BRADYCARDIA (Symptomatic)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
  - Assess for signs of poor perfusion, hypotension or other signs of shock, altered mental status, chest pain, or acute heart failure.
  - Obtain a blood glucose level.
- ❑ Continuous ECG, ETCO2, 12 lead ECG, and pulse oximetry monitoring, blood pressure, when available
- ❑ **Treatment Plan**
  - Only treat bradycardia **IF** the patient is unstable (hypotension or signs of poor perfusion).
  - If patient is a newborn, follow the ***Newborn Resuscitation Guideline***.
  - Identify and treat the underlying cause, if possible. Potential causes include:
    - Hypoxia
    - Shock
    - 2nd or 3rd degree heart block
    - Toxin exposure (beta-blocker, calcium channel blocker, organophosphate, digoxin)
    - Electrolyte disorder (hyperkalemia)
    - Increased intracranial pressure (ICP)
    - Hypothermia
    - Acute MI
    - Pacemaker failure
  - Maintain airway - assist with breathing, and provide oxygen as necessary
  - Ensure patient warmth.
- ❑ **Pediatric patient** (<8-year-old)
  - Aggressive oxygenation with high flow oxygen and assisted ventilations with a BVM, as indicated.
  - Persistent heart rate <60/min and signs of poor perfusion following aggressive oxygenation and ventilation: **begin chest compressions**
- ❑ **Key Considerations**
  - In pregnant patients of >20 weeks' gestation: place wedge-shaped cushion or multiple pillows under patient's right hip to displace uterus to the left, off of the vena cava.
  - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

AEMT

- ❑ Vascular access and fluid therapy.
- ❑ **Atropine 0.5 mg** IV/IO
  - Repeat as needed every 3 minutes
  - Maximum total dose of 3 mg
- ✆ **Epinephrine 0.1 mg** IV/IO push
  - Repeat as needed every 3-5 min

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Vascular access and fluid therapy.
- ❑ **Epinephrine** 0.01 mg/kg IV/IO
  - Repeat as needed every 3 minutes
  - Maximum total dose of 1 mg
- ❑ **If indicated, consider Atropine** 0.02 mg/kg IV/IO
  - Maximum single dose of 0.5 mg
  - Repeat Atropine every 3-5 minutes as needed until Max 1 mg for child and 2 mg for adolescents.

PARAMEDIC

SYMPTOMATIC BRADYCARDIA

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80 beats per minute if the patient does not respond to medications. Ensure mechanical and electrical capture.
- ❑ Consider Procedural related anxiety management (refer to the **Pain/Anxiety Management Protocol**)
- ❑ **Push Dose Epinephrine 10mcg** as needed to maintain a SBP >100 mmHg after fluid bolus
- ❑ **Epinephrine 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg
- ❑ **Norepinephrine** initial dose: **0.05 – 1 mcg/kg/min** IV/IO for hypoperfusion. Titrate to maintain a SBP > 100 mmHg. For patients in refractory shock: 8-30 mcg/minute
- ✆ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**.

PARAMEDIC

SYMPTOMATIC BRADYCARDIA

- ✆ **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute, if the patient does not respond to medications. Ensure mechanical and electrical capture.
- ✆ Consider Procedural related anxiety management (refer to the **Pain/Anxiety Management Protocol**)
- ✆ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**
- ✆ **Epinephrine 0.1–1 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg
- ✆ Push Dose Epinephrine IV (dose per appendix) as needed to maintain a SBP>70 + (age in years x 2) mmHg after fluid bolus