Advanced Cardiac Arrest Algorithm
Adult and Paediatric

HAZARDS
Ensure the scene is safe

HELLO
• Unresponsive?
• Not breathing or only gasping?
• Pulse?

HAS PULSE AND BREATHING
• Place in recovery position
• Check for continued breathing
• Reassess continuously

HELP
Call for assistance and AED/Defibrillator
Emergency No: ............................

HAS PULSE BUT NO EFFECTIVE BREATHING
Give rescue breaths
• Adult: every 6 seconds
• Child: every 3 seconds
• Infant: every 2 seconds
• Reassess continuously

START CHEST COMPRESSIONS
• Compress the chest fast (almost 2 per second)
• Push hard | Ensure full chest recoil
• Minimise interruptions

BREATHS
• Attempt 2 breaths at 1 breath/second (with O₂ if available) after every 30 compressions
• Adult ratio 30:2 | Children/Infants 30:2 (2-rescuer 15:2)
• Continue until AED/Defibrillator arrives

HIGH QUALITY CPR
• Compression rate 100-120 per minute
• Avoid excessive ventilation
• 1 breath every 6 seconds if advanced airway
• Change or switch compressors every two minutes
• Consider capnography and arterial monitoring

If unable to perform breaths, do continuous compressions until equipment arrives

ADVANCED CONSIDERATIONS
• Correct contributory causes
• Obtain IV/IO access, take ABG/VBG
• Give high levels of FiO₂ and consider advanced airway if required
• Continuous chest compressions after advanced airway in place
• Consider Adrenaline and antiarrhythmics (VF/pVT):
  o Adrenaline 1mg every 3-5 min (0.01mg/kg in paediatrics)
  o Amiodarone 300mg followed by 150mg (5mg/kg in paediatrics)
OR
  o Lignocaine 1.5mg/kg initial, followed by 0.5mg/kg (max 3mg/kg)

CONTRIBUTORY CAUSES
• Hypoxia
• Hypovolaemia
• Hypothermia
• Hydrogen ion (Acidosis)
• Hypo/Hyperkalaemia
• Hypoglycaemia
• Tension Pneumothorax
• Tamponade (Cardiac)
• Toxins
• Trauma
• Thrombosis (Coronary)
• Thrombosis (Pulmonary)

ADDITIONAL CONSIDERATIONS:
• VA ECMO might be considered in appropriate centres when available;
• Ultrasound can be considered as a diagnostic and procedural tool where training and resources exist