Queensland Paediatric CPR Algorithm

**SHOCKABLE**

- Pulseless Ventricular Tachycardia
- Ventricular Fibrillation

**DC shock 4 J/kg (max. 200J)**

- 2 min CPR
- Assess rhythm

- Secure airway: ETT / LMA

Followed immediately by

**IV/IO Adrenaline**

- 10 micrograms/kg (max. 1mg)
- 0.1 mL/kg of 1:10,000

**DC shock 4 J/kg (max. 200J)**

- 2 min CPR
- Assess rhythm

**IV/IO Amiodarone**

- 5 mg/kg (max. 300mg)

**DC shock 4 J/kg (max. 200J)**

- 2 min CPR
- Assess rhythm

**IV/IO Adrenaline**

- 10 micrograms/kg (max. 1mg)

**DC shock 4 J/kg (max. 200J)**

- 2 min CPR
- Assess rhythm

**IV/IO Adrenaline**

- 10 micrograms/kg (max. 1mg)

**DC shock 4 J/kg (max. 200J)**

- 2 min CPR
- Assess rhythm

**IV/IO Adrenaline**

- 10 micrograms/kg (max. 1mg)

Assess cardiac rhythm every 2 minutes
If rhythm organised → check pulse

1. Select Energy 4 J/kg (max. 200J) for all shocks
2. Press CHARGE
   Continue CPR while charging
3. • Ask everyone to stand clear
   • Reassess rhythm and absence of pulse
   • Press SHOCK
   • Immediately resume CPR for 2 min

Consider and Correct Reversible Causes

4H’s

- Hypoxia
- Hypovolaemia
- Hypo / Hyperthermia
- Hypo / Hyperkalaemia

4T’s

- Tamponade (cardiac)
- Tension Pneumothorax
- Toxins / poisons / drugs
- Thrombosis – pulmonary / coronary

Consider IV Na Bicarbonate 8.4%
1mL/kg in cases of:
- Severe metabolic acidosis
- Hyperkalaemia

**Management of Bradycardia**

**Bradycardia causes:** Commonly hypoxia – preterminal sign, poisoning / toxicological causes, raised ICP, Vagal stimulation

- Treatment
  - Treat hypoxia and shock
  - Maintain airway
  - IV/IO Adrenaline
    - 10 micrograms/kg
    - 0.1 mL/kg of 1:10,000 (max. 1 mg)
  - Consider vagal manoeuvres (no delays)
    - Apply ice to face
    - Infant / young child: Valsalva manoeuvre (i.e. blow through a narrow straw or syringe, ask the child to cough) / Carotid massage
  - Establish large bore proximal IV access
  - Is the defibrillator immediately available?
  - Synchronous DC shock
    - 1 J/kg (max. 200 J)
  - Consider anti-arrhythmic
    - e.g. IV Amiodarone
      - 5 mg/kg over 20 min (max. 300 mg)
  - Synchronous DC shock
    - 2 J/kg (max. 200 J)
  - Continue to monitor
    - Notify PICU Consultant & Cardiologist
  - Consider pacing Adrenaline infusion
  - Provide sedation and analgesia

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- HR < 60 bpm and poor perfusion – commence CPR

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- Yes: 2 J/kg (max. 200 J)
- No: 1 J/kg (max. 200 J)

**Management of Supraventricular Tachycardia**

- **Supraventricular Tachycardia**
  - P waves absent or abnormal
  - HR not variable
  - Infants: Rate > 220/min
  - Children: Rate > 200/min
  - Management:
    - Establish large bore proximal IV access
    - Use sedation where possible prior to cardioversion
    - Adenosine
      - 100 micrograms/kg (max. dose 6 mg)
      - 2 minutes
    - Adenosine
      - 200 micrograms/kg (max. dose 12 mg)
      - 2 minutes
    - Adenosine
      - 300 micrograms/kg (max. dose 12 mg)
      - 2 minutes
    - Call Cardiologist

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- YES: NO

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- YES: NO

**Management of Ventricular Tachycardia (with a pulse)**

- **Ventricular Tachycardia**
  - NB: If no pulse
    - Continue CPR
    - 15 compressions : 2 breaths
  - Synchronous DC shock
    - 1 J/kg (max. 200 J)
  - Synchronous DC shock
    - 2 J/kg (max. 200 J)
  - Consider anti-arrhythmic
    - e.g. IV Amiodarone
      - 5 mg/kg over 30 min (max. 300 mg)
  - Synchronous DC shock
    - 2 J/kg (max. 200 J)
  - Continue to monitor
    - Sponge the head
    - Notify PICU Consultant & Cardiologist
  - Consider
    - Wide-QRS tachycardia
    - In stable children may be treated as SVT
    - Synchronous DC shock
      - 1 J/kg (max. 200 J)
  - Use sedation where possible prior to cardioversion
  - Consider
    - Wide-QRS tachycardia
    - R waves are marked with a triangle

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- YES: NO

**SHOCK PRESENT**

- Attach monitor
- Assess rhythm
- YES: NO