



County of San Diego

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CRITICAL EMS PHARMACEUTICAL SHORTAGES GUIDANCE FOR EMS PERSONNEL ON EPINEPHRINE ADMINISTRATION

The San Diego County EMS Office is aware that there are ongoing, periodic shortages of essential prehospital pharmaceuticals and companion delivery equipment. Informed by consultation with the EMS community, this memo provides additional guidance to the [February 28, 2022 memo](#) on this topic. It outlines general mitigation strategies and provides specific instructions regarding the current shortage of epinephrine 1:10,000 1 mg/10 mL (0.1 mg/mL) pre-filled syringes.

Epinephrine 1:10,000 1 mg/10 mL pre-filled syringes have two important indications within our EMS delivery system:

- treatment of cardiac arrest patients
- treatment of hypotensive patients via intravenous push-dose after dilution

Mitigation Strategies

1. Anticipate shortages and monitor drug reports via your pharmaceutical supply vendors and the [FDA website](#). Many medications on the FDA's shortage list may be on allocation, and agencies are encouraged to order early and anticipate partial fulfillment.
2. Engage multiple pharmaceutical suppliers, as deliveries and available supplies may fluctuate between vendors
3. Check the FDA website for any extended use dates by lot: <https://www.fda.gov/drugs/drug-shortages/search-list-extended-use-dates-assist-drug-shortages>. Drugs on the list may continue to be used in the regular inventory until their extended use dates.
4. Rotate stock strategically, including from reserve vehicles, backup supplies, or other caches. If supply is completely exhausted, contact County EMS (EMSNotifications@sdcounty.ca.gov) if you would like to request a temporary waiver to allow an individual unit to remain in service with a reduced par level.
5. Retain recently expired medications that do not have extended use dates for potential use on a case-by-case basis, if authorized by a base hospital physician
6. Reserve epinephrine prefilled syringes for push dose epinephrine use. Cardiac arrest patients should be treated with diluted epinephrine 1:1,000 vials when prefilled syringes are in shortage.

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7. If the use of expired pharmaceuticals is the only option available, contact the base hospital for direction. After weighing risks and benefits, the base hospital physician may consider authorizing use of expired medication on a case-by-case basis. If expired medications are used, document this administration in the patient care report, notify the patient and/or a patient representative, and notify County EMS within three business days (EMSNotifications@sdcountry.ca.gov).

3 mL ampules or 30 mL multidose vials may be used to create a 1:10,000 epinephrine concentration, in addition to the epinephrine 1:1,000 1 mg/1 mL ampules outlined in the [February 28, 2022 memo](#). Discard the multidose vial after each patient encounter; vials may not be used for more than one patient.

As previously communicated:

- dilution of epinephrine 1:1,000 1 mg/1 mL to create epinephrine 1:100,000 push-dose epinephrine for hypotensive patients is NOT authorized
- epinephrine administration in an adult cardiac arrest patient should be limited to 3 doses. Early consultation with the base hospital physician should be made if EMS providers anticipate the need for a physician variation to current protocol to comply with this limitation during a critical epinephrine shortage

Epinephrine is a high alert medication. Please carefully review and follow the medication handling guidance in the [February 28, 2022 memo](#).

EMS providers are asked to notify County EMS via EMSNotifications@sdcountry.ca.gov when the epinephrine 1:10,000 1 mg/10 mL backorder resolves and a return to standard operations and stock occurs.

Agencies are requested to anticipate pharmaceutical shortages and make early contact with EMSNotifications@sdcountry.ca.gov to explore mitigation strategies *before* the situation becomes critical.

Thank you for your assistance in continuing to provide outstanding care to our patients.

Sincerely,



Kristi L. Koenig, MD, FACEP, FIFEM, FAEMS, Medical Director
San Diego County Emergency Medical Services Office
San Diego County Fire

cc: Andrew Parr, EMS Administrator