

HEALTHEAST MEDICAL TRANSPORTATION
MEDICAL OPERATIONS MANUAL

1:1,000 EPINEPHRINE (ADRENALINE)

Drug Classification: Adrenergic agent

BACKGROUND

Pharmacodynamics

Epinephrine binds strongly with alpha and beta-receptors, producing increased blood pressure, increased heart rate, and bronchodilation.

Indications

- Anaphylaxis with evidence of severe respiratory distress, increased heart rate, hives, and/or decreased blood pressure.
- PEA/Asystole
- ROSC

Contraindications

- None in the emergency setting

Cautions

- Use with caution in patients with cardiovascular disease, hypertension, closed-angle glaucoma, or diabetes.

DOSAGE and ADMINISTRATION

ADULT	PEDIATRICS (less than 60 kg)
<p><u>Anaphylaxis</u></p> <ol style="list-style-type: none">1. Administer 0.3 mg 1:1000 Epinephrine IM.¹ May repeat every 5 minutes as needed.2. For anaphylactic shock (unresponsive to fluids and 1:1,000 epinephrine (Adrenalin) IM), begin an epinephrine (Adrenalin) infusion at 0.1 mcg/kg/min titrating to a maximum dose of 0.5 mcg/kg/min². Titrate to keep MAP greater than 65 mmHg. <p><u>PEA/Asystole Arrest</u></p> <ol style="list-style-type: none">1. Begin administering an epinephrine infusion at 0.5 mcg/kg/min (approximately 100 gtts/min with 60 gtts/ml tubing).	<p><u>Anaphylaxis</u></p> <ol style="list-style-type: none">1. Administer 0.01 mg/kg IM (max single dose 0.3 mg).¹ May repeat every 5 minutes as needed.2. For anaphylactic shock (unresponsive to fluids and 1:1,000 epinephrine (Adrenalin) IM), begin an epinephrine (Adrenalin) infusion at 0.1 mcg/kg/min titrating to a maximum dose of 0.5 mcg/kg/min². Titrate to systolic blood pressure of 100 mmHg. <p><u>PEA/Asystole Arrest</u></p> <ol style="list-style-type: none">1. DO NOT USE 1:1,000 IV IN PEDIATRIC ARRESTS

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ADULT	PEDIATRICS (less than 60 kg)
<p><u>ROSC from PEA/Asystole</u></p> <p>1. Administer an infusion of 1:1,000 epinephrine (Adrenalin) at 0.1-0.5 mcg/kg/min. Titrate to systolic blood pressure of 100 mmHg. See chart on page 3.</p>	<p><u>ROSC from PEA/Asystole</u></p> <p>1. Administer an infusion of 1:1,000 epinephrine (Adrenalin) at 0.1-0.5 mcg/kg/min. Titrate to systolic blood pressure of 100 mmHg. See chart on page 3.</p>

ADVERSE REACTIONS/SIDE EFFECTS

- Anxiety, headache, cardiac arrhythmias, hypertension, tremors, chest pain, nausea, vomiting

NOTES

- ¹ **1:1,000 epinephrine (Adrenalin)** should never be administered undiluted via any route other than IM. This concentration can be diluted into **Epinephrine (Adrenalin) 1:10,000** by expelling 1 mL of fluid out of a 10 mL saline flush and drawing 1 mg (1 mL) **1:1,000 epinephrine (Adrenalin)** into the flush. Mix thoroughly prior to administration.
- ² Epinephrine (Adrenalin) infusion for anaphylaxis consists of 5 mg (5 ml) of **1:1000 epinephrine (Adrenalin)** mixed in 250 ml of NS or D5W.
- ³ **Epinephrine (Adrenalin)** infusion for PEA/Asystole cardiac arrest consists of 20 mg (20 ml) of **1:1000 epinephrine (Adrenalin)** mixed in 1 liter NS.

REFERENCE GUIDELINE:

2D PEA/Asystole

5A Allergic Reaction/Anaphylaxis

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EPINEPHRINE					
Anaphylaxis/PEA Arrest/PEA ROSC					
5 mg of 1:1000 in 250 mL NS OR D5W OR 20mg of 1:1000 in 1 liter NS (60 microdrip tubing)					
Dosage mcg/kg/min	0.1	0.2	0.3	0.4	0.5
Body weight	FLOW RATE IN DROPS/MIN				
22 lbs/10 kg	3	6	9	12	15
33 lbs/15 kg	4	8	12	16	20
44 lbs/20 kg	6	12	18	24	30
55 lbs/25 kg	7	14	21	28	35
66 lbs/30 kg	9	18	27	36	45
77 lbs/35 kg	10	20	30	40	50
88 lbs/40 kg	12	24	36	48	60
99 lbs/45 kg	13	26	39	52	65
110 lbs/50 kg	15	30	45	60	75
121 lbs/55 kg	16	32	48	64	80
132 lbs/60 kg	18	36	54	72	90
143 lbs/65 kg	19	38	57	76	95
154 lbs/70 kg	21	42	63	84	105
165 lbs/75 kg	22	42	64	86	108
176 lbs/80 kg	24	48	72	96	120
187 lbs/85 kg	25	50	75	100	125
198 lbs/90 kg	27	54	81	108	135
209 lbs/95 kg	28	56	84	112	140
220 lbs/100 kg	30	60	90	120	150