Cardiac Arrest Algorithm

THEATRE / ANAESTHESIA

Context. The probable cause is one or more of: something related to surgery or anaesthesia, or the patient's underlying medical condition.

First priority: start chest compressions, get help, then find and treat the cause using the guideline.

1 IMMEDIATE ACTION

- Declare “cardiac arrest” to the theatre team and note the time.
- Delegate at least one person to chest compressions: 100 min^{-1}, depth 5 cm.
- Call for help: nearby theatres, emergency bell, senior on-call, or the local emergency number.
- Call for the cardiac arrest trolley.
- As soon as possible, delegate evaluation of potential causes (Box A).

2 Adequate oxygen delivery

- Increase fresh gas flow, give 100% oxygen, and check measured F_IO_2.
- Turn off anaesthetic, whether inhalational or intravenous.
- Check that breathing-system valves work and all connections are intact.
- Rapidly confirm ventilator bellows movement or provide manual ventilation.

3 Airway

- Check the airway-device position and listen for noise, including at the larynx and stomach.
- Confirm that the airway device is patent; consider passing a suction catheter.
- If expired CO_2 is absent, presume oesophageal intubation until absolutely excluded.

4 Breathing

- Check chest symmetry, rate, breath sounds, SpO_2, measured expired volume, and $ETCO_2$.
- Evaluate airway pressure using the reservoir bag and adjustable pressure-limiting valve.

5 Circulation

- Check the rate and adequacy of chest compressions visually and with $ETCO_2$.
- Rotate the person performing compressions.
- If intravenous access fails or is impossible, use the intraosseous route.
- Check the ECG rhythm for no more than 5 seconds.
- Follow current Resuscitation Council UK / ERC guidance.
- Use current guidance for drugs and defibrillation (Boxes B and C).

6 Systematically evaluate potential underlying problems

- Identify and treat reversible causes using Box A and the clinical context.

7 Return of spontaneous circulation

- If circulation returns, re-establish anaesthesia and begin structured post-arrest care.

BOX A: POTENTIAL CAUSES

4 Hs: hypoxia; hypovolaemia; hypo-/hyperkalaemia and metabolic causes; hypothermia.
4 Ts: tamponade; thrombosis; toxins; tension pneumothorax.

BOX B: DRUGS

Use the current arrest rhythm algorithm and local policy. Confirm indications, dose, route, timing, contraindications and reversible causes before giving additional agents.

BOX C: DEFIBRILLATION

Continue high-quality CPR while the defibrillator is prepared. Minimise pauses, confirm the rhythm, and use the current shock strategy and energy settings for the device.

ANNOTATION — This is a typed adaptation of an AAGBI 2018 theatre-specific reference, not a replacement for the current general ALS algorithm. Check current RCUK/ERC guidance, the local cardiac-arrest policy, and equipment-specific instructions.

Source: Association of Anaesthetists of Great Britain and Ireland, Quick Reference Handbook, Cardiac arrest 2-1 v.1 (2018). Typed and reformatted for accessibility; source wording has been lightly normalised for legibility.