N311 Care Plan # 4

Lakeview College of Nursing

Linda Duong

Demographics (5 points)

Date of Admission 08/01/XX	Patient Initials H.G	Age 68	Gender Male
Race/Ethnicity Hispanic	Occupation N/A	Marital Status Widowed	Allergies Ampicillin
Code Status N/A	Height 173 cm	Weight 71 kg	

Medical History (5 Points)

Past Medical History: Pneumonia and COPD

Past Surgical History: None Reported

Family History: None Reported

Social History (tobacco/alcohol/drugs): Frequent smoker and drinker (Amount unspecified)

Admission Assessment

Chief Complaint (2 points): Patient presented to hospital with dyspnea and coughing.

History of present Illness (10 points): 68-Year-old- male patient presented to the hospital on 08/01/XX with dyspnea and chronic coughing. Pt stated he has shortness of breath and chest pain often. Pt mentioned pain has been ongoing for weeks. Pt stated characteristics of his chest pain are sharp and throbbing pain. Pt states he also feels chest tightness and fatigue occasionally. Pt reported nothing aggravates his pain and taking medication helps relieve his pain.

Primary Diagnosis

Primary Diagnosis on Admission (3 points): Chronic Obstructive Pulmonary Disease (COPD)

Secondary Diagnosis (if applicable): None Reported

Pathophysiology of the Disease, APA format (20 points):

Centers for Disease Control and Prevention (CDC) (2019) defines chronic obstructive pulmonary disease (COPD) as a group of diseases that causes a blockage in airflow and breathing-related problems. The lungs take oxygen from the environment and bring it into the body and bloodstream. This process of gas exchange is called respiration, in which oxygen enters the blood, and carbon dioxide leaves the blood (European Environment Agency, 2008). There are several causes of COPD; the most common reasons are long-term cigarette smoking, secondhand smoke, occupational and environment exposures, and radon gas (Capriotti & Frizzell, 2016). COPD is a severe lung condition, and not everyone with COPD will develop lung cancer-having COPD does increase an individual's risk.

The patient HG's primary diagnosis was COPD, which is "a chronic lung disease that increases resistance to airflow from the trachea and larger bronchi to the terminal and respiratory bronchioles" (Capriotti & Frizzell, 2016, p.459). The lungs are flexible organs that can expand and contract. During inhalation, the lung tissue expands and brings in oxygen to the bloodstream, and during exhalation, the lung tissue contract and pushes out the carbon dioxide (Capriotti & Frizzell, 2016). The bronchioles in the lungs can dilate and constrict; this ensures the incoming air goes to the alveolus. Two conditions that occur in lung disease are hypoxia and hypercapnia (Capriotti & Frizzell, 2016). Hypoxia occurs when the lungs cannot adequately ventilate or acquire maximal oxygenation, and hypercapnia occurs when the lungs cannot fully expel carbon dioxide (Capriotti & Frizzell, 2016, 460).

Hypercapnia can develop due to a slow breathing rate, which accumulates carbon dioxide in the bloodstream (Capriotti & Frizzell, 2016). "The stimulus for breathing shifts to the chemoreceptors in the carotid and aortic bodies, which are triggered by low oxygen in the bloodstream" (Capriotti & Frizzell, 2016, p.460). The accumulation of blood CO2 causes the

brain's respiratory center in the medulla to increase breathing rate, thus stimulating the drive for normal breathing (Capriotti & Frizzell, 2016). Chronic hypoxia in relation refers to the lack of oxygen levels in the blood. The body adapts to hypoxia by increasing ventilation, stimulating pulmonary vasoconstriction, and triggering the kidney to release erythropoietin (Capriotti & Frizzell, 2016). Erythropoietin stimulates the bone marrow to create constant red blood cells in a process called erythropoiesis (Capriotti & Frizzell, 2016). Due to the pulmonary arterial vasoconstriction in chronic hypoxia, this leads to high blood pressure within the pulmonary arterial system (Capriotti & Frizzell, 2016).

To assess COPD patients, Capriotti & Frizzell (2016) recommended that clinicians use the physical examination techniques of inspection, palpation, percussion, and auscultation when evaluating the patient's pulmonary system During the assessment, it is important to the note the patient's rhythm, rate, and deep breathing patterns. According to the CDC (2019). "Symptoms of COPD include frequent coughing or wheezing, excess phlegm, mucus, or sputum production, shortness of breath, and trouble taking a deep breath."

