

**Department of Health**

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Agency of Human Services

**MEMORANDUM**

**TO: VT Advanced EMS Providers ( EMT-I-03, AEMT, EMT-P, Paramedic)**

**FROM:** *Daniel Wolfson, MD - VT State EMS Medical Director*

DATE: January 30, 2013

RE: Drug Supply Shortages: D50 substitutions in temporary shortages

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**D50:** Currently, the Vermont Office of Public Health Preparedness and Emergency Medical Services (OPHP/EMS) is aware of a shortage of D50. The typical adult dose is 25 grams of glucose, given as 50 ml. of 50% dextrose solution IV (500 mg. of dextrose per ml).

In any situation where D50 would be used, as specified in the Statewide Emergency Medical Services Protocols, advanced Vermont EMS services/providers may use any of the following acceptable substitutions **and are required to notify (OPHP/EMS) of which formulation will be used:**

- 1) **PREFERRED OPTION:** Use of D70 from TPN compounding bags to make preloaded D50 syringes to deliver 25 grams of glucose IV. **Using preloaded syringes will minimize the possibility of medication error or change in procedures and provide more timely medication administration.** These syringes would need to be compounded by the agency's affiliated hospital pharmacy. Issues with expiration dating and wasting of product will need to be determined by the pharmacy. Administer under the existing protocol for preloaded 25 gram D50 syringes. Please coordinate with affiliated hospital pharmacy and ED medical direction.
- 2) A sterile IV bag containing 250 ml of D10W and delivering 25 grams of glucose IV. These bags would need to be compounded by the agency's affiliated hospital pharmacy. Issues with expiration dating and wasting of product will need to be determined by the pharmacy. Bolus the entire 250 cc bag in over 10-20 minutes.
- 3) A sterile IV bag containing 500 ml of D5W and delivering 25 grams of glucose IV. These are available as premixed bags from the manufacturer. Bolus the entire 500 cc bag in over 10-30 minutes.

**General thoughts on temporary drug shortages:** Temporary shortages of specific medications are becoming a regularly occurring problem. EMS systems must be prepared for complete unavailability of certain drugs. Substituting medications in a certain class (for example,



midazolam substitution for lorazepam), or changing the concentration/packaging of medications may lead to medication administration errors and compromise patient safety. A team approach is needed to deal with drug shortages and alternative plans should be coordinated with the EMS agency, affiliate hospital ED medical director, affiliate hospital pharmacy director and State EMS. Temporary medication substitutions must deliver the same amount of active medication and be packaged in a manner that prevents as far as possible any medication errors. This should include clear labeling, separate packaging (e.g. zip-seal plastic bags) containing the medication with diluents, if any, and instructions for administration. In all such substitutions, careful attention to medication expiration, sterility, potency, and dose equivalent is required. EMS agencies must ensure that all EMTs who will be administering such substitute dosage forms of medications in times of temporary shortage are appropriately trained and oriented on use of the substitute dosage form of the medication. Use of expired medications is not acceptable at this time. The Vermont Office of Public Health Preparedness and Emergency Medical Services will continue to monitor drug supplies and issue additional advisories as needed on a case-by-case basis.

**Please feel free to contact the EMS office with any questions at [vtems@state.vt.us](mailto:vtems@state.vt.us) or by phone at 802-863-7310 or 1-800-244-0911 (in VT only)**