Paediatric Advanced Cardiac Arrest Algorithm for Covid-19 Pandemic

**PREPARATION + HAZARDS**
- Advisable to have pre-arrest readiness teams, to not delay resus ➔ Pre-cardiac arrest discussion on DNAR
- Ensure environment is safe ➔ Do all appropriate PPE ➔ Alert for Covid-19

**HELLO**
- Look from a distance, keep others safely away
- Do not feel for breathing, but look for visible chest rise and feel for pulse

**HAS PULSE AND BREATHING**
- Place in recovery position
- Look from a distance for continued breathing and reassess regularly
- Maintain “Crowd control” at least 2m from the child

**HELP**
- Call either 112 or local ambulance, Call for assistance, Defib/AED
  - **EMERGENCY NUMBER**

**HAS PULSE BUT NO EFFECTIVE BREATHING**
- Give rescue breaths
- Two handed mask technique with tight seal, viral filter between mask and self-inflating bag
- Try to get definitive airway ASAP
- Supraglottic or Video laryngoscopy

**START CHEST COMPRESSIONS**
- Push Hard and Fast (almost 2/second)
- Ensure full chest recoil
- Minimize interruptions
- If suspected cardiac cause of arrest, continuous compressions while waiting ECG analysis with tight fitting non-rebreather mask @ 100% FiO₂

**BREATHS**
- Early intubation is preferable
- Delay breaths with continuous compressions until full PPE donned for airway manager
- Attempt 2 breaths at 1 breath/second with 100% Oxygen
- Infants & Children 30:2 if alone, 15:2 if 2-rescuer
- Continue until AED/Defib arrives and attach immediately

**ATTACH AED / DEFIB IMMEDIATELY**
- Shock Advised (VF/VT)
- No Shock Advised (PEA/Asystole)
- Give 1 Shock infants + Children 2-4J/kg
- If signs of life are present monitor and provide post ROSC care. If absent continue CPR
- Immediately resume CPR starting with compressions. Continue for 2 minutes

**AIRWAY MANAGEMENT**
- NB – highest risk of viral contamination to rescuers
- Rescuer must have full PPE
- Early definitive airway with attachment to ventilator
- Viral filter protection placed on BVM and ventilator
- Video laryngoscopy is recommended to distance rescuer from the pt’s mouth and nose (if competent) – otherwise SGD (LMA/iGel)
- Cover the patient’s mouth and nose after the airway procedure

**HIGH QUALITY CPR**
- Compression rate 100 – 120 per minute
- Avoid excessive ventilation
- 1 breath every 3-5 seconds if advanced airway
- Rotate compressors every 2 minutes (or 1 min if full PPE and tiring)
- Consider capnography and arterial monitoring

**ADVANCED CONSIDERATIONS**
- Correct the cause as soon as possible
- Avoid prolonged resuscitations (if no cause found)
- Obtain IO/IV access, take ABG/VBG
- Early intubation with viral protection due to aerosol generation
- Continuous chest compressions after definitive airway – place on ventilator as soon as possible with viral protection (adjust alarm settings)
- Consider Adrenaline and other anti-arrhythmics
- Adrenaline 0.1 mls/kg of 1:10 000 (1mg diluted with 9mls N/S)

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