To detect the severity of the COPD, lab tests used for HG included the CBC differential, chemistry, urinalysis, and culture test. The abnormal values that helped support the diagnosis of COPD are low hemoglobin, low hematocrit, high white blood cells, low sodium, high glucose, low albumin, low specific gravity in urinalysis, and positive bacteria in sputum culture. Diagnostic tests for COPD patients include computed tomography (CT) scans, magnetic resonance imaging (MRI), ultrasonography, bronchoscopy, pulse oximetry, and ventilation-perfusion (Capriotti & Frizzell, 2016). Patient HG's physician ordered multiple chest x-rays to view the patient's posterior and lateral views of the lungs on the chest x-ray. "Chest x-ray is commonly the initial diagnostic study performed to evaluate patients with pulmonary signs and

symptoms by assessing heart size, diaphragm borders, pulmonary tissue and vascularity, mediastinal lymph nodes, and pleural membranes" (Capriotti & Frizzell, 2016, p. 462).

Consequently, the x-rays also identified pleural effusions in the lower lung field of the patient's lungs. The report indicated a fluid buildup in the patient's lung tissue, causing chest pain or labored breathing. CDC (2019) recommend treatments include: quit smoking, avoid tobacco smoke and other air pollutants, pulmonary rehabilitation, medication, supplemental oxygen, and prevent lung infection. Procedures used for this patient are insertion of a chest tube during a hospital visit, incentive spirometer, and metered-dose inhaler.

Pathophysiology References (2) (APA):

Capriotti, T. & Frizzell, J.P. (2016). Pathophysiology: Introductory concepts and clinical perspectives. (1st ed.).

CDC - COPD Home Page - Chronic Obstructive Pulmonary Disease (COPD). (2019). https://www.cdc.gov/copd/index.html

European Environment Agency. (2008). *Lung function*. https://www.eea.europa.eu/themes/air/air-quality/resources/glossary/lung-function

Laboratory Data (20 points)
If laboratory data is unavailable, values will be assigned by the clinical instructor

CBC Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.**

Lab	Normal Range	Today's Value	Reason for Abnormal Value
RBC	4.2-5.4	4.8	
Hgb	12.0-16.0	9.3	Low- Chronic hypoxemia causes anemia due to oxygen transport capacity of blood. Low Hgb in COPD patients is due to presence of inflammation. (Sarkar et al., 2015)
Hct	37.0-47.0	29	Low- Hematocrit decreases with increasing age and severity of airway obstruction. (Sarkar et al., 2015)
Platelets	140-440	162	
WBC	4.0-10.0	13	High- WBC is associated with current smoking status and COPD severity. High WBC indications poor lung function and lower quality of life in COPD patients (Koo et al., 2017).

Chemistry Highlight All Abnormal Labs**—Explanations must be in complete sentences and contain in-text citations in APA format.**

Lab	Normal Range	Today's Value	Reason For Abnormal
Na-	136-145	135	Low- Electrolyte abnormality, secondary water retention associated with chronic diseases/conditions (Boyles, 2016).
K+	3.5-5.1	4.4	
Cl-	98-107	100	
Glucose	74-109	180	High- According to Inacio (2018), "Glucose is high in airways of

			people with COPD because inflammation in the lungs make them leakier so glucose can move from blood into airways."
BUN	7-25	22	
Creatinine	0.70-1.30	1.0	
Albumin	3.5-5.7	<mark>3.0</mark>	Low- Low albumin levels correlate with increased risk of morbidity and mortality in COPD patients. It also assesses malnutrition (Chen et al., 2015)
Calcium	8.6-10.3	9.0	

Urinalysis <mark>Highlight All Abnormal Labs</mark>—Explanations must be in complete sentences and contain in-text citations in APA format.

Lab Test	Normal Range	Today's Value	Reason for Abnormal
Color & Clarity	Straw Yellow/ Clear	Clear/ Yellow	
pH	5-9	5.8	
Specific Gravity	1.003-1.030	<mark>1.002</mark>	Low- According to UCSF Health (2019), the urine is too diluted, this is due to too much fluid. Because the patient is on IV fluids and is NPO, the pt retained a lot of fluids in his body thus low results of specific gravity in the urinalysis.
Glucose	Negative	Negative	
Protein	Negative	Negative	
Ketones	Negative	Negative	
WBC	0-5	0	
RBC	0-4	0	
Leukoesterase	Negative	Negative	

Cultures <mark>Highlight All Abnormal Labs</mark>—Explanations must be in complete sentences and contain in-text citations in APA format.

