



# Montgomery County Fire and Rescue Service

## Division of Operations

### Emergency Medical and Integrated Healthcare Services

#### *Office of Medical Oversight Clinical Practice Guideline*

#### ***Vasopressor Infusions CPG***

#### ***Attachment A: Epinephrine***

Epinephrine is a versatile and effective medication for various indications as it is a non-specific catecholamine with large Beta-1 (cardiac output), Beta-2 (bronchodilation), and moderate Alpha-1 (vasoconstriction) effects. It is particularly effective in the treatment of anaphylaxis, bradycardia, and it is indicated for pediatric shock patients.

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#### ***Indication: Adult Anaphylactic Shock***

**Patient Population:** Patients 18 years and older or 50 kg bodyweight or greater

**Goals of therapy (consistent with guidelines in the Maryland Medical Protocol Allergic Reaction: Anaphylaxis-Adult):**

To maintain a SBP between 90-140 or MAP between 65-90 mmHg

#### **General Procedure:**

1. Reconstitute 1 mg epinephrine 1:1,000 concentration into 100 mL of diluent.
  2. The infusion must be administered via IV pump through the largest and most proximal IV/IO access available (IV preferred).
  3. Initiate the infusion at 10 mcg/min.
  4. Repeat blood pressures every 2 minutes and titrate the infusion rate in 10 mcg/min increments based on these criteria:
    - a. If SBP/MAP is lower than the goal, increase by 10 mcg/min.
    - b. If SBP/MAP meets the goal, maintain the infusion rate.
    - c. If SBP/MAP is above the goal, decrease by 10 mcg/min.
  5. The minimum dose is 10 mcg/min.
  6. The maximum dose is 50 mcg/min.
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#### ***Indication: Adult Bradycardia***

**Patient Population:** Patients 18 years and older

**Goals of therapy (consistent with guidelines in the Maryland Medical Protocol Adult Bradycardia Algorithm):**

To maintain a pulse between 60-100 beats per minute



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#### **General Procedure:**

1. Reconstitute 1 mg epinephrine 1:1,000 concentration into 100 mL of diluent.
2. Place the patient on continuous ECG monitoring and consider placement of defibrillator pads.
3. The infusion must be administered via IV pump through the largest and most proximal IV/IO access available (IV preferred).
4. Initiate the infusion at 2 mcg/min.
5. Monitor the heart rate using ECG and manual palpation every 2 minutes.
  - a. If the rate is below 60 bpm, increase by 2 mcg/min.
  - b. If the rate is between 60-100 bpm, maintain the infusion rate.
  - c. If the rate is above 100 bpm, decrease by 2 mcg/min.
6. The minimum dose is 2 mcg/min.
7. The maximum dose is 10 mcg/min.

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#### ***Indication: Pediatric shock***

**Patient Population:** Patients under 18 years old and <50 kg. For patients under 18 and >50 kg use adult dosing starting at 10 mcg/min.

**Goals of therapy (consistent with guidelines in the Maryland Medical Protocol Shock: Hypoperfusion-Pediatric):**

- Patients Under 10 years of age: SBP  $70 + (2 \times \text{Age})$  to  $120 + (2 \times \text{Age})$  **OR** SBP order by pediatric base station
- Patients 10-17 years of age: SBP 90-140 mmHg

#### **General Procedure:**

1. Reconstitute 1 mg epinephrine 1:1,000 concentration into 100 mL of diluent.
2. The infusion must be administered via IV pump through the largest and most proximal IV/IO access available (IV preferred).
3. Initiate the infusion at 0.1 mcg/kg/min.
4. Repeat blood pressures every 2 minutes and titrate the infusion rate in 0.1 mcg/kg/min increments based on these criteria:
  - a. If SBP is lower than the goal, increase by 0.1 mcg/kg/min.
  - b. If SBP meets the goal, maintain the infusion rate.
  - c. If SBP is above the goal, decrease by 0.1 mcg/kg/min.
5. The minimum dose is 0.1 mcg/kg/min.
6. The maximum dose is 0.5 mcg/kg/min.