



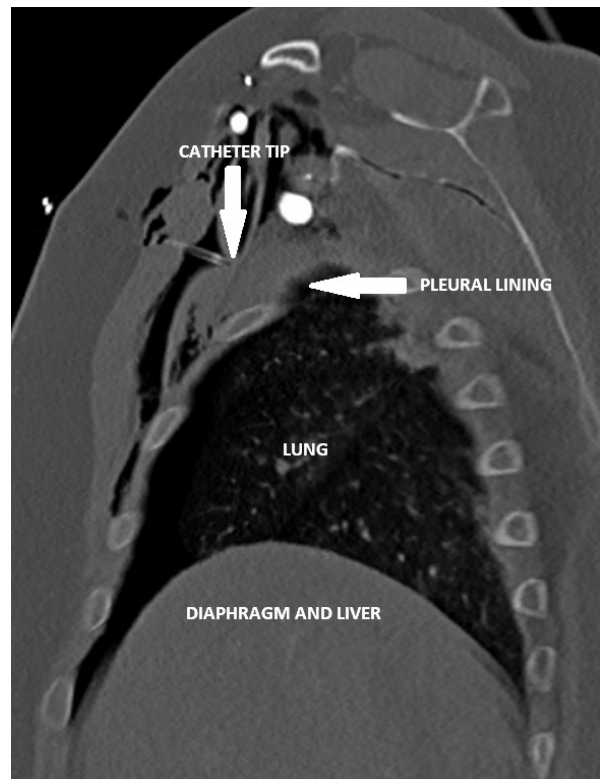
Advisory 20-13 Needle Thoracostomy (Replaces Advisory 16-08)

To: All ALS Providers
From: Jeremy T. Cushman, MD, MS, EMT-P *JT Cushman*
Regional Medical Director
Date: July 21, 2020

A recent patient safety case suggested that Advisory 16-08 be reissued. Here are the key takeaways:

Indications: Needle decompression thoracostomy should only be performed if the patient exhibits evidence of a tension pneumothorax. This is indicated by decreased breath sounds on one side **AND** tension physiology such as hypotension, tachycardia, and jugular venous distention. Performing decompression because of decreased breath sounds on one side without evidence of tension physiology is not necessary, not indicated, and can cause patient harm. Although certainly a patient with a concern for pneumothorax should be closely monitored for developing a tension pneumothorax, they should not be “prophylactically” decompressed. The exception is for patients with blunt torso trauma who are in cardiopulmonary arrest, where the potential for tension pneumothorax exists and is unable to be reliably assessed during the initial resuscitative efforts.

Equipment: Needle decompression thoracostomy should be performed with a catheter that is at least 14g in diameter and at least 6.5 cm in length. Commonly used vascular access catheters that are optimal for large volume fluid resuscitation (1.7 inch / 4.4 cm) are not appropriate for needle decompression. One study found the mean chest wall thickness was 4.5 cm and concluded that the standard 4.4 cm catheter would not be successful in half (95% CI 40.1-59.3%) of those patients requiring emergent decompression.¹ Proper equipment selection is paramount for a successful intervention and why catheters at least 6.5 cm in length are to be used.² A recent case seen at the University of Rochester visually reinforces the importance of using a long enough catheter and is highlighted to the right. The distance from the catheter tip to the pleural lining is more than 2 cm and so decompression was not achieved.



Do not hesitate to contact your Agency Medical Director or the Regional Program Agency with any questions regarding this guidance.

¹ Stevens RL, Rochester AA, Busko J, et al. Needle thoracostomy for tension pneumothorax: Failure predicted by chest computed tomography. *Prehospital Emergency Care* 2009;13(1):14-17

² Powers WF, Clancy TV, Adams A, et al. Proper catheter selection for needle thoracostomy: A height and weight-based criteria. *Injury* 2014; 45(1):107-11.

web www.mlrems.org
phone (585) 463-2900
fax (585) 473-3516

office
44 Celebration Drive, Suite 2100
Rochester, NY 14620

mailing
601 Elmwood Avenue, Box 655
Rochester, NY 14642