



PENNSYLVANIA EMERGENCY  
HEALTH SERVICES COUNCIL  
*Your Voice In EMS*

### RECOMMENDATION FOR CONSIDERATION

Board Meeting Date: December 2, 2020

Subject: Finger Thoracostomy

VTR#: 1220-01

Committee/Task Force: Critical Care Transport TF

☒ Recommended Goal

☐ Recommended Policy Change

☐ Other:

#### Recommendation:

The Department of Health should amend the scope of practice to authorize providers at or above the level of paramedic, with additional critical care training, to perform finger thoracostomy when practicing on a licensed air or ground critical care ambulance.

#### Rationale [Background]:

Finger thoracostomy is an alternative procedure for emergency decompression of a suspected tension pneumothorax. Studies suggest that needle thoracostomy inconsistently accesses the pleural space due to length and/gauge of needle used for the procedure. This alternative procedure allows for tactile feedback that the pleural space has been accessed.

Finger thoracostomy requires minimal equipment to perform, e.g. scalpel and Kelly clamp, and can be performed on either the anterior or lateral chest wall based on protocol or online medical command. This procedure essentially converts a tension pneumothorax to an open pneumothorax, however it does not involve inserting a tube/drain into the pleural space. A chest seal with one-way valve can be applied following the procedure to prevent introduction of air into the thoracic cavity through the surgical wound.

"Studies of both prehospital and hospital providers have demonstrated that though landmarks can be appropriately recited, they are not always accurately identified. Cadaver studies have shown improved success in reaching the thoracic cavity when the fourth or fifth intercostal space mid-axillary line is used instead of the second intercostal space mid-clavicular line in adult patients. ATLS now recommends this location for needle decompression in adult patients. Needle decompression can fail to improve clinical decompensation in patients who have hemothorax or in whom the angiocatheter has kinked. Performing a finger thoracostomy can ensure adequate decompression of the chest and eliminate tension pneumothorax as the cause of decompensation<sup>i</sup>."

"A two-year prospective observational study of all severe trauma patients transported by a regional helicopter EMS service in Italy examined 55 patients who underwent simple thoracostomy (51 unilateral and four bilateral) after experiencing blunt chest trauma. A pneumothorax or hemo-pneumothorax was found in 91.5% of performed procedures and a hemothorax in 5.1%. No cases of major bleeding, lung laceration or pleural infection associated with the simple thoracostomy procedure were reported, and no reaccumulation of the pneumothorax was reported after simple thoracostomy was performed. If reaccumulation of the pneumothorax was suspected, a finger sweep was performed. Authors of the study made it clear that only highly trained crews should perform this procedure.<sup>ii</sup>"

"In 2009, a group of British researchers reviewed their air ambulance database across a 39-month period, finding 61 patients where prehospital traumatic cardiac arrest was identified. Of these, 37 patients received resuscitation attempts, with 18 undergoing chest decompression. In 17 of these patients, a simple thoracostomy was performed and one patient had needle decompression. No complications with the procedure were recorded, and return of spontaneous circulation was achieved in four patients who later expired; however, their deaths were attributed to head injuries and not traumatic injuries to the chest.<sup>iii</sup>

**Medical Review [Concerns]:**

The physician representatives on the CCT task force support this recommendation.

**Fiscal Concerns:**

The procedure requires minimal equipment and/or supplies that would not pose a financial challenge for an agency that chooses to perform this procedure.

**Educational Concerns:**

The air or ground critical care transport agency medical director is responsible for providing the appropriate provider training and credentialing.

**Plan of Implementation:**

Upon acceptance, the Department should amend the PA CCT Provider and Air Medical Scope of Practice documents to include this skill. The appropriate statewide protocol(s) should be amended to add finger thoracotomy as an alternative procedure for credentialed providers.

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:**

None.

Signed: J David Jones  
President JAS

Date 12-2-2020

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For PEHSC Use Only – PA Department of Health Response

Accept:\_\_\_\_ Table:\_\_\_\_ Modify:\_\_\_\_ Reject:\_\_\_\_

Comments:

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

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<sup>i</sup> <https://bulletin.facs.org/2018/06/atls-10th-edition-offers-new-insights-into-managing-trauma-patients> June 1, 2018

<sup>ii</sup> Massarutti D, Trillo G, Berlot G, et al. Simple thoracostomy in prehospital trauma management is safe and effective: A 2-year experience by helicopter emergency medical crews. *Eur J Emerg Med.* 2006;13(5):276–280.

<sup>iii</sup> Mistry N, Bleetman A, Roberts KJ. Chest decompression during the resuscitation of patients in prehospital traumatic cardiac arrest. *Emerg Med J.* 2009;26(10):738–740.