

EL DORADO COUNTY EMS AGENCY

FIELD PROCEDURES

Effective: January 2022

(Signature on file)

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Scope: ALS

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EPINEPHRINE DILUTION (1:10,000 and 'Push Dose' 1:100,000)

PURPOSE:

Provide instructions for dilution of Epinephrine in the field to address supply shortages of pre-mixed epinephrine 1:10,000 and clarify the method for preparation of 'push dose' epinephrine 1:100,000.

INDICATIONS:

Adult and pediatric patients with indications for the administration of intravenous Epinephrine.

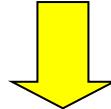
CONSIDERATIONS:

- When adjusting concentrations, ensure the 'Five Rights' (the right patient, the right drug, the right dose, the right route, and the right time).
- Since supplies may change, providers should understand the underlying principle of dilution and be confident in their ability to prepare both Epi 1:10,000 (100mcg/mL) and Epi 1:100,000 (10mcg/mL) safely and accurately.
- 'Push-dose' epinephrine is always titrated to effect. Providers should anticipate incremental adjustments to the listed doses

PROCEDURE – PREPARING EPINEPHRINE 1:10,000:

1. Attach needle or blunt needleless tip to an empty 10cc syringe;

When drawing Epi 1:1000 from an ampule	When drawing Epi 1:1000 from a vial
Using aseptic technique and controlling for broken glass, open the ampule and hold at approx. 45 degrees;	Remove the cap and swab the top of the vial with alcohol;



2. Introduce the filter needle/blunt tip to the ampule/vial and draw up 1ml of epinephrine 1:1000;
3. On a bag or bottle of Sodium Chloride 0.9% injection solution (NaCl), swab the injection port with alcohol;
4. Introduce the needle/blunt tip and draw 9ml NaCl into the syringe containing epinephrine 1:1000 to create 10ml of epinephrine 1:10,000.
5. Label the syringe "**Epinephrine 1:10,000**" and control any sharps;

6. Administer Epinephrine 1:10,000 per protocol.

PROCEDURE – PREPARING EPINEPHRINE 1:100,000:

There are two proposed methods for preparing epinephrine 1:100,000 depending on the patient's weight.

Patient > 20kg

- 1) Start with an epi 1:10,000 solution (either prefilled luer-lock set or provider-prepared syringe).

PREFILLED	PROVIDER-PREPARED
2) Open a saline flush and waste 1mL of saline, leaving 9mL in the syringe. Attach a needle.	2) Waste 9mL of epinephrine 1:10,000 leaving 1mL in the syringe.
3) Remove the grey cap from the epinephrine vial.	3) On a bag or bottle of NaCl injection solution, swab the injection port with alcohol;
4) Introduce the needle into the blue stopper in the epinephrine vial and draw 1mL of the 1:10,000 solution into the 9mL of normal saline to equal 10cc of epinephrine 1:100,000 (10mcg/mL). Shake to mix.	4) Introduce the needle into the injection port and draw 9mL NaCl into the 1ml epinephrine 1:10,000 to equal 10ml epinephrine 1:100,000 (10mcg/mL). Shake to mix.

- 5) Label the resulting 10cc syringe "Push Dose Epi"

- 6) Deliver per protocol.

Patient < 20kg

1. Start with an epi 1:10,000 solution (either prefilled luer-lock set or provider-prepared syringe).
2. Open a 3-way stopcock and close the patient port.
3. Open a saline flush and connect it to one of the sample ports on the 3-way stopcock.
4. Waste 1cc of saline whilst purging any air in the syringe and stopcock. There should be 9cc of saline in the syringe.
5. Waste 9cc of the epi 1:10,000 and attach the syringe to the remaining open sample port on the 3-way stopcock.
6. With both syringes attached, push and pull between the two syringes several times to ensure that the solution in the stopcock is neither too concentrated, nor too dilute.

7. Push all 10cc into the original flush syringe and label it "Push Dose Epi" (this is now a multi-dose supply of epi 1:100,000)
8. Attach the appropriately sized dosing syringe to the open port on the stopcock.
(Weight <10kg = 1cc syringe. Weight 10kg-20kg = 3cc syringe)
9. Connect the patient port to a patent IV line using aseptic technique.
10. With the patient port closed, transfer the desired volume of epi 1:100,000 from the supply syringe to the dosing syringe.
11. Close off the epi supply syringe whilst opening the patient port.
12. Deliver per protocol, flush, and reassess the patient, carefully noting changes in BP.
13. Repeat step 10 to prepare subsequent doses, titrated to effect.