Test	Normal Range	Today's Value	Explanation of Findings
Urine Culture	Negative		None Reported
Blood Culture	Negative	Negative	
Sputum Culture	Negative	<mark>Positive Streptococci, Staphylococci</mark>	Positive- Identifies pathogen detected in the patient's lungs or breathing passages. The organism can causes an infection. (Bacterial Sputum Culture, 2018).
Stool Culture	Negative		None Reported

Lab Correlations Reference (APA):

Bacterial Sputum Culture. (2018). Labtestsonline.Org. https://labtestsonline.org/tests/sputum-

culture-bacterial

Boyles, S. (2016). Sodium deficiency tied to worse copd outcomes. Retrieved from

https://www.medpagetoday.org/clinical-context/copd/58916?vpass=1

Chen, C.-W., Chen, Y.-Y., Lu, C.-L., Chen, S. C.-C., Chen, Y.-J., Lin, M.-S., & Chen, W.

(2015). Severe hypoalbuminemia is a strong independent risk factor for acute respiratory

failure in COPD: a nationwide cohort study. *International Journal of Chronic*

Obstructive Pulmonary Disease, *10*, 1147–1154. https://doi.org/10.2147/COPD.S85831

Inacio, P. (2018, January 9). COPD Patients' High Glucose in Airways May Be Linked to

      Increased... Retrieved from https://copdnewstoday.com/2018/01/09/high-glucose-in

      airways-of-copd-patients-may-be-linked-to-increased-bacterial-infections/

Koo, H.-K., Kang, H. K., Song, P., Park, H. K., Lee, S.-S., & Jung, H. (2017). Systemic White

      Blood Cell Count as a Biomarker Associated with Severity of Chronic Obstructive Lung

      Disease. *Tuberculosis and Respiratory Diseases*, *80*(3), 304.

      https://doi.org/10.4046/trd.2017.80.3.304

RN Adult Medical Surgical COPD (n.d.). Scorm.Atitesting.Com. Retrieved

      April 3, 2020, from http://scorm.atitesting.com/courses/defaultID/57d807d8-8143-

      47d3-8da1-a30d2ac196fe/3/launchpage.html

Sarkar, M., Rajta, P., & Khatana, J. (2015). Anemia in chronic obstructive pulmonary disease:

      Prevalence, pathogenesis, and potential impact. *Lung India*, *32*(2), 142.

      https://doi.org/10.4103/0970-2113.152626

Sarah Bush Lincoln Health Center (2020). *Reference range (lab values).* Mattoon, IL.

Urinalysis (General & Microscopic). (n.d.). Www.Uncmedicalcenter.Org. Retrieved April 3,

      2020, from https://www.uncmedicalcenter.org/mclendon-clinical-laboratories/available-

      tests/urinalysis-general-microscopic/

Urine Specific Gravity. (2019, August 13). Ucsfhealth.Org. https://www.ucsfhealth.org/medical-

      tests/003587

Diagnostic Imaging

All Other Diagnostic Tests (10 points):

Chest X Ray: Date: 08/01/XX Time: 0520

Notable hyperinflation of bilateral lung fields and flattened diaphragm. Changes characteristic of atelectasis in bilateral bases. Abnormal area of density present in the left lung base, Suspicious of pneumonia.

Chest X Ray: Date: 08/02/XX Time: 1845

Extensive left-sided pleural effusion in the lower lung field. This is a change from the previous radiologic view on 08/01/XX. Hyperinflation of bilateral lung fields and flattened diaphragm remain unchanged. Atelectasis of right lung base is present.

Diagnostic Imaging Reference (APA):

RN Adult Medical Surgical COPD (n.d.). Scorm.Atitesting.Com. Retrieved

April 3, 2020, from http://scorm.atitesting.com/courses/defaultID/57d807d8-8143-

47d3-8da1-a30d2ac196fe/3/launchpage.html

Current Medications (10 points, 2 points per completed med)
5 <u>different</u> medications must be completed
Medications (5 required)

