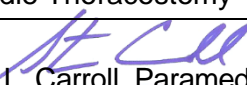



COUNTY OF VENTURA EMERGENCY MEDICAL SERVICES		HEALTH CARE AGENCY POLICIES AND PROCEDURES
Policy Title: Needle Thoracostomy		Policy Number: 715
APPROVED: Administration:	 Steven L. Carroll, Paramedic	Date: December 1, 2024
APPROVED: Medical Director	 Daniel Shepherd, M.D.	Date: December 1, 2024
Origination Date:	August 2010	Effective Date: December 1, 2024
Date Revised:	August 8, 2024	
Date Last Reviewed:	August 8, 2024	
Review Date:	August 30, 2026	

- I. Purpose: To define the indications, procedure and documentation for needle thoracostomy use by paramedics.
- II. Authority: Health and Safety Code, Sections 1797.220 and 1798. California Code of Regulations, Title 22, Sections 100091.01 and 100096.02.
- III. Policy: Paramedics may perform needle thoracostomy on patients with a suspected tension pneumothorax in accordance with this policy.
- IV. Procedure:
  - A. Indications
    1. Patients with **ALL** of the following:
      - a. Clinical suspicion of pneumothorax (e.g., trauma, dyspnea, chest pain).
      - b. Signs of hypoperfusion **and/or** systolic blood pressure less than 90 mmHg (adults) or below minimum systolic blood pressure for respective age in Handtevy (pediatrics).
      - c. Absent or significantly decreased breath sounds on the affected side.
    2. Patients in traumatic cardiac arrest:
      - a. Bilateral needle thoracostomy should be performed when patients meet criteria for resuscitation per Policy 606 and have known or suspected torso trauma.
  - B. Contraindications
    - a. None in this setting
  - C. Equipment
    1. VCEMS approved devices for adult and pediatric patients over 40kg: 3-3.75 inch (8.0-8.5 cm), 10 to 14 gauge over-the-needle catheter.
      - a. SPEAR – Simplified Pneumothorax Emergency Air Release
      - b. ARS – Air Release System
    2. VCEMS approved devices for pediatric patients under 40kg (under 11 years old per Handtevy): 1.25-inch (3cm), 14 to 16 gauge over-the-needle catheter.
      - a. No commercial kit is recommended

3. Syringe or commercial device to detect air return from pleural space during procedure.
4. One way valve to prevent air movement from the environment into the pleural space via catheter post placement.

D. Site

**Preferred Adult Site:**

- Lateral placement, fourth intercostal space in the anterior-axillary line (lateral to nipple).

**Alternative Adult Site and Preferred Pediatric Site:**

- Anterior placement, second intercostal space in the mid-clavicular line.

E. Placement

1. For SPEAR and ARS placement: Follow manufacturer recommended insertion techniques.
2. For pediatric patients under 40 kg (under 11 years old per Handtevy):
  - a. Attach syringe or commercial device to the over-the-needle catheter.
  - b. Insert the over-the-needle catheter perpendicular to the skin so that the needle is touching the rib below the desired intercostal space. Direct the needle just over the top of this rib into the desired intercostal space.
  - c. Advance the needle through the chest wall while maintaining negative pressure on the syringe or monitoring for indication of air return when using a commercial device. A “pop” felt while advancing the catheter, or indication of air or blood return, indicates the needle has punctured the parietal pleura and is in the pleural space.
  - d. Once in the pleural space do not advance the needle further. Advance the catheter over the needle until the hub rests against the chest wall or until resistance is felt.
  - e. Hold the catheter in place, remove and discard the syringe and needle.
  - f. Attach a one-way valve.
  - g. Secure the catheter hub.

**CAUTION:** Do not reinsert needle into cannula due to danger of shearing cannula.

F. Documentation

1. All needle thoracostomy attempts must be documented in the Ventura County Electronic Patient Care Reporting System (VCePCR).
2. Documentation will include location, size of equipment, number of attempts, success, complications, patient response and any applicable comments.