**Bradycardia**

**History**
- Past medical history
- Medications
  - Beta-Blockers
  - Calcium channel blockers
  - Clonidine
  - Digoxin
  - Pacemaker

**Signs and Symptoms**
- HR < 60/min with hypotension, acute altered mental status, chest pain, acute CHF, seizures, syncope, or shock secondary to bradycardia
- Chest pain
- Respiratory distress
- Hypotension or Shock
- Altered mental status
- Syncope

**Differential**
- Acute myocardial infarction
- Hypoxia
- Pacemaker failure
- Hypothermia
- Sinus bradycardia
- Athletes
- Head injury (elevated ICP) or Stroke
- Spinal cord lesion
- Sick sinus syndrome
- AV blocks (1°, 2°, or 3°)
- Overdose

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**Universal Patient Care Protocol**

1. **Assess rhythm**
2. **HR < 60/min with hypotension, acute altered mental status, chest pain, acute CHF, seizures, syncope, or shock secondary to bradycardia**
3. **Atropine** - if in setting of myocardial infarction do not give atropine if there is a wide complex rhythm
4. **Fluid Bolus**
5. **Consider External Cutaneous Pacing early in the unstable patient (especially in 2° or 3° Degree Heart Block)**
6. **Notify Destination or Contact MC**
7. **Consider Dopamine** if patient still hypotensive
8. **Consider Glucagon** if patient still bradycardic and on beta blockers
9. **Consider Calcium** if patient still bradycardic and on calcium channel blockers

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**Legend**
- IV Protocol
- Assess rhythm
- 12 Lead ECG
- Fluid Bolus
- Notify Destination or Contact MC
- Medical Control

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**Pearls**
- **Recommended Exam**: Mental Status, Neck, Heart, Lungs, Neuro
- The use of Lidocaine, Beta Blockers, and Calcium Channel Blockers in heart block can worsen Bradycardia and lead to asystole and death.
- Pharmacological treatment of Bradycardia is based upon the presence or absence of symptoms. If **symptomatic treat, if asymptomatic, monitor only**.
- In wide complex slow rhythm consider hyperkalemia
- Remember: The use of Atropine for PVCs in the presence of a MI may worsen heart damage.
- Consider treatable causes for Bradycardia (Beta Blocker OD, Calcium Channel Blocker OD, etc.)
- Be sure to aggressively oxygenate the patient and support respiratory effort.

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**Protocol 19**

Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS 2009