

CRITICAL ELEMENTS	CRITERIA MET
<p>1. Name three patient indications for chest tube placement (hemothorax, pneumothorax, heme-pneumothorax, malignant effusion, empyema).</p> <p>2. Verify order for chest tube. (Also consider pain medications.)</p> <p>3. Obtain chest tube cart from sterile products department or central supply. (Includes chest catheterization tray, chest tube, drainage system, vaseline, etc.)</p> <p>Setup (should never be overfilled)</p> <p>1. Fill water seal chamber with sterile water to the 2 cm level line indicated. (Color tint the water to improve air leak detection)</p> <p>2. Fill water suction control changer to the 20 cm line indicated. (Dry suction may be used in some systems.)</p> <p>3. Obtain suction setup and tubing.</p> <p>4. Verify that suction works. (Suction is turned off until tube is inserted and connected to drainage system.)</p> <p>5. Connect suction tubing to chest tube's suction control tubing and tape connections.</p> <p>6. Prepare chest tube system to be placed in a secure location and be ready for use.</p> <p>Insertion</p> <p>1. Describe proper patient position for chest tube insertion (supine lateral decubitus or high fowler.)</p> <p>2. Describe the nurse's role during placement of the chest tube.</p> <p>3. Place two Kelly clamps, bottle of sterile water, and petroleum jelly gauze at bedside. (available for emergency situations, such as dislocation of chest tube).</p> <p>Maintenance and Troubleshooting</p> <p>1. After insertion, place patient in semi-fowler's position.</p> <p>2. Describe proper handling and position of chest tube system during patient transport. (Chest tube should never be raised above patient's chest level and never tilted on its side. Obtain orders to place patient on a water seal with trained staff to transport.)</p> <p>3. Demonstrate how to add and remove water from suction control and water seal chambers.</p> <p>4. Describe or demonstrate how to obtain a chest tube drainage sample from the collection chamber. (Swab collection port with alcohol, insert needle, and withdrawal sample.)</p> <p>5. Explain the significance and nursing management of bubbling in the water seal chamber. (Intermittent bubbling on expiration in water seal or air leak chamber indicates an air leak, and continuous bubbling indicates a large air leak. [Assess from insertion site toward collection chamber for air leak and connections.] Any new air leak after troubleshooting should be reported to the physician.)</p> <p>6. Describe the following.</p> <ul style="list-style-type: none"> • Assessment of air leaks and corrective interventions (Always begin with patient.) • Assessment for presence of subcutaneous emphysema (Assess and palpate subcutaneous tissue around chest tube for swelling and crackling [crepitus].) • Interventions taken when chest tube is dislodged or disconnected (Dislodgement: Call physician, place petroleum jelly gauze over site, do not leave patient alone, and assess breathing. Dislocation: May place end of chest in water or temporarily cross clamp.) • Signs of a tension pneumothorax (increased shortness of breath, increased anxiety, unequal chest expansion or tracheal deviation) • How to manually vent chest tube system (need to know location of button, indication: prevention of tension pneumothorax) <p>7. Demonstrate proper dressing-change technique. (First dressing-change should be performed by physician, then daily by nurse and as needed. Petroleum jelly gauze aids with occlusiveness.)</p> <p>8. Document chest tube drainage. (Document drainage a minimum of once a shift, note color [usually is either frank blood or serosanguinous].)</p> <p>9. List three reportable conditions to physician (increased shortness of breath, abnormal increase or decrease in amount of drainage, more than 100 cc of drainage per hour).</p> <p>10. Documentation to include</p> <ol style="list-style-type: none"> a. breath sounds and chest excursion b. presence of air leak c. presence of subcutaneous emphysema d. drainage amount e. tubing fluctuations 	<p style="text-align: right;"><i>(Continued on next page)</i></p>

FIGURE 1. CHEST TUBE COMPETENCY ASSESSMENT FORM

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Changing Chest Tube Setup

1. Obtain new chest tube system. (Two nurses should perform changing chest tube system, if possible.)
2. Cross clamp chest tube using two Kelly clamps with gauze or padded Kelly clamps.
3. Disconnect old system, then connect new system and remove clamps.
4. Tape all connections securely.
5. Dispose of old drainage system in red bag.

Removal of Chest Tube

1. Describe the nurse's role in the removal of chest tube.
2. Discuss post-chest tube assessment. (Assess for shortness of breath and occlusive dressing over site, pull sutures tight, obtain follow-up x-ray, and maintain patient bed rest for 30 minutes to an hour after removal to minimize drainage and assess for reaccumulation of fluid or collapse from air.)

Performer's Signature: _____ Date: _____

Validator: _____ Date: _____

FIGURE 1. CHEST TUBE COMPETENCY ASSESSMENT FORM (CONTINUED)

Note. Table courtesy of Catherine Sargent, MS, RN, AOCN®, Bryn Mawr Hospital, Bryn Mawr, PA