BRADYCARDIA (Symptomatic)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
  - Assess for signs of poor perfusion, hypotension, altered mental status, signs of shock, chest pain, or acute heart failure.
  - Obtain a blood glucose level.
- ❑ Continuous ECG, CO2, 12 lead ECG, and pulse oximetry monitoring, 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:
    - 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 as necessary, provide oxygen
- ▪ **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.
  - Ensure patient warmth.
- **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.
  - As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.
  - 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

PEDIATRIC (<15 years of Age)

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

ADULT AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***
- ❑ **Atropine 0.5 mg** IV/IO
  - Repeat as needed every 3 minutes
  - Maximum total dose of 3mg

PEDIATRIC AEMT

- ❑ Supportive care of airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy guidelines***
- ❑ **Atropine 0.02 mg/kg** IV/IO
  - Minimum single dose of 0.1 mg
  - Maximum single dose of 0.5mg
  - Repeat Atropine every 3-5 minutes as needed until Max 1mg for child and 2mg for adolescents.
- ❑ **Epinephrine: 0.01 mg/kg = 0.1 ml/kg (0.1 mg/ml/1:10,000)** IV/IO
  - Repeat every 3-5 minutes

ADULT PARAMEDIC

SYMPTOMATIC BRADYCARDIA

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80

PEDIATRIC PARAMEDIC

IF BRADYCARDIA IS SEVERE WITH SIGNS OF POOR PERFUSION

beats per minute if the patient does not respond to medications

- ❑ Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***
- ❑ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**.
- ❑ **Epinephrine 2–10 mcg/min** IV/IO infusion for persistent hypoperfusion. Titrate to maintain a SBP >100 mmHg. **And/or**
- ❑ **Norepinephrine initial dose: 0.5-1 mcg/minute** IV/IO titrated to effect. For patients in refractory shock: 8-30mcg/min

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute, if the patient does not respond to medications
- ❑ Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***
- ❑ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**
- ❑ **Epinephrine 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg