



Jackson Hole Fire/EMS Operations Manual

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Title: **Medication Protocol:
Epinephrine Drip**
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EPINEPHRINE Drip (Medication Protocol)

PARAMEDIC

STANDING ORDER – Consider early Medical Control contact for decision making

CLASS: Sympathetic agonist (sympathomimetic)

PHARMACOLOGY/ ACTIONS: Epinephrine acts directly on α - and β -adrenergic receptors. Its effect on β -receptors is much more profound than its effect on α -receptors.

- β_1 effects include: \uparrow HR, \uparrow cardiac contractile force, \uparrow electrical activity in the myocardium, \uparrow systemic vascular resistances, \uparrow BP, \uparrow automaticity.
- β_2 effects include bronchial smooth muscle dilation and inhibition of mucous secretion.
- Alpha effects include bronchiole arteriole constriction, histamine suppression, arteriole constriction in skin, mucous membranes, and kidneys; arteriole dilation in skeletal muscle.

Action is through a natural hormonal mechanism.

ONSET/DURATION: Rapid onset (< 1 min.), Short duration (half-life < 2 mins.; near immediate clearance from blood stream following IV administration)

USE IN FIELD/ INDICATIONS:

- Anaphylaxis/Allergic Reaction
- Peri-arrest with profound hypotension and/or bradycardia
- Severe Asthma
- Temporizing sympathomimetic for patients *in extremis*

CONTRAINDICATIONS: Hypovolemic shock, severe hypertension,
Relative: coronary artery disease, pregnancy, severe tachydysrhythmias, PVC's, hyperthyroidism, cerebrovascular insufficiency.

SIDE EFFECTS: Tachycardia including V-Tach & V-Fib, palpitation, anxiety, tremor, headache, nausea, weakness, restlessness, hypertension

DRUG INTERACTIONS: MAO inhibitors/ antidepressants may potentiate effects.
 β -adrenergic antagonists may blunt inotropic response.
Sympathomimetics and phosphodiesterase inhibitors may exacerbate dysrhythmia response

ROUTE: IV/IO drip

**PREPARATION
OPTIONS:**

- 1) **IV pump** (ideal administration route)
 - Mix **1 ml 1:1,000 epinephrine in 250 mL** of D₅W or NS.
 - **Concentration equals 4 mcg/ml.**
- 2) **Manual IV “Quick” Drip** (10 gtts/ml set) -to expedite administration if IV pump not immediately available and patient is in extremis.
 - Mix **1 ml 1:1,000 or 10ml 1:10,000 epinephrine in 1-liter bag** of normal saline.
 - **Concentration equals 1 mcg/ml.**
 - Transition to IV pump as soon as feasible, which will require a separate preparation of the IV pump concentration.

DOSAGE:

ADULT	PEDIATRIC (<45 kg)
2-10 mcg/min	0.1-1.0 mcg/kg/min (not to exceed adult dosage)

Titrate to maintain SBP > 90 mm/Hg or other indications of response such as mental status.

PREGNANCY SAFETY: Category C – give only if potential benefits justifies risk to fetus

COMMENTS: Be extremely cautious with dosage calculations and administration. CAUTION in peripheral vascular insufficiency & >50 yo due to cardiovascular stress.

