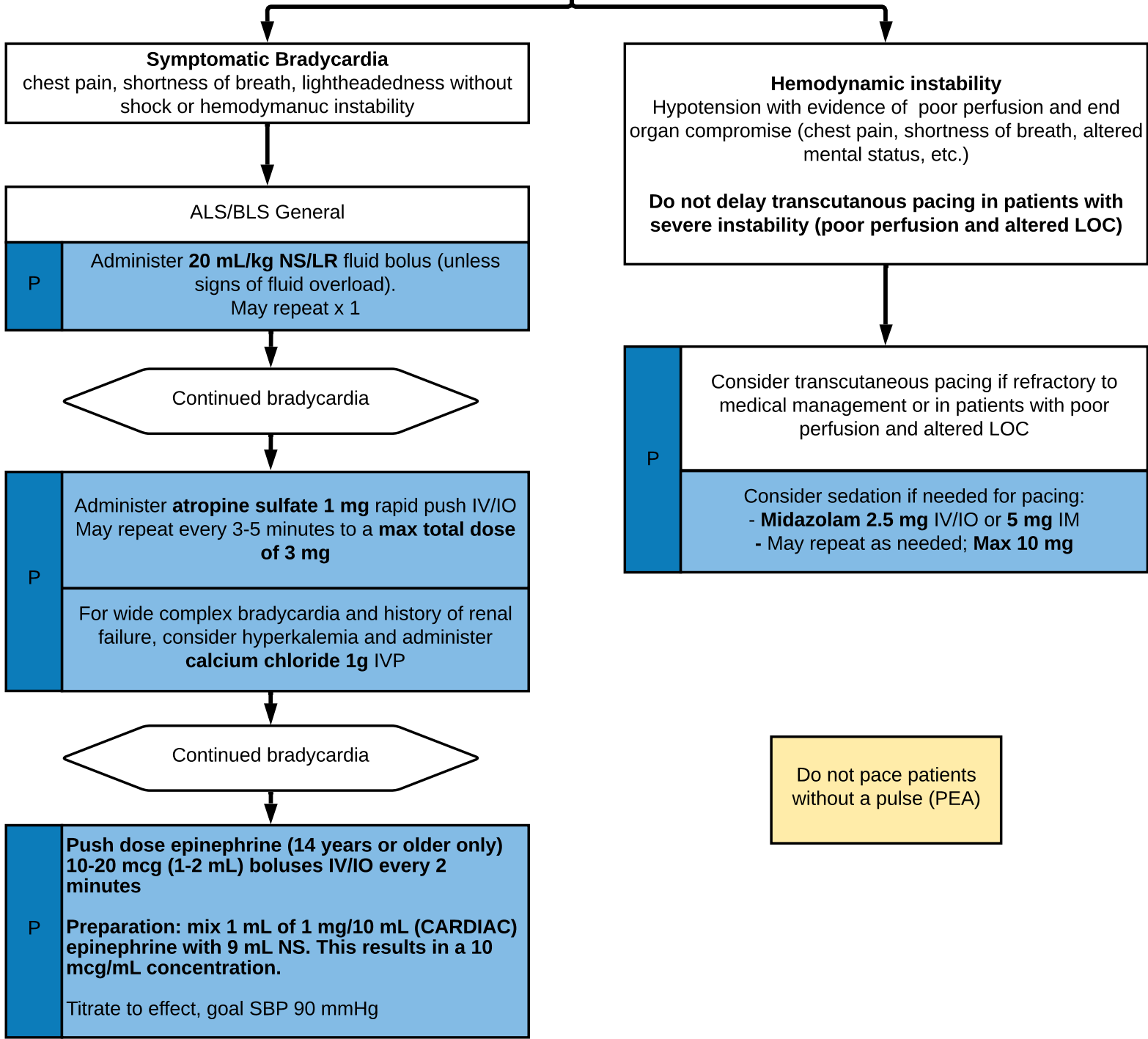
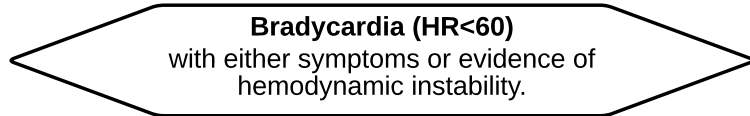


Adult Bradycardia Administrative Guideline (Age ≥ 14)



History	Signs and Symptoms	Differential
<ul style="list-style-type: none"> • Past medical history • Medications <ul style="list-style-type: none"> ◦ Beta-Blockers ◦ Calcium channel blockers ◦ Clonidine ◦ Digoxin • Pacemaker 	<ul style="list-style-type: none"> • Chest pain • Respiratory distress • Hypotension or Shock • Altered mental status • Syncope • Lightheadedness/Dizziness 	<ul style="list-style-type: none"> • Acute myocardial infarction • Hypoxia / Hypothermia • Pacemaker failure • Sinus bradycardia • Head injury (elevated ICP) or Stroke • Spinal cord lesion • Sick sinus syndrome • AV blocks (1°, 2°, or 3°) • Overdose





Education/Pearls

Bradycardia

- Rhythm should be interpreted in the context of symptoms and pharmacological treatment given **ONLY** when symptomatic; otherwise, closely monitor the patient and reassess.
- **Do not delay transcutaneous pacing for patients with evidence of severe hemodynamically instability, with poor perfusion, or altered mental status.**
- Bradycardia typically causes symptoms when at a rate of <50 beats/minute.
 - Bradycardia may present with altered mental status, chest pain, congestive heart failure, seizure, syncope, shock, pallor, diaphoresis, or other evidence of hemodynamic instability.
- Consider treatable causes for bradycardia
 - Common causes: electrolyte abnormalities (e.g. hyperkalemia), myocardial ischemia, medication overdose (see below for more details), infections, hypoxemia, and hypothyroidism
 - Consider hyperkalemia in patients with ECG evidence of wide complex bradycardic rhythms.
 - Hypoxemia is a common cause of bradycardia. Ensure oxygenation and support respiratory efforts.
- Atropine
 - **Do NOT delay Transcutaneous Pacing to administer atropine in bradycardia in patients with with poor perfusion.**
 - Caution when administering atropine in setting of:
 - Acute MI, as elevated heart rate can worsen ischemia.
 - Overdoses, as administration may cause worsening bradycardia in certain scenarios (such as alpha agonist overdose, like Clonidine).
 - Cardiac transplant patients, as it may cause paradoxical bradycardia.
- Transcutaneous Pacing Procedure (TCP)
 - Immediately use TCP in patients with evidence of poor perfusion or with high-degree AV block (2nd or 3rd degree) without IV/IO access.
 - If time allows, transport to a cardiac receiving center because transcutaneous pacing is a temporizing measure and patients may need to go to the cath lab for pacemaker placement.
 - Consider sedation or pain control for TCP
 - Use EtCO₂ for all patients receiving sedation
- Overdose
 - Bradycardia is seen in several medication overdoses, including beta blockers, calcium channel blockers, and alpha-2 agonists (clonidine)
 - In clonidine overdoses, avoid use of atropine in the setting of normotension, as atropine may cause reflex hypertension in this unique setting
- Once at the hospital, consider having one crewmember is monitoring the pacing until hospital pads are successfully placed on the patient.