

<b>SECTION:</b>	PATIENT CARE	<b>POLICY NUMBER:</b>	PC 05-c-017
<b>SUB-SECTION:</b>	Practice	<b>EFFECTIVE DATE:</b>	2018-11-21
<b>SUBJECT:</b>	Chest Tube Management	<b>LAST REVISION DATE:</b>	2020-06-17

### **PURPOSE:**

The purpose of this policy is to provide guidelines for the insertion, irrigation, instillation, care and maintenance, and removal of chest tubes at Cornwall Community Hospital.

### **POLICY:**

1. Chest tubes must be inserted and removed by a physician.
2. Placement must be confirmed by a chest x-ray following insertion.
3. Chest tubes must be attached to one of the following drainage systems:
  - a) Atrium Dry Suction Water Seal (Oasis) system to gravity or suction
  - b) Heimlich
4. Drainage units must be maintained below the chest level in an upright position with no kinks or loops in the tubing.
5. All connections between the patient and the drainage unit must be secured with waterproof tape.
6. The closed drainage system will be changed when full or clinically indicated.
7. The chest tube will not be milked or stripped this will cause an increase in thoracic pressure.
8. Two smooth surfaced clamps must be kept at the bedside.
9. The chest tube will be clamped using 2 smooth surface clamps when:
  - a) the drainage system is being changed
  - b) an accidental disconnection of chest tube from the drainage system has occurred
  - c) assessing for air leaks
10. A physician order to clamp the chest tube will include the duration the tube is to remain clamped.
11. A respiratory assessment, patient pain scale and vital signs including SpO2 will be performed a minimum of every shift and as clinically indicated.
12. Assessment of the chest tube system from the insertion site to the drainage system will be performed a minimum of every 4 hours and as clinically indicated. If subcutaneous emphysema (crepitus) is present around chest tube insertion site, the physician will be notified, the border marked with pen, and the patient assessed q1h for any increase.
13. All interventions will be documented in the patient's health record.
14. Practice will be guided by the following documents:
  - a) Insertion, Care and Maintenance of a Chest Tube (Appendix A)
  - b) Removal of a Chest Tube (Appendix B)
  - c) Chest Tube Dressing Change (Appendix C)
  - d) Instillation of Intrapleural Sodium Chloride Flush (Appendix D)

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- e) Instillation of Intrapleural Fibrinolytic Agent (Appendix E)
  - f) Initial set up of Atrium Oasis Dry Suction Water Seal Chest Drain (Appendix F)
  - g) Changing the Atrium Oasis Dry Suction Water Seal System (Appendix G)
  - h) Atrium Oasis Dry Suction Water Seal System Diagram (Appendix H)
  - i) Intermittent Chest Drainage with PleurX (Appendix I)
15. Intrapleural fibrinolytic agents may only be ordered by an Intensivist/Internist.
  16. Medication ordered for intrapleural instillation must be prepared by Pharmacy during regular Pharmacy hours.
  17. Intrapleural medication and/or flushing may only be done by a Registered Nurse (RN) and/or Physician.
  18. Registered Nurses, who have received education on the Instillation of Intrapleural Fibrinolytic Agents, may administer medication through a chest tube to patients admitted in the Surgical and Critical Care Units.

## **PROCEDURE:**

### **The Physician will:**

1. Place an order in the patient's electronic health record.
2. Explain the procedure to the patient and obtain consent.
3. Insert and remove chest tubes using aseptic technique as per "Insertion, Care and Maintenance of a Chest Tube" (Appendix A) and "Removal of a Chest Tube" (Appendix B).
4. Prep the skin with chlorhexidine (CHG); if allergic to CHG, use povidone iodine (PI).
5. Apply a sterile occlusive dressing on insertion and removal.
6. Apply a securement device on insertion to secure the chest tube.
7. Ensure placement has been confirmed following insertion.
8. Place order to clamp chest tube when indicated with duration included.
9. Document all interventions in patient's health record.

### **The Nurse will:**

1. Assist the physician with insertion and removal of chest tubes.
2. Follow procedure described in "Insertion, Care and Maintenance of a Chest Tube" (Appendix A) and "Removal of a Chest Tube" (Appendix B) for insertion and removal procedures.
3. Maintain the drainage unit below chest level in an upright position with no kinks or loops in the tubing.
4. Secure all connections between the patient and the drainage unit with waterproof tape.
5. Clamp the chest tube when ordered by physician, or when indicated, by applying 2 smooth surfaced clamps in opposite directions close to the insertion site.
6. Unclamp the chest tube if the patient experiences respiratory distress, and notify the physician.
7. Change the chest tube dressing when visibly soiled or no longer occlusive following the guidelines in "Chest Tube Dressing Change" (Appendix C).
8. Instill Sodium Chloride Flush as ordered, following the guidelines in "Instillation of Intrapleural Sodium Chloride Flush" (Appendix D). This may be done by an RN or physician only.

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9. Instill Fibrinolytic Agents as ordered, following the guidelines in “Instillation of Intrapleural Fibrinolytic Agent” (Appendix E). This may be done by an RN or physician only.
10. Set up Atrium Oasis Dry Suction Water Seal Chest Drain following the guidelines in “Initial set up of Atrium Oasis Dry Suction Water Seal Chest Drain” (Appendix F).
11. Change the Atrium Dry Suction Water Seal system when required, following the guidelines in “Changing the Atrium Oasis Dry Suction Water Seal System” (Appendix G).
12. Perform intermittent chest drainage with PleurX following the guidelines in “Intermittent Chest Drainage with PleurX” (Appendix I)
13. Mark the time and level of drainage on the white strip of the drainage unit.
14. Document the amount of drainage at the end of each shift in the patient’s health record.
15. Document all assessments and interventions in the patient’s health record.

**The Pharmacy will:**

1. Prepare intrapleural fibrinolytic agents for instillation during Pharmacy hours.
2. Label the medication “For intrapleural use only”.
3. Deliver the medication to the temperature-monitored refrigerator in the patient care area.

<b>APPENDICES:</b>	A. Insertion, Care and Maintenance of a Chest Tube B. Removal of a Chest Tube C. Chest Tube Dressing Change D. Instillation of Intrapleural Sodium Chloride Flush E. Instillation of Intrapleural Fibrinolytic Agent F. Initial set up of Atrium Oasis Dry Suction Water Seal Chest Drain G. Changing the Atrium Oasis Dry Suction Water Seal System H. Atrium Oasis Dry Suction Water Seal System Diagram I. Intermittent Chest Drainage with PleurX
<b>REFERENCE DOCUMENTS:</b>	1. Atrium University downloaded December 28, 2015 <a href="http://www.atriummed.com/EN/chest_drainage/education.asp">http://www.atriummed.com/EN/chest_drainage/education.asp</a> 2. CareFusion (2015). PleurX Drainage Procedure. Retrieved on June 16, 2015 from 3. <a href="http://www.carefusion.com/pdf/Interventional_Specialties/PleurX_DFU_drainage.pdf">http://www.carefusion.com/pdf/Interventional_Specialties/PleurX_DFU_drainage.pdf</a>
<b>REPEALED POLICIES:</b>	CCH Policy PC 05-c-020 Chest Tubes (2016-10-13)
<b>APPROVAL PROCESS:</b>	Interprofessional Practice Council: 2020-02-25 Department of Medicine: 2020-05-27 Medical Advisory Committee: 2020-06-17
<b>APPROVAL SIGNATURE:</b>	Ginette Ferguson Vice President Patient Services and Chief Nursing Officer

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