



RECOMMENDATION FOR CONSIDERATION

Board Meeting Date: March 21, 2012

Subject: Changes to list of Approved Drugs for ALS Ambulance Services: Control of IV Infused Medications

VTR#: 0312-03

Committee/Task Force: Medical Advisory

Recommended Goal

Recommended Policy Change

Other:

Recommendation:

The Department should amend the list of Approved Drugs for ALS Ambulance Services to include a requirement that an electronic IV infusion pump or mechanical flow control device be used to control the rate of administration of all continuously infusing IV medications established in the prehospital setting.

The Department should also amend the list of Required Ground and Air Ambulance Equipment and Supplies to require each ALS unit to carry at least one (1) electronic IV infusion pump or mechanical flow control device.

Rationale [Background]:

Medication errors account for almost 20% of in-hospital injuries; IV infusion errors are among the most serious due to the high risk nature of many IV medications and rapid rate of absorption. One study found that IV medications were associated with 54% of potential adverse drug events and that 40% of in-hospital patient deaths from such events are due to administration of an incorrect dosage¹.

Prehospital administration of IV infused medications can be particularly problematic for several reasons: 1) It is an infrequently practiced procedure; 2) It is usually associated with high acuity patients who may require multiple interventions; 3) Maintaining an accurate administration rate with a gravity-dependent IV is difficult and requires frequent reassessment by the provider. Additionally, ALS providers must perform mathematical calculations in what can sometimes be an austere environment.

Requiring the use of an IV infusion pump or mechanical IV flow adjunct control device (e.g. Dial-a-Flow, etc.) when administering continuously infused medications established in the prehospital setting provides an important measure of patient safety and aligns EMS with other areas of the healthcare where such policies have existed for years. This initiative is also consistent with the Bureau of EMS' initiative to "create a culture of safety in EMS" for Pennsylvania.

This recommendation is consistent with, but does not replace the existing requirement that all continuously infused IV medications managed during an interfacility transport must be maintained on an electronic IV infusion pump in order to maintain the standard of care established by the transferring healthcare facility or if IV Nitroglycerine is established in the prehospital setting.

Medical Review [Concerns]:

The PEHSC Medical Advisory Committee voted unanimously to recommend this policy change to the Department of Health.

When purchasing an IV infusion pump, ALS agency medical directors and administrators may want to consider a model that incorporates "smart pump" technology. This feature allows an organization to create a library of medications that provides

medication dosing guidelines by establishing concentrations, dose limits and clinical advisories. Smart pump technology can reduce administration errors associated with miscalculated dosesⁱⁱ.

Fiscal Concerns:

While the MAC believes that use of an electronic IV infusion pump represents the gold standard in healthcare, the committee recognizes the need to also recommend a lower cost alternative for ALS agencies whose use of continuously infused IV medications is infrequent.

The estimated cost of an electronic IV infusion pump, depending of features selected, is \$1,500.00 - \$3,500.00 each, plus the cost of proprietary pump infusion tubing if required. The mechanical IV flow control adjunct device is a disposable, single patient use device that is placed in-line with a standard IV administration set and costs \$5.00-\$8.00 each.

Intravenous infusion pumps are listed on the EMSOF Funding Priorities published June 18, 2011; maximum allowed cost \$2,000.00.

Educational Concerns:

ALS agency medical directors should ensure that ALS providers have received in-service education on the model of IV infusion pump purchased by the agency prior to field use. If the mechanical IV flow control adjunct device is selected for use, the medical director should provide a dosing chart for each drug based on a pre-determined admixture concentration and provide a continuing education for providers on dosage calculation. Providers should also be reminded to periodically confirm the rate of administration selected on the manual device reflects the actual flow rate.

Plan of Implementation:

Upon acceptance of this recommendation, the Department should:

1. Serve notice in the Pennsylvania Bulletin, as part of the 2012 update of Approved Drugs for ALS Ambulance Services, amending the list to include a requirement that an electronic IV infusion pump or mechanical IV flow control adjunct device be used to control the rate of administration of all continuously infusing IV medications established in the prehospital setting.
2. Serve notice in the Pennsylvania Bulletin, updating the list of "Required Ground and Air Ambulance Equipment and Supplies" to require each ALS unit to carry at least one (1) electronic IV pump or mechanical flow control device.

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:

The Board discussed the recommended implementation date that would occur sometime in 2012 with the update of the approved list. Concern was expressed that this may not provide sufficient time for compliance and it was suggested the date should be moved forward. The members also discussed the need to add a provision to amend the required equipment list, for inspection purposes, requiring one (1) electronic or manual flow control device per ALS unit. How many devices should be carried was discussed; while consensus could not be reached on a specific quantity, the intent is for the ALS unit to have available a device for each IV admixture in use. If necessary, this could be achieved with a combination of electronic and manual devices.

Signed: J.R. Henry PGM
President

Date 4/2/12

For PEHSC Use Only – PA Department of Health Response

Accept: _____ Table: _____ Modify: _____ Reject: _____

Comments:

Date of Department Response: _____

- ⁱ AHRQ Innovations Exchange “Intravenous Infusion Safety Initiative Prevents Medication Errors, Leading to Cost Savings and High Nurse Satisfaction”
- ⁱⁱ Institute for Safe Medication Practices: “IMSP Summit On The Use Of Smart Infusion Pumps: Guidelines For Safe Implementation and Use”