Brand/Generic	Levofloxacin/ Levaquin	Salmeterol/ Serevent Diskus	Albuterol/ Salbutamol sulphate	Prednisone/ Deltasone	Acetaminophen / Tylenol
Dose	750 mg	None Reported	1.25 mg/3 mL	10 mg	650 mg
Frequency	1 Tablet Daily	Every 12 Hours	Every 4 Hours	Every 12 Hours	Every 4 hours PRN
Route	PO	Inhalation	Inhalation	IV Bolus	PO
Classification	Fluoroquinolones	Bronchodilator	Bronchodilator	Glucocorticoid	Nonopioid analgesic
Mechanism of Action	Prevent or treat bacterial infection	Relaxes bronchial smooth-muscle cells, and increase airflow	Relaxes bronchial smooth-muscle cells and inhibit histamine release	Binds to glucocorticoid receptors and suppress inflammation	Relieve pain
Reason Client Taking	Treat pneumonia/ COPD	COPD	Treat pneumonia/ COPD	Treat pneumonia/ COPD	Pain
Contraindications (2)	Hypersensitivity to levofloxacin, myasthenia gravis	Hypersensitivity to salmeterol, Acute episodes of COPD	Hypersensitivity to albuterol, hypertension	Hypersensitivity to prednisone, hypertension	Hypersensitivity to acetaminophen, hepatic impairment
Side Effects/Adverse Reactions (2)	Anorexia, Depression, Restlessness	Generalized aches and pain, Cough, paradoxical bronchospasm	Chest Pain, hypertension, anorexia, bronchospasm	Restlessness, hypertension,	Fatigue, hypertension, dyspnea, plural effusion

Medications Reference (APA):

2020 Nurse's drug handbook. (2020). Jones & Bartlett Learning.

Assessment

Physical Exam (18 points)

GENERAL: **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	**Alertness/ Orientation:** Yes, A & O x 3 Pt was alert & orientated. Pt was able to verify his name, DOB, and location (hospital). **Distress:** No **Overall appearance:** Pt was well-groomed and had a clean look. Hair was brushed and groomed.
INTEGUMENTARY: **Skin color:** **Character:** **Temperature:** **Turgor:** **Rashes:** **Bruises:** **Wounds:** . **Braden Score:** **Drains present: Y☐ N ☒** **Type:**	**Skin color:** Normal for race **Character:** Dry **Temperature:** Cool **Turgor:** N/A **Rashes:** N/A **Bruises:** N/A **Wounds:** L Arm Bleed **Braden Score:** 18, Mild Risk
HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	**Head/Neck:** Thyroids are normal, No tracheal deviation, No bulging lymph nodes **Ears:** Symmetrical, tympanic membrane is pink and grey. **Eyes:** PERRLA pt's pupils constricted normally, EOM was normal. **Nose:** Symmetrical, no deviated septum, no drainage **Teeth:** No cavity
CARDIOVASCULAR: **Heart sounds:** **S1, S2, S3, S4, murmur etc.** **Cardiac rhythm (if applicable):** **Peripheral Pulses:** **Capillary refill:** **Neck Vein Distention: Y ☐ N ☒** **Edema Y ☐ N ☒** **Location of Edema:**	**Heart sounds:** Regular S1 and S2 sounds **Cardiac rhythm:** Normal **Peripheral Pulses:** Radial, brachial pulses were strong and equal **Capillary Refill:** Normal, fingertips blanched white in less than 3 seconds
RESPIRATORY: **Accessory muscle use: Y☒ N ☐** **Breath Sounds: Location, character**	**Accessory Muscle Use:** Yes, to help patient breathe. Pt also has a chest tube. **Breath Sounds:** Irregular **Location:** Posterior and anterior upper lobes **Character:** Occasional rhonchi, wheezes, short of breath at rest, nasal cannula of 5L of oxygen

	per nasal cannula. **Respiratory Rate:** 24

GASTROINTESTINAL:
Diet at home:
Current Diet
Height:
Weight:
Auscultation Bowel sounds:
Last BM:
Palpation: Pain, Mass etc.:
Inspection:
  Distention:
  Incisions:
  Scars:
  Drains:
  Wounds:
Ostomy: Y ☐   **N** ☒
Nasogastric: Y ☐   **N** ☒
  Size:
Feeding tubes/PEG tube   Y ☐   **N** ☒
  Type:
	Diet at home: Eats normal food
	Current Diet: Soft Diet
	Height: 173 cm
	Weight: 71 kg
	Auscultation Bowel sounds: Active in all 4 quadrants
	Last BM: N/A
	Palpation: Pain, Mass etc.: Abdomen is soft, no mass palpated, nontender
	Inspection:
	  Distention: N/A
	  Incisions: N/A
	  Scars: N/A
	  Drains: N/A
	  Wounds: L Arm Bleed

GENITOURINARY:
Color:
Character:
Quantity of urine:
Pain with urination: Y ☐   **N** ☒
Dialysis: Y ☐   **N** ☒
Inspection of genitals:
Catheter: Y ☐   **N** ☒
  Type:
  Size:
	Color: Yellow
	Character: Clear
	Quantity of urine: Normal 400mL per day
	Inspection of genitals: Unable to Assess

