

**Lesson Plan: EPIC – Chest Tube & Drainage Units**

<b>Topic:</b>	EPIC – Chest Tube & Drainage Units
<b>Presenter:</b>	West Michigan Regional Medical Consortium CE Sponsor Program
<b>Location:</b>	West Michigan Regional Medical Consortium CE Sponsor Locations
<b>Credit Category:</b>	Trauma – 1.5-hours
<b>License Level:</b>	MEDIC
<b>Credits:</b>	1.5
<b>Format:</b>	1.5-hour guided practical and competency evaluation (following online cognitive learning)

**Objectives:** At the conclusion of this CE session, the participants will be able to:

**Cognitive**

1. Identify indications for the use of chest tubes and accompanying signs and symptoms.
2. Describe the risks/complications associated with chest tubes and chest drainage units (CDUs)
3. Describe the monitoring of chest tubes and chest drainage systems.
4. Describe considerations in caring for the patient who has a chest tube, including chest tube maintenance.
5. Understand how to measure intrathoracic pressure when a chest drainage system is in place
6. Understand “tidaling” and its significance
7. Understand normal drainage amounts for a patient and recognize when a change occurs
8. Understand nursing documentation as relates to chest drainage systems
9. Understand proper storage of tubing, especially during transport
10. Recognize the proper steps to evaluate the CDU after tipping over and steps necessary to return operations to normal
11. Understand how to manage chest tube dislodgement
12. Understand how to replace/change a CDU

**Psychomotor**

1. Demonstrate appropriate assessment of a patient with a chest tube placed
2. Properly set up a chest drainage unit
3. Demonstrate how to monitor intrathoracic pressure with a CDU
4. Recognize and correct an air leak in a CDU
5. Demonstrate the ability to place the drainage unit into UWS setting and understand when and why this could be needed
6. Demonstrate manage of a patient with chest tube dislodgement
7. Demonstrate how to change a CDU

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### Affective

1. The provider will read and understand the written materials in preparation for the practical session
2. The provider will understand effective communications with hospital staff related to chest drainage systems

### Outline for Session

1. Introductions
2. Review of handout/education materials
3. Review of respiratory anatomy with student participation and have students describe the indications and contraindications for chest tubes and drainage systems
4. Review of anatomical locations for chest tube placement
5. Consider showing the CDU video on the WMRMCC site, under the education tab
6. Review of the setup of a chest drainage system and hands on practice with set up and connection to a simulated chest tube.
7. Discuss how a chest tube is inserted, risks and potential complications
8. Review and practice with preparing a CDU for EMS transport
9. Review and practice with common CDU troubleshooting steps
10. Demonstrate how to add water to the suction control chamber in a wet CDU to increase suction and how to increase mechanical suction in a dry CDU
11. Show different models of CDU's (dry versus wet)
12. Demonstrate how to use the floor stand for the units to avoid tip overs
13. Demonstrate and practice applying occlusive dressing/chest seal if the chest tube becomes dislodged/displaced.
14. Discuss evaluation of the chest tube insertion site looking for s/s of infection or subcutaneous emphysema
15. Discuss documentation of a proper respiratory assessment in a patient with a chest tube, including drainage amounts before and after transport
16. Discuss and demonstrate how to monitor the CDU including water levels, suction check and connection evaluation
17. Demonstrate and calculate how to monitor intrathoracic pressure
18. Discuss tidaling and its implications when present or absent
19. Discuss air leaks, demonstrate an air leak, discuss and practice steps to locate and mitigate air leaks
20. Demonstrate how to change out or reset the CDU
21. Discuss the Heimlich chest drainage valve and show a sample, talk about function, risks and troubleshooting
22. Walk through case studies 1 -3 in the handout

**Student Evaluation Method:** Students will be evaluated through multiple methods, including formative evaluations within each learning module in the form of section quizzes which require 100 percent before moving to the next section; summative evaluation through an end-course online examination which requires a score of 90 percent or better; once the student has successfully completed the online learning modules and scored at or above 90 percent, they will attend a guided practical and competency evaluation, which will serve as a cumulative summative evaluation.

**Evaluation of Presentation:** Continuing Education Program Sponsor Evaluation Form will be filled out by all participants.