

**Michigan**  
**Adult Cardiac Protocols**  
**BRADYCARDIA**

Date: November 15, 2012

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***Bradycardia***

This is a protocol for patients with serious symptomatic bradycardia. Serious symptomatic bradycardia may be defined as patients with heart rate less than 50 bpm and hypotension, or shock. Titrate treatments to a heart rate above 50 bpm. If the patient remains hypotensive refer to the **Shock Protocol**.

**Pre-Medical Control**

**MFR/EMT/SPECIALIST/PARAMEDIC**

1. Follow the **General Pre-Hospital Care Protocol**.

**PARAMEDIC**

2. Administer Atropine 0.5 mg IV/IO repeating every 3-5 minutes to a total dose of 3 mg IV/IO, until a heart rate of greater than 50 /minute is reached.
3. Transcutaneous pacing (TCP) when available may be initiated prior to establishment of IV access and/or before Atropine begins to take effect. Pacing is the treatment of choice for high degree A-V block. Follow the **Electrical Therapy Procedure**.
4. Per MCA selection, provide sedation per **Patient Sedation Procedure**.

**Post-Medical Control**

1. Consider Dopamine Drip 2-10 mcg/kg/min IV/IO. Mix drip by putting Dopamine 400 mg in 250 ml NS.
2. Consider Epinephrine Drip 2-10 mcg/min IV/IO. Mix drip by putting Epinephrine 1:1,000, 1 mg (1 ml) in 250 ml NS.

Notes:

1. Some patients may not tolerate the pacing stimulus to the skin and chest wall that occurs with transcutaneous pacing. In these cases, consider sedation if SBP > 100. (See box)
2. Consider possible etiologies:
  - A. Hyper/hypokalemia, other metabolic disorders
  - B. Hypothermia
  - C. Hypovolemia (including vomiting/diarrhea)
  - D. Hypoxia
  - E. Toxins/ overdose (e.g. beta-blocker or calcium channel-blocker)
  - F. Tamponade
  - G. Tension pneumothorax
3. Transcutaneous pacemaker electrode pads may be applied to these patients without initiating pacing so that the pacemaker is ready if patient condition deteriorates.
4. For symptomatic high-degree (second-degree or third-degree) AV block, begin pacing without delay.
5. Atropine 0.5 mg should be administered by rapid IV/IO push and may be repeated every 3-5 minutes, to a maximum dose of 3 mg. Atropine is ineffective and should be avoided in heart transplant patients.

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Follow the **General Pre-Hospital Care Protocol**

Administer Atropine 0.5 mg IV/IO repeating every 3-5 minutes to a total dose of 3 mg IV/IO, until a heart rate of greater than 50 / minute is reached.

Transcutaneous pacing (TCP) when available may be initiated prior to establishment of IV access and/or before Atropine begins to take effect. Pacing is the treatment of choice for high degree A-V block. Follow the **Electrical Therapy Procedure**.

Per MCA selection, provide sedation per **Patient Sedation Procedure**.

**Contact Medical  
Control**

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