

Bradycardia

v1.1

Bradycardia may be the result of the underlying disease process or as a response to treatment. The ALS bradycardia algorithm is on the next page

START: IMMEDIATELY NOTIFY DRIVER, STOP SAFELY

1 Immediate actions

- Follow Key Basic Plan
- Check pulse:
 - If no pulse, treat as cardiac arrest (→ EAC)
 - If critical bradycardia with hypotension use Box B

2 Breathing

- Exclude **hypoxia** and **hypercarbia** as causes

3 Circulation

- Check rhythm – differentiate sinus vs heart block
- Check perfusion, recheck blood pressure
- Apply defibrillator pads
- Troubleshoot external pacemaker if already in place

4 Disability

- Assess pupils
- Ensure appropriate sedation and analgesia

5 Consider potential causes (Box C)

- Treat accordingly

6 Consider transcutaneous pacing (Box D)

Box A: CRITICAL CHANGES

- If problem worsens significantly, or a new problem arises, go back to **START** of Key Basic Plan
- If Transfer Practitioner or Transfer Doctor transfer, contact Remote Duty Consultant
- Consider contacting Leadership SPOC for support, if required

Box B: DRUGS FOR BRADYCARDIA

- Atropine 300-600mcg / 0.5-1ml
- Glycopyrrolate 200-400mcg / 1-2ml
- Adrenaline 10-100mcg **in emergency only**
- Isoprenaline 0.01mcg/kg/min (increase in increments of 0.01 to max 0.15mcg/kg/min)

Box C: POTENTIAL CAUSES

- Medical causes:
 - Raised intracranial pressure (→ EAC)
 - Hypoxaemia (→ EAC)
 - Myocardial infarction or ischaemia (→ EAC)
 - Hyperkalaemia
 - Hypothermia
- Consider whether you could have made a drug error
- Consider known drug causes (e.g. excessive sedation or rate control agents)
- Temporary / permanent pacemaker system malfunction

BOX D: TRANSCUTANEOUS PACING USING ZOLL X-SERIES

- Attach pads and ECG monitoring leads
- If patient conscious, consider sedation/analgesia (e.g. ketamine)
- Turn on PACING MODE
- Set RATE
- Increase PACER OUTPUT from 30 mA until electrical capture
- Confirm mechanical capture (central pulse) [reposition pads if nothing at 130mA]
- Set PACER OUTPUT 10 mA above capture