NPS Tactical EMS Skill Sheet – Station 2: Chest Trauma
Needle Decompression (NDC) / Chest Seal

Objective: Demonstrate the appropriate procedure for needle decompression (NDC) of a tension pneumothorax and the application of a Chest Seal for an Open Chest Wound.

Evaluation: Students will be evaluated as a Pass/Fail (P/F) with 3 attempts at each skill. The instructor will verify the student's ability to properly manage chest trauma in a simulated model by observing the student's procedural NDC technique and Chest Seal application.

Materials:
Candidate Skill Sheet
Needle decompression simulator, Betadine/alcohol prep, needle/catheter 10-14 gauge needle at least 3.25"
Chest Seal

Instructor Guidelines:
1. Provide each instructor with a candidate score sheet.
2. Ensure student has all student-required materials.
3. Read the learning Objective and the evaluation method to the student.
4. Explain the grading of the exercise. Each Candidate will have 3 opportunities to complete each skill before a fail will be submitted.
5. Allow time for the students to extract the information required from the instructor-provided scenario.

Performance Steps: Needle Decompression (NDC)
1. Prepare equipment.
2. Verbalize that body substance isolation (BSI) precautions were considered.
3. Verbalize that the progressive respiratory distress is due to penetrating chest trauma.
4. Identify the second intercostal space (ICS) on the anterior chest wall at the mid-clavicular line (MCL) on the same side as the injury; approximately two-finger widths below the clavicle.
5. Verbalize that the needle to be used for the procedure is at least 3.25 inch, 10-14 gauge needle.
6. Verbalize the importance of ensuring that the needle entry site is lateral to the nipple line.
7. Clean the site with an antimicrobial solution (alcohol or Betadine).
8. Insert the needle into the simulated chest.
   - Remove the plastic cap from the 3.25 inch, 10-14-gauge needle. Also remove the cover to the needle's flash chamber.
   - Insert the needle into the skin over the superior border of the third rib, MCL, and direct the needle into the second ICS at a 90 degree angle.
   - As the needle enters the pleural space, a "pop" may be felt, followed by a possible release of air. Ensure that the needle is advanced all the way to the hub.
   - Remove the needle, leaving the catheter in place.
   - If tension pneumothorax recurs (as noted by return of respiratory distress), repeat the needle decompression on the injured side.
9. Stabilize the catheter hub to the chest wall with tape (if possible).
10. Observe for decreased respiratory distress.
11. Remove gloves and dispose of them appropriately.
12. Document the procedure on the appropriate medical form.

Performance Steps: Chest Seal:

1. Expose the simulated injury by opening or cutting away the casualty's clothing.
2. If possible, remove excess blood from around the wound.
3. Apply Chest Seal to completely cover the chest wound.
4. Document the procedure on the appropriate medical form.
5. Monitor patient for progressing respiratory distress and either attempt to vent chest seal or perform needle decompression for severe respiratory distress.

NPS Tactical EMS Skill Sheet: Station 2
Needle Decompression (Tension Pneumothorax)

Task	(1 pass needed ; 3 attempts before fail)		
Verbalized that body substance isolation (BSI) precautions were considered.	P / F	P / F	P / F
Assessed the casualty to ensure the respiratory distress was due to penetrating chest trauma.	P / F	P / F	P / F
Identified the second ICS on the anterior chest wall at the MCL on the same side as the injury; approximately two-finger widths below the clavicle and lateral to the nipple line.	P / F	P / F	P / F
Cleaned the site with an antimicrobial solution (if available).	P / F	P / F	P / F
Inserted the needle into the chest at a 90 degree angle to the chest wall.	P / F	P / F	P / F
INSTRUCTOR: Administratively gain control of the needle and place it in a sharps container (or back in sheath with single hand technique if sharps container not available).			
Stabilized the catheter hub to the chest wall with tape (if feasible)	P / F	P / F	P / F
Listen for increased breath sounds and observe for decreased respiratory distress.	P / F	P / F	P / F
Removed gloves and disposed of them appropriately.	P / F	P / F	P / F
Documented the procedure on the appropriate medical form.	P / F	P / F	P / F

Critical Criteria:

_____ Knew that the needle to be used was a 10-14 gauge, at least 3.25 inch needle.

_____ Recognized progressive respiratory distress as an indication for needle decompression.

_____ Performed the needle decompression at the proper landmarks or on the same side as the chest injury.

Evaluator's Comments:

Student Name: _____ Date: _____

Evaluator: _____ Pass: _____ Fail: _____

NPS Tactical EMS Score Sheet: Station 2
Chest Seal (Open Chest Wound)

Task	(1 pass needed ; 3 attempts before fail)		
Verbalized: Do not use for minor wounds not penetrating into the thorax	P / F	P / F	P / F
Exposed the injury by cutting away the casualty's clothing.	P / F	P / F	P / F
Removed excess blood from around the wound.	P / F	P / F	P / F
Applied chest seal to completely cover the chest wound.	P / F	P / F	P / F
INSTRUCTOR: Inform the student that air is no longer escaping the chest with respiration.			
Documented the procedure on the appropriate medical form.	P / F	P / F	P / F

Critical Criteria:

_____ Applied chest seal to completely cover the open chest wound.

_____ Knew that if respiratory distress develops after placing chest seal, patient should be assessed for tension pneumothorax and potential needle decompression and/or venting the chest seal.

Evaluator's Comments:

Student Name: _____ Date: _____

Evaluator: _____ Pass: _____ Fail: _____