

# NWC EMSS Skill Performance Record

## CLOSURE OF AN OPEN PNEUMOTHORAX

Name:	1 <sup>st</sup> attempt: <input type="checkbox"/> Pass <input type="checkbox"/> Repeat
Date:	2 <sup>nd</sup> attempt: <input type="checkbox"/> Pass <input type="checkbox"/> Repeat

**Instructions:** An adult is experiencing severe shortness of breath following penetrating chest trauma and you suspect an open pneumothorax. You are asked to assemble the equipment and apply a vented chest seal.

Performance standard	Attempt 1 rating	Attempt 2 rating
0 Step omitted (or leave blank) 1 Not yet competent: Unsuccessful; required critical or excess prompting; marginal or inconsistent technique 2 Successful; competent with correct timing, sequence & technique, no prompting necessary		
<b>State indications for procedure/S&amp;S of an open pneumothorax</b> <input type="checkbox"/> Penetrating chest trauma with visible defect <input type="checkbox"/> *Unilateral to bilateral absence of breath sounds <input type="checkbox"/> Aphasia (inability to speak) <input type="checkbox"/> Sucking sound from wound on inhalation <input type="checkbox"/> Asymmetrical chest expansion <input type="checkbox"/> Sub-q emphysema <input type="checkbox"/> Severe dyspnea; hypoxia <input type="checkbox"/> Frothing/bubbling at site		
<b>Prepare patient:</b> Explain procedure to patient if awake		
Immediately cover wound with gloved hand while prepping equipment		
<b>*Prepare and assemble equipment: Commercial dressing:</b> The TLS Provider manual recommends use of a chest seal with an exhaust valve (Asherman chest seal, Bolin chest seal or Halo vent). All work well on dry skin with no blood coming from wound. Asherman and Bolin seals may more easily peel off wet skin compared to the SAM, HyFin, Russell, or FastBreathe seals. Laminated vent channels on other chest seals allow effective evacuation of blood and air from the pleural cavity and prevent tension hemopneumothorax. Laminated vent channels also prevent adhesive failure because blood does not accumulate behind the chest seals. <b>ITLS recommendation:</b> Based on local protocols, vented chest seals fitted with a laminated vent channel should be applied to patients with open pneumothorax.		
<input type="checkbox"/> Dressings should be at least 3 or 4 times the size of the defect. <input type="checkbox"/> Open package, center dressing over wound. Peel away protective liner; avoid wrinkling during application <input type="checkbox"/> Observe patient for improvement in ventilatory distress		
<b>Note:</b> Past recommendations were to place an occlusive dressing taped on 3 of 4 sides to allow air to egress and prevent a tension pneumothorax. These guidelines have not proven to be effective or realistic. Covering the wound improves respiratory mechanics, but the <b>three-sided occlusive dressing is no longer recommended</b> . Tactical Combat Casualty Care Guidelines recommend a vented chest seal and a non-vented seal if a vented one is unavailable (Kheirabadi et al, 2013; NAEMT Tactical Combat Casualty Care Guidelines, Oct. 28, 2013)		
Oxygen 12-15 L/NRM; assist with BVM as necessary. <b>Use positive pressure ventilations with caution in pts who have penetrating chest wounds.</b> High ventilatory pressures may force air from an injured bronchus into an adjacent open pulmonary vein, producing systemic air emboli. This may account for many of the dysrhythmias and sudden deaths that occur in patients with severe penetrating chest wounds.		
<input type="checkbox"/> Observe for development of a tension pneumothorax: May develop if penetrating wound has a one-way flap, is sealed with an occlusive dressing, or blood accumulates in the vent. <input type="checkbox"/> If pt becomes dyspneic and BP drops, temporarily lift/remove chest seal to release air or allow blood to escape. <input type="checkbox"/> Assess need for needle pleural decompression if no improvement following removal of dressing		
Transport pt to a Level I trauma center if ground transport time ≤ 30 min		

**Scoring:** All steps must be independently performed in correct sequence with appropriate timing and all starred (\*) items must be explained/ performed correctly in order for the person to demonstrate competency. Any errors or omissions of these items will require additional practice and a repeat assessment of skill proficiency.

**Rating: (Select 1)**

- ☐ **Proficient:** The paramedic can sequence, perform and complete the performance standards independently, with expertise and to high quality without critical error, assistance or instruction.
- ☐ **Competent:** Satisfactory performance without critical error; minimal coaching needed.
- ☐ **Practice evolving/not yet competent:** Did not perform in correct sequence, timing, and/or without prompts, reliance on procedure manual, and/or critical error; recommend additional practice