

Base Hospital Contact: Required for all patients with symptomatic bradycardia.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))
Assess cardiac rhythm and obtain 12-lead ECG
4. If cardiac chest pain/STEMI suspected as cause of bradycardia, treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
5. Maintain supine for patients with signs of poor perfusion, if respiratory status allows
6. Establish vascular access ([MCG 1375](#))
Do not delay transcutaneous pacing (TCP) if indicated for vascular access
7. For suspected hyperkalemia ❶
Calcium Chloride 1gm (10mL) slow IV/IO push, may repeat x1 for persistent symptoms
Albuterol 5mg (6mL) via neb, repeat continuously until hospital arrival
CONTACT BASE to obtain order for **Sodium Bicarbonate 50mEq (50mL) slow IVP** ❷
8. For poor perfusion ([MCG 1355](#)):
Atropine 1mg (10mL) IV/IO push, repeat every 3-5 min prn, maximum total dose 3mg
If IV cannot be rapidly established or if HR \leq 40bpm in 2nd degree type II or 3rd degree heart block, proceed immediately to transcutaneous pacing ❸
If no improvement after initial dose of **Atropine**, proceed to TCP
9. **TCP** for HR \leq 40 with continued poor perfusion, initiate TCP as per [MCG 1365](#) ❹
CONTACT BASE concurrent with initiation of TCP

If TCP will be utilized for the awake patient, consider sedation and analgesia
For sedation:
Midazolam 5mg (1mL) slow IV/IO push or IM/IN
May repeat in 5 min prn x1, maximum total dose prior to Base contact 10mg
For pain management: refer to [MCG 1345, Pain Management](#)

CONTACT BASE for additional sedation and/or pain management after maximum dose administered: May repeat as above to a maximum dose of Midazolam 20 mg, and Fentanyl 250mcg or Morphine 20mg
10. For signs of poor perfusion with HR > 40:
CONTACT BASE to discuss appropriateness of TCP
11. For persistent poor perfusion after initiating TCP:
CONTACT BASE to obtain order for **Normal Saline 1L IV/IO rapid infusion** and/or **Push-dose Epinephrine**

Treatment Protocol: CARDIAC DYSRHYTHMIA - BRADYCARDIA

Ref. No. 1212

While infusing **Normal Saline**, reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops

Push-dose Epinephrine – mix 9mL Normal Saline with 1mL Epinephrine 0.1mg/mL (IV formulation) in a 10mL syringe. Administer **Push-dose Epinephrine (0.01mg/mL) 1mL IV/IO** every 1-5 min as needed to maintain SBP > 90mmHg ⑤

12. For suspected overdose, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#) ⑥

13. For nausea or vomiting:

Ondansetron 4mg ODT/IV/IM, may repeat x1 in 15 min prn ⑦

SPECIAL CONSIDERATIONS

- ❶ Patients at increased risk for hyperkalemia include those with history or clinical evidence of renal failure, missed dialysis or patients taking potassium-sparing diuretics such as spironolactone. ECG signs of hyperkalemia included peaked T-waves, wide QRS, bradycardia, long PR interval and absent P-waves.
- ❷ Sodium Bicarbonate is another rapid-acting treatment for suspected hyperkalemia. Due to the risk of pulmonary edema, contact Base to discuss administration.
- ❸ In patients with 2nd degree type II or 3rd degree heart block, atropine is unlikely to produce clinical improvement, therefore TCP should not be delayed for atropine administration.
- ❹ Electrical capture can occur without mechanical capture. Assess for electrical capture by reviewing the rhythm strip for a QRS complex and a T wave after each pacer spike. Assess for mechanical capture by palpating a pulse with each QRS complex.
- ❺ **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports.
- ❻ Consider calcium channel blocker and beta blocker overdose in patients with bradycardia and hypotension. Ask about potential exposures including medications in the home. Hyperglycemia is a common finding with calcium channel blocker overdose.
- ❼ Nausea and vomiting cause vagal stimulation, which can worsen bradycardia. Ondansetron may be administered to reduce potential for nausea or vomiting.