

SIMULATION SCENARIO DEVELOPMENT TEMPLATE

Scenario name: Chest Tube Management
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Target audience: Undergrad Grad Other: Nurse Educators
Date submitted: 11/11/2010
Institution: UW Seattle
Goal/Purpose: To practice basic management and troubleshooting with a chest tube.

Lab Set-up

Patient simulator/Task trainer: SimMan 3G
Patient characteristics: 65 y/o man, gray hair, dressed in patient gown.
Vital parameters, beginning: T 37.1 C, HR 95, RR 22, BP 146/88, O2 Sat 88% on RA.
Environment/setting/location: General Medicine inpatient unit
Lab staff needed day of simulation: Simulator Technician
Equipment, supplies & prop list: Chest tube (dual chamber waterseal) - kinked under leg,
CT dressing (Vaseline gauze, split 4x4 dressings, tape); oxygen set-up (regulator); nasal cannula on the patient, gauze taped at HOB, grey man's wig if available. Spray bottle (diaphoresis).

Learning Objectives

Learner will be able to:

1. identify 2 anatomical positions for CT placement and indication for each.
2. understand the equipment and preparation needed for insertion, maintenance, and removal; including understanding the different types of systems.
3. identify complications that may arise in a patient with a CT and apply a nursing intervention for each.
4. apply knowledge listed above and assessment skills pertinent to a CT in a simulation scenario.

Student Preparation

Pre-requisite knowledge/activities:

Knowledge of pulmonary physiology related to chest tubes.
Knowledge of chest tube management including potential problems and interventions.
Understanding of how a water-seal chest tube works.

Clinical Case Information

Case description/Patient history (HPI, PMH, Social Hx, FH):

HPI: Mr. Josiah Jones, a 65 yo admitted 2 days ago with pleural effusion. A chest tube was placed in the lower right pleural space shortly after admission. O2 sats have been >90% on 2L/NC O2. A&Ox3, vital signs stable, no complaints and slept all night, sister spent the night. Chest tube system was converted to from low wall suction to waterseal last evening and has been functioning appropriately. CT dressing was changed yesterday at 8 pm (dressing slid off when patient was bathing at sink). Smoking cessation teaching has not been started.

PMH: Recent pneumonia, HTN, Anxiety, COPD.

Social History: Smoker (1pack/day for 50 years). Lives with wife and is normally independent with ADLs. His older sister has been helping wife by staying overnight.

Medications and Allergies (MAR):

Allergies: NKDA

Current Medications: (1) Albuterol and Atrovent HHN Q4h and Q1h prn, (2) Captopril PO 25mg QD, (3) Lasix 20mg PO QD, (4) Potassium 20mEq PO QD, (5) Ampicillin 1gm IV QD

Actor Roles and Behavior Overview

Actor/Role – Brief overview of behavior during scenario

1. Patient (voice) - anxious, short of breath, uncomfortable, but downplays symptoms a little.
2. Outgoing nurse - gives report
2. Incoming nurse - listens to morning shift report (it is 7:30 am), goes to assess the patient, performs primary management of the patient's condition.
3. Nursing Assistant - obtains morning vital signs, asks the nurse if he/she needs help.
4. Older sister - spent the night. Wonders why he is getting worse. Is of the opinion he probably shouldn't have been walking.

Scenario Events and Expected Actions

Events in chronological order – Expected actions

1. Nurse receives report from previous shift - notes patient status.
2. Nurse goes into room to check on the patient and he is anxious, SOB, uncomfortable, diaphoretic. He downplays the symptoms - "I probably just wore myself out walking." Nursing assistant (CNA) enters, takes VS: HR 95, BP 146/88, Sat% 88 % on RA, RR 22. Breath sounds diminished LLL, absent RLL. Nurse begins to look for source of problem (chest tube is kinked under leg and nasal cannula is off).
3. If the nurse does not recognize both problems, patient deteriorates:
4. Nurse identifies kinked chest tube - unkinks tube and assures proper functioning.
5. Nurse reassesses patient. VS: HR 100, BP 150/88, Sat% 90% if on O2 (87% if not on O2), RR 22 (CNA may continue to assist with VS). Breath sounds unchanged if CT still kinked. BS diminished bases bilat if CT unkinked.
6. Once chest tube unkinked - patient vital signs return to normal and patient is breathing easier. VS HR 80, BP 140/88, Sat% 90% on 2 LNC O2, RR 18. Breath sounds diminished at bases bilat.
7. Nurse addresses sister's concerns.

Debriefing Points

1. What interventions were effective? (What went well?)
2. Did you have the knowledge and skills to care for this patient's problems?
3. During the scenario, when was communication most important?
4. What would you do differently next time?
5. What did you learn new from the case?

References

Evidenced-based practice guidelines, protocols or algorithms used in creating scenario:

Elkin, Perry, & Potter, (2007). Nursing Interventions & Clinical Skills: 4th Edition. St. Louis, Missouri: Mosby, Inc. pp. 684-690.

Dev SP, Nascimento B Jr, Simone C, Chien V. N (2007) Chest Tube Insertion. Engl J Med 357(15).

Key Words:

Pre-licensure students, Chest tube, pleural effusion, oxygenation, inpatient