



BUREAU OF EMERGENCY MEDICAL SERVICES

## **EMS Information Bulletin - # 078**

**DATE:** July 8, 2010

**SUBJECT:** Recent Medication Shortages from Pharmaceutical Suppliers: EPINEPHrine and 50% dextrose.

**TO:** EMS Agencies  
Regional EMS Council Directors  
Pennsylvania Emergency Health Services Council  
Ambulance Association of PA

**FROM:** Bureau of Emergency Medical Services  
PA Department of Health  
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There have been recent shortages in several medications on the ALS drug list. These production shortages occur occasionally. The purpose of this message is to provide ALS Services with information and recommendations related to dealing with these medication shortages.

### **General Guidance**

ALS Services should closely follow their medication stock and communicate with their medication suppliers to assure that medication orders are placed with adequate time to assure delivery of medications that have limited or delayed availability. ALS Services should consider contacting other medication suppliers if their usual supplier has shortages of any required medication.

### **EPINEPHrine Recommendations**

There are shortages of 1mg/10mL (1:10,000) EPINEPHrine prefilled syringes. The medication may be more available in the 1mg/1mL (1:1,000) 1 mg ampule and 30 mg vial formulations. During the shortage, ALS Services may consider:

1. Prioritizing available 1mg/10mL (1:10,000) prefilled syringes to first due ALS ambulances and using options listed below when additional EPINEPHrine is needed or on units that have lower chance of encountering a cardiac arrest patient. All ALS

ambulances and squads must still carry an appropriate amount of EPINEPHrine, and alternative options are listed below.

2. Substituting the 1mg/10mL (1:10,000) prefilled syringes with 1mg/1mL (1:1,000) 1 mg ampules that are prepackaged with 10 mL prefilled syringes of flush solution for dilution. To mix a 1:10,000 concentration of EPINEPHrine, the ALS provider should be educated to dilute 1 mL of 1mg/1mL (1:1,000) EPINEPHrine with 9 mL of saline.
3. Substituting the 1mg/10mL (1:10,000) prefilled syringes with 1mg/1mL (1:1,000) multidose 30 mg vial. If using this option, ALS personnel must be educated to withdraw 1 mL (1mg) of EPINEPHrine for dilution with 9 mL of saline for comparable doses of 1mg/10mL (1:10,000) doses. Note that the Institute for Safe Medication Practices does not recommend this alternative – suggesting that it may be associated with an increased risk for medication error when compared with using individual 1 mL (1:1,000) ampules as listed above.
4. Due to the lack of evidence for vasopressin, the Bureau is NOT currently considering the addition of this medication to the ALS drug list.

Additional recommendations related to safely dealing with this shortage of EPINEPHrine can be found on the Institute for Safe Medication Practices (ISMP) website at [www.ismp.org/](http://www.ismp.org/)

### **50% Dextrose Recommendations**

There are shortages of 50% dextrose solution. During the shortage, ALS Services should consider:

1. When 50% dextrose is indicated by the Statewide ALS Protocols, ALS providers may substitute 25% dextrose (often considered a pediatric concentration) at twice the volume per dose to attain an equivalent dose of dextrose. Although the Statewide ALS Protocols require 50% dextrose for treatment of adult patients with hypoglycemia, by the authority of this EMS Information Bulletin, ALS providers are permitted to substitute an equivalent dose of dextrose using a 25 % concentration when following the Statewide ALS Protocols. There are generally no clinical concerns with using this lower concentration of dextrose, and there are actually potential safety benefits due to lessened complications if there is extravasation of the medication.
2. Dextrose supplies may be spared by reserving intravenous dextrose to patients with altered levels of consciousness and considering oral dextrose or delay of treatment until arrival at the receiving facility for other patients. A serum glucose slightly less than 60 should not automatically lead to an infusion of intravenous dextrose if the patient is awake.

3. If all intravenous formulations of dextrose are unavailable or severely limited, ALS Services should consider carrying and using glucagon as directed by the Statewide ALS Protocol as an alternative.