



**El Dorado County Emergency Medical
Services Agency**
Quick Reference

Revised: March 2025

Medication Profile

Epinephrine (Adrenalin)

Class:

Natural Catecholamine/Sympathomimetic

Action:

Potent catecholamine with Alpha and Beta effects; Epinephrine causes vasoconstriction in the arterioles of the skin, mucosa, and splanchnic areas, and antagonizes the effects of histamine.

Alpha Effects:

Increased respiratory tidal volume and vital capacity by vasoconstriction of arterioles in lungs (\downarrow edema)

Vasoconstriction in skin, kidneys, stomach, intestines, liver and pancreas

Beta Effects:

Increased heart rate, force of contraction, AV-node conduction, spontaneous contraction, cardiac output, tidal volume, coronary blood flow, O₂ consumption, myocardial irritability.

Bronchodilation

Vasodilation of circulation to heart and skeletal muscle

Onset: IV/IO Immediate
SQ/IM 5-10 minutes

Peak: IV/IO < 5minutes
IM 30 minutes

Duration: Varies

Indications:

- Cardiopulmonary arrest: VFIB/Pulseless VT, Asystole, PEA
- Allergic reaction/ anaphylaxis
- Asthma
- Refractory pediatric bradycardia, unresponsive to O₂ and ventilation
- Stridor (croup, airway burns, laryngeal edema)

Contraindications:

- Hypertension

Adult Administration:

Pulseless Arrest	1mg (1:10,000) IV/IO, repeat every 3-5 minutes if patient remains pulseless.
Bronchospasm	0.5mg (1:1,000) IM. May repeat every ten minutes. <i>Base order unless pt is in extremis.</i>
Allergic Reaction	0.5mg (1:1,000) IM. May repeat every ten minutes if no improvement.
ROSC/Shock/Sepsis/ Allergic Reaction	2 mL, 1:100,000 slow IVP, every 2-5 min, titrated to effect. See <i>EPINEPHRINE DILUTION procedure.</i>
Stridor (croup, airway burns, laryngeal edema)	5mg (5mL, 1:1000) Nebulized over 5 minutes. <i>In addition to any IM doses that may otherwise be indicated.</i>
Auto Injector	0.3mg (0.3mL, 1:1,000) IM. Lateral thigh preferred. May repeat in 10 minutes if ALS response is delayed and condition worsens.

Pediatric Administration:

Pulseless Arrest	0.01mg/kg (0.1mL/kg, 1:10,000) IV/IO. Repeat every 3-5 min if patient remains pulseless
Bronchospasm	0.01mg/kg (1:1,000) IM. Max 0.3mg, May repeat x1 in 10 minutes. <i>Base order unless pt is in extremis.</i>
Bradycardia	0.01mg/kg IV/IO (1:10,000, 0.1mL/kg) Repeat dose every 3-5 minutes.
Allergic Reaction	0.01mg/kg IM (1:1,000, Max 0.5mg) May repeat every 10 minutes x2 as needed. Mid-anterolateral thigh preferred.
ROSC/Shock/Sepsis/ Allergic Reaction	<20kg = 0.1 mL/kg, 1:100,000 slow IVP, every 2-5 min, titrated to effect. >20kg = 2mL, 1:100,000 slow IVP, every 2-5 min, titrated to effect. <i>See EPINEPHRINE DILUTION procedure.</i>
Stridor (croup, airway burns, laryngeal edema)	0.5mL/kg (not to exceed 5mL) 1:1000 Nebulized Epinephrine. <ul style="list-style-type: none">• Dilute with NS to 5mL to allow for nebulization.• Repeat q 10 minutes until stridor subsides.• This should be in addition to IM epinephrine
Auto Injector	0.15mg (0.3mL, 1:2,000) IM (Lateral thigh preferred). May repeat in 10 minutes if ALS response is delayed and condition worsens.

This document is not a substitute for Protocols and Procedures.

Effective Date: September 1, 2020

Page 2 of 2

Side Effects:

CV: Tachycardia, palpitations, chest pain, hypertension, V-tach/V-fib

CNS: Headache, tremors, anxiety, dizziness, restlessness, convulsions

GI: Nausea, vomiting, anorexia, cramps

Skin: Pallor, flushing, sweating, painful blanching at SQ injection site

Pregnancy:

Category C

Notes:

- Use caution in patients with cardiac ventricular dysrhythmias, pregnancy, severe hypertension, coronary artery disease, tachy-dysrhythmias, hypovolemic shock, chest pain of cardiac origin, or greater than 70-years old.
- When delivering as a push-dose, anticipate adjusting speed of each administration, as well as the interval between doses. This is due to the quick onset and short duration of epinephrine.