MERCED COUNTY EMS AGENCY

# POLICY ADULT C3 BRADYCARDIA

Effective Date: July 15,2022
Last Review: New Policy
Next Review: July 2024

**Authority:** Health and Safety Code, Division 2.5, California Code of Regulations, Title 22, Division 9

**DEFINITION:** Symptomatic bradycardia is defined by the following

- Heart rate below 60/beats per minute
- Systolic Blood Pressure (SBP) below 90 mmHg
- Associated signs and symptoms including ALOC, signs of shock, chest pain, acute pulmonary edema, syncope, extreme weakness
- The following medications may cause symptomatic bradycardia, beta blocker, calcium channel blockers, digoxin, organophosphates and amiodarone.

## BLS TREATMENT:

**OXYGEN:** As appropriate, goal to maintain $SpO_2$ at least 94%. Assist ventilations as necessary.
**VITALS:** Assess vital signs.
**BLOOD SUGAR CHECK:** For patients who have ALOC, treat low blood sugar per **Policy Adult M5 ALOC – Syncope.**

## ALS TREATMENT:

**MONITOR:** Perform a 12-Lead ECG within 10 minutes of patient contact. If the 12-Lead ECG reads **STEMI** or **Acute MI** or an equivalent; transmit the 12-Lead ECG to appropriate STEMI Receiving Center.
**VASCULAR ACCESS:** IV/IO rate as appropriate, if patient has a systolic BP < 90 mmHg administer 250 ml fluid boluses to systolic BP > 90 mmHg. Reassess patient after each bolus assessing for signs of fluid overload.
**CAPNOGRAPHY:** Utilize waveform capnography; $EtCO_2$ readings of 25 mmHg or less are suggestive of poor organ perfusion.
**ATROPINE:** 0.5 mg IV/IO may repeat every 3-5 minutes to a maximum total dose of 3 mg. Atropine should not be used for patients in wide complex bradycardias or 2$^{nd}$ or 3$^{rd}$ degree heart blocks. If no improvement in patient condition, consider transcutaneous pacing.
**TRANSCUTANEOUS PACING (TCP):** For symptomatic patients with 2$^{nd}$ or 3$^{rd}$ degree heart blocks or wide complex bradycardias, utilize TCP over Atropine. Initial TCP settings – do not delay TCP if patient is severely symptomatic or difficulty establishing IV/IO access.

- Set rate at 60 beats/minute, increase rate by 10/beats per minute as needed to a maximum of 80 beats/minute
- Initiate TCP and increase current in 10 mA increments until mechanical capture with pulses are noted
- Once mechanical capture is confirmed, adjust current output up to 5-10 mA

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- Patients that need sedation or pain control to tolerate TCP consider using one of the following
  - Midazolam 2-5 mg IV/IO **OR**
  - Morphine 2-5 mg IV/IO **OR**
  - Fentanyl 20 to 50 mcg IV/IO
  - May repeat once after 5 minutes
  - Fentanyl or Morphine is preferred for patients with chest pain or suspected STEMI's

**IF THE PATIENTS CONDITION DOES NOT IMPROVE CONSIDER USING** PUSH DOSE **EPINEPHERINE** – 10 mcg (1ml) slow IV/IO push every 1-5 minutes for systolic BP less than 90 mmHg and patient is not responding to previous treatment.

PUSH DOSE **EPINEPHERINE SOLUTION MIXING INSTRUCTIONS**

- Epinephrine 1:10,000 concentration (1 mg/10 ml) and waste 9 ml of Epinephrine
- In same syringe draw 9 ml of normal saline and shake well
- Mixture provides 10 ml of Epinephrine at 10mcg/ml (0.01 mg/ml) concentration
- Label syringe Epi 10mcg/ml