



# PENNSYLVANIA EMERGENCY HEALTH SERVICES COUNCIL

*Your Voice In EMS*

## RECOMMENDATION FOR CONSIDERATION

Board Meeting Date: October 24, 2012

Subject: Racemic Epinephrine

VTR#: 1012-02

Committee/Task Force:

EMS for Children (EMSC)

Recommended Goal

Recommended Policy Change

Other:

### **Recommendation:**

The Pennsylvania Department of Health should amend the list of "Approved Drugs for ALS Ambulance Services" (28 Pa. Code § 1005.11 related to drug use, control, and security) to include the addition of Racemic Epinephrine as an available optional medication.

### **Rationale [Background]:**

Pediatric patients may access prehospital care for respiratory distress due to upper or lower airway obstruction. Existing statewide treatment protocols focus on lower airway obstruction (i.e., bronchospasm); however, upper airway obstruction, due to croup or anaphylaxis, is also a common malady in pediatrics. Croup is a viral illness affecting children aged 6 months to 6 years, which leads to swelling of the larynx and subglottic area. Nebulized racemic epinephrine is a well-recognized treatment for croup, as well as for stridor due to allergic reaction, anaphylaxis, and other upper airway obstruction. Administration of racemic epinephrine has historically been well tolerated by children, has minimal side effects, and has been shown to reduce hospital admissions (and potentially ED length of stay if administered in the prehospital setting).

EMS personnel do have access to 1:1000 epinephrine, which can be dosed and delivered via nebulizer. However, Advanced Pediatric Life Support Guidelines recommend five milliliters for acute upper airway obstruction, and most ambulances carry less than five milliliters total. Racemic epinephrine is easy to administer; each dose is pre-measured in a plastic tube or "bullet."

Albuterol is commonly given to children with symptoms of upper airway obstruction due to limited pharmaceutical options in the prehospital setting. Albuterol may worsen the obstruction due to relaxation of the airways. Because of this, a significant amount of discussion occurred within the EMSC committee regarding providing this recommendation as an optional medication vs. a required medication for ALS agencies. The committee did agree that the prevalence of croup may be more concentrated in certain geographies over others and that some EMS systems have transport considerations (i.e., short transport time) that do not necessarily justify a statewide requirement, but rather maintain carrying racemic epinephrine a service-level decision.

### **Medical Review [Concerns]:**

This recommendation was initially presented to the Medical Advisory Committee (MAC) in 2010, and a pilot project proposal was submitted to the Department of Health. The MAC reviewed the proposal in October 2010 as part of their standard review process of pilot projects submitted to the Department. The MAC approved the pilot project

during that meeting. In July 2012, the results of the pilot project were presented to the MAC, citing no adverse effects. Pilot results were presented as follows:

- 31 patents were enrolled within three hospitals
  - o UPMC Childrens (All services within the UPMC Medical Command System & Mutual Aid EMS)
  - o St. Christopher's Hospital for Children (City of Philadelphia EMS & St. Christopher Transport Unit)
  - o The Children's Hospital of Philadelphia (City of Philadelphia EMS)
- Patients age ranged between 3 months and 9 years
- No patients worsened with administration of racemic epinephrine
- Most were perceived by the ALS provider as "improved" upon arrival at the ED

The project received MAC endorsement during that meeting, and the recommendation was returned to the EMSC Committee for further action. No specific concerns accompanied the recommendation back to the EMSC Committee.

The release of the 2011 statewide ALS treatment protocols included a new protocol (4023P) for the treatment of croup/stridor/upper airway disease in pediatrics. This protocol was developed with input from the EMSC liaison to the MAC and includes the consideration to nebulize epinephrine for the treatment of upper airway obstructions. The EMSC committee would collaborate with the MAC to revise this protocol for 2013 to include racemic epinephrine as an optional pharmaceutical modality.

**Fiscal Concerns:**

There are no fiscal concerns associated with this VTR as participation is optional. The average costs noted by sites participating in the pilot project were approximately \$0.88/dose; therefore, the cost to participating services would be minimal.

**Educational Concerns:**

Pediatric Advanced Life Support (PALS), Pediatric Education for Prehospital Providers (PEPP), and paramedic curricula reference the administration of racemic epinephrine for croup. Education was developed and provided to the EMS agencies that participated in the pilot program, which is already available on the Learning Management System (LMS). ALS agency medical directors should also be encouraged to consider additional education for their providers.

**Plan of Implementation:**

The Pennsylvania Department of Health should publish the updated list of "Approved Drugs for ALS Ambulance Services" in the Pennsylvania Bulletin. The Bureau of EMS should send specific correspondence to each regional EMS council to inform the ALS Agency Medical Directors within each region of the update.

The PEHSC Committee/Task Force offers consultation to the Department in regard to the content of this Vote to Recommend (VTR) and its attached documents. The PEHSC Committee/Task Force specifically offers staff or member support to participate in Department deliberations regarding this recommendation in an effort to convey committee/task force discussions.

**Board Meeting Comments/Concerns:**

Signed: David James  
President

Date 11-12-12

Accept:

Table:

Modify:

Reject:

Comments: This recommendation was approved unanimously by the Board of Directors. A suggestion was made to ensure that EMS agency medical directors provide supplemental education to their ALS practitioners on the administration of racemic epinephrine as dosing errors from the Pittsburgh portion of the pilot study were referenced.

Date of Department Response: \_\_\_\_\_

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