





Epinephrine for Hypotension (Push-Dose Epinephrine)		6091G
Effective 7/1/2025	Expires 6/30/2028	
Low Frequency Epinephrine for Hypotension	Approval: Medical Director John Beuerle, MD	Signed 
Applies To: Paramedics	Approval: EMS Director Teresa Rios	Signed 

Performance Objective

Administration of the appropriate dose of epinephrine IV/IO for hypotension.

Before administering epinephrine for hypotension, paramedics must:

1. Verify the presence of hypotension.
2. Attempt other methods of treating hypotension appropriate to the patient's condition.
3. Establish patent IV/IO access.

While administering epinephrine for hypotension, paramedics must:

1. Ensure patent IV or IO access.
2. Open a preloaded ampule of 1:10,000 epinephrine (1 mg of epinephrine in a preloaded 10-mL ampule). Remove the yellow plastic cap from the ampule. Do not attach the ampule to the Luer-Jet syringe that comes in the pre-packaged box.
3. Using an empty 10-mL syringe with an attached 18-gauge needle, insert the needle through the blue stopper of the 1:10,000 epinephrine ampule and draw up 1 mL of 1:10,000 epinephrine from the preloaded ampule.
4. Using the same 10-mL syringe (which now contains 1 mL of 1:10,000 epinephrine), draw up 9 ml of Normal Saline from a bag of Normal Saline. (Do not inject the epinephrine into the bag of Normal Saline.)
5. Mix the epinephrine and Normal Saline by vigorously shaking the syringe.
6. Attach a label to the syringe, identifying the contents as: "Epinephrine (10 mcg/mL)".
7. Using the labeled syringe containing dilute epinephrine (10 mcg/mL concentration), administer 0.5-1 mL (5-10 mcg) IV/IO every 2-5 minutes as needed to maintain a systolic BP \geq 90 mmHg.
8. Document the time and dosage of each administration of epinephrine.
9. Re-check and document the patient's BP every 2-3 minutes.

Critical Success Targets for administration of epinephrine for hypotension:

1. Prepare the correct concentration of epinephrine (10 mcg/mL).
2. Timely administration of epinephrine at the appropriate place in the sequence of patient care activities.

System Benchmark

Administration of the appropriate concentration of epinephrine at the appropriate place in the sequence of treatments for patients with persistent hypotension.

Core Competency Requirements to be covered during education/training on Epinephrine for Hypotension:

1. Identify patient conditions for which epinephrine for hypotension is appropriate.
2. Demonstrate an understanding of protocols that include epinephrine for persistent hypotension.
3. List conditions for which a Base Hospital physician order is required to administer epinephrine for persistent hypotension.
4. Identify the appropriate concentration of epinephrine to use in the preparation of dilute push-dose epinephrine.
5. Demonstrate the ability to assess a patient for persistent hypotension.
6. Accurately verbalize and demonstrate the correct technique for preparing and administering dilute epinephrine (10 mcg/mL).
7. Identify patient assessments (blood pressure, mental status, skin changes, symptom improvement, etc.) that can be performed to determine whether dilute push-dose epinephrine administration has been effective or requires additional dosing.
8. Correctly identify frequency of post-administration BP monitoring.
9. Recognize complications (overdose, extravasation, hypertension, dysrhythmia, cardiac arrest).
10. Team leadership and patient safety
11. Documentation

Equipment Requirements

1. Personal protective equipment
2. IV NS bag
3. Epinephrine pre-load 1 mg in 1:10:000 preparation
4. 10 mL syringe
5. 18 gauge needle
6. Cardiac monitor

Instructor Resource Materials

1. Monterey County EMS Policy #4513 Epinephrine for Hypotension
2. Monterey County EMS Protocol C-5 Symptomatic Bradycardia
3. Monterey County EMS Protocol C-7 ROSC
4. Monterey County EMS Protocol E-2 Allergic Reaction/Anaphylaxis
5. Monterey County EMS Protocol M-4 Sepsis (Use of epinephrine requires base physician order)
6. Monterey County EMS Protocol EP-2 Allergic Reaction/Anaphylaxis-Pediatric
7. Monterey County EMS Protocol R-2 Pulmonary Edema

Epinephrine for hypotension (Push-dose epi)

Successful (y/n)	Performance Steps	Additional Information
	Take or verbalize appropriate body substance isolation precautions	Selection: gloves, goggles, mask, gown, booties, P100 PRN
	Determine other measures to maintain a systolic BP of ≥ 90 mmHg are not adequate (IV or IO established)	A patent IV/IO is in place. Fluid bolus of NS 500 mL attempted as appropriate for patient's condition. Heart rate correction attempted as appropriate.
	Initiates base physician contact for order to administer epinephrine for persistent hypotension when the patient's condition is not included in a protocol allowing the use of epinephrine for hypotension.	Hypotension with a likely cause of sepsis requires base physician order.
	Correctly assemble all supplies needed to mix and administer epinephrine.	Epinephrine 1:10,000 pre-load ampule, 10 mL syringe with 18 gauge needle
	Epinephrine 1 mL of 1:10,000 solution drawn up into a 10 mL syringe	Epinephrine 1 mL of 1:10,000 solution is created.

	9 mL Normal Saline drawn up into the syringe and mixed.	Epinephrine is not injected into the IV bag of normal saline.
	Syringe with epinephrine 10 mcg/mL labeled correctly.	
	Epinephrine 0.5-1 mL of 10 mcg/mL administered	
	Blood pressure measurement obtained	
	Additional doses of epinephrine 0.5-1 mL of 10 mcg/mL administered every 2-5 minutes as indicated for continued hypotension	Epinephrine not administered until blood pressure measurement is obtained
	Patient's blood pressure is monitored between each dose of epinephrine 0.5-1 mL of 10 mcg/mL	Patient's systolic BP is less than 90 mmHg prior to administering epinephrine
	Each dose of epinephrine is recorded on the PCR	
	The patient's BP is recorded on the PCR for the BP prior to administration of epinephrine, between each dose, and prior to transfer of patient care to the ED.	

Critical Failure Criteria

- Failure to take or verbalize BSI appropriate to the skill prior to performing the skill**
- Failure to correctly mix the epinephrine to a 10 mcg/mL concentration**
- Failure to prevent injection of epinephrine into the IV NS bag**
- Failure to provide care in mixing the epinephrine that puts others at risk of needlestick injury**
- Failure to label syringe properly immediately after creating dilute epinephrine (10 mcg/mL)**
- Failure to document all doses of epinephrine**
- Failure to monitor the patient's BP as required**
- Failure to make Base Hospital contact when administering epinephrine for conditions not approved by protocol**
- Any procedure that would have harmed the patient**