

	<b>Department Name Address</b>	<b>ALS</b>	<b>Paramedic</b>
		<b>Revision #</b>	
		<b>Implementation Date</b>	
<b>Protocol</b>	<b>2.1.7 Bradycardia</b>	<b>Last Reviewed/Update Date</b>	
<b>Author / Owner</b>		<b>Medical Director</b>	

Patients presenting with bradycardia can be placed into one of two categories: symptomatic and asymptomatic. Symptomatic criteria include: hypotension, ventricular escape beats, altered mental status, chest pain, dyspnea, or acute ischemia identified in a 12-lead ECG.

Bradycardia with hypotension may be due to inferior wall MI associated with right ventricular MI. If this is the case, avoid the use of nitrates (nitroglycerine). If bradycardia and hypotension exists, pacing and IV fluids may improve the patient's hemodynamic status.

Goal: Rapid assessment, symptomatic treatment, and smooth transport with ongoing assessment of changes in patient condition and stability. Early notification to the receiving emergency department and medical control is necessary.

1. Baseline care standards.
2. Administer oxygen by non-rebreather mask at 15L per minute.
3. Establish IV Normal Saline TKO.
4. Perform a 12 Lead EKG and transmit to the receiving ER or notify medical control of ST segment elevation (see 2.1.3 Chest Pain and AMI protocol). If patient is in 2<sup>nd</sup> degree AV block type II or 3<sup>rd</sup> degree AV block skip #5 (Atropine) and go to #6.
5. If patient is symptomatic, administer:
  - *Atropine 0.5 – 1mg IV, repeat every 5 minutes up to a max. dose of 0.04 mg/kg or 3mg.*
6. Apply external pacemaker. Set at a rate of 70 bpm and titrate energy level to capture. If patient is conscious and aware of situation, administer one of the following for patient comfort:
  - *Diazepam 5mg IV, may repeat once PRN for max. dose of 10mg, or*
  - *Midazolam 2mg IV, may repeat once PRN for max. dose of 4mg, or*
  - *Lorazepam 2mg IV, may repeat once PRN for max. dose of 4mg.*

7. If pacemaker is ineffective, administer:
  - *Dopamine 5-20 mcg/kg/min IV titrated to BP of 90 systolic, or*
  - *Epinephrine 2-10 mcg/min IV titrated to BP of 90 systolic, or*
  - *Isoproterenol 2-10 mcg/min IV titrated to BP of 90 systolic.*
8. Transport with lights and sirens to appropriate facility.

---

*Medical Director's Signature*

---

*Date*

Disclaimer:

The protocols have been developed by the North Dakota Department of Health are meant to be used as general guidance for developing protocols for individual emergency medical services agencies. These sample protocols are not meant to be medical or legal advice; nor do they establish standards of care. Each emergency medical services agency must tailor protocols based on their specific needs or capabilities. Local medical directors must be consulted with and approve any protocol(s) prior to becoming operational in an emergency medical services agency. The North Dakota Department of Health make no representation on the accuracy of information contained herein and accepts no liability for any loss or damage arising from any content error or omission.