-1} (max 1 mg)

- After 4 minutes
- Every 4 minutes thereafter

IV / IO Amiodarone

- 5 mg kg^{-1} (max 300 mg) after 3rd shock
- 5 mg kg^{-1} (max 150 mg) after 5th shock

For non-shockable rhythms

- IV / IO Adrenaline 10 µg kg^{-1} (max 1 mg) every 4 minutes (alternate cycles)

During CPR

- High quality chest compressions: rate, depth, recoil
- BMV with 100% oxygen (2-person technique)
- Continuous chest compressions if a TT / SGA is placed. Ventilate at rate of 25 (< 1 y), 20 (1-8 y), 15 (8-12 y) or 10 (> 12 y) per minute

Immediate Post ROSC

- ABCDE approach
- Controlled oxygenation (SpO_2 94-98%) and ventilation ($PaCO_2$ 4.6-6 kPa (35-45 mmHg))
- Maintain systolic and mean BP > 10th percentile for age
- Avoid / manage hyperthermia
- Check glucose (aim for normal blood glucose)
- Treat precipitating causes

ABCDE - airway, breathing, circulation, disability, exposure; BMV - bag-mask ventilation; CPR - cardiopulmonary resuscitation; ECG - electrocardiogram; EMS - emergency medical services; IO - intraosseous; IV - intravenous; PEA - pulseless electrical activity; $PaCO_2$ - arterial partial pressure of carbon dioxide; pVT - pulseless ventricular tachycardia; ROSC - return of spontaneous circulation; BP - blood pressure; SpO_2 - oxygen saturation measured with pulse oximetry; TT - tracheal tube; SGA - supraglottic airway; VF - ventricular fibrillation; VT - ventricular tachycardia