MUSCULOSKELETAL: **Neurovascular status:** **ROM:** **Supportive devices:** **Strength:** **ADL Assistance: Y** ☒ **N** ☐ **Fall Risk: Y** ☐ **N** ☒ **Fall Score: 15** **Activity/Mobility Status:** **Independent (up ad lib)** ☐ **Needs assistance with equipment** ☐ **Needs support to stand and walk** ☒	**Neurovascular status:** A & O x 3 Pt was alert & orientated. Pt was able to verify his name, DOB, and location (hospital). **ROM:** Equal strength in all extremities **Supportive devices:** Chest tube, incentive spirometer, and metered dose inhaler **Strength:** Equal strength in all extremities **ADL Assistance:** Pt is on bed rest, unable to leave the bed without assistance **Fall Score:** 15; Low Risk **Independent (up ad lib):** N/A **Needs assistance with equipment:** N/A **Needs support to stand and walk:** Yes

	Activity/Mobility Status: Pt is on bed rest, unable to assess her active/mobility status.
NEUROLOGICAL: **MAEW: Y** ☒ **N** ☐ **PERLA: Y** ☒ **N** ☐ **Strength Equal: Y** ☐ **N** ☐ **if no -** **Legs** ☐ **Arms** ☐ **Both** ☐ **Orientation:** **Mental Status:** **Speech:** **Sensory:** **LOC:**	**MAEW:** Equal strength in all extremities **PERRLA:** Yes, pupils constrict normally **Strength Equal:** Yes, Equal strength in all extremities **Orientation:** A & O x 3 Pt was alert & orientated. Pt was able to verify his name, DOB, and location (hospital). **Mental Status:** Alert and Orientated **Speech:** Clear **Sensory:** N/A **LOC:** Pt was alert and oriented
PSYCHOSOCIAL/CULTURAL: **Coping method(s):** **Developmental level:** **Religion & what it means to pt.:** **Personal/Family Data (Think about home environment, family structure, and available family support):**	**Coping method(s):** N/A **Developmental level:** Normal for age **Religion & what it means to pt.:** None Reported **Personal/Family Data:** Pt has a daughter; she visits him frequently.

Vital Signs, 1 set (5 points)

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
1220	96	144/92	24	37.3 C (A)	94%

Pain Assessment, 1 set (5 points)

Time	Scale	Location	Severity	Characteristics	Interventions
1220	Numeric Scale	None Reported	0	None Reported	Acetaminophen PRN

Intake (in mL)	Output (in mL)
Unspecified Liquid- 477 mL Sodium Chloride IV Fluid- 3 mL Input total: 480 mL	Void- 400 mL Output total: 400 mL

Intake and Output (2 points)

Nursing Diagnosis (15 points)
Must be NANDA approved nursing diagnosis

Nursing Diagnosis • Include full nursing diagnosis with "related to" and "as evidenced by" components	Rational • Explain why the nursing diagnosis was chosen	Intervention (2 per dx)	Evaluation • How did the patient/family respond to the nurse's actions? • Client response, status of goals and outcomes, modifications to plan.
1. Ineffective Airway Clearance (Nurseslabs, 2019)	Related to increased production of secretions as evidenced by pt coughing up greenish-yellow sputum. (Nurseslabs, 2019)	1. Observe characteristics of cough and sputum and demonstrate effective coughing and deep-breathing techniques. 2. Increase fluid intake to 2000 mL per day. (Nurseslabs, 2019)	The patient and daughter responded well to the nurse's action. The patient was happy he was not producing yellow-green sputum anymore. Goal met, the client's response to the intervention was positive because he was able to breath normally and had a clear patent airway.
2. Ineffective breathing pattern (Nurseslabs, 2019)	Related to retained secretions as evidenced by wheezes on auscultations on posterior and anterior upper lobes. (Nurseslabs, 2019)	1. Provide extra pillows for patient to help provide adequate lung expansion while sleeping. 2. Encourage pursed-lip breathing exercises. 3. Assist patient assume a comfortable position on the bed	The patient responded well to the nurse's action. He was able to breathe at a normal rate. Goal met, the patient's breathing pattern has improved and he was able to maintain his respiratory rate in normal ranges.

		to improve ventilation. (Nurseslabs, 2019)	

Other References (APA):

Nurseslabs (2019). *5+ Chronic Obstructive Pulmonary Disease (COPD) Nursing Care Plans.* Nurseslabs. https://nurseslabs.com/chronic-obstructive-pulmonary-disease-copd-nursing-care-plans/

Concept Map (20 Points) :

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Subjective Data

Pt states: "I have shortness of breath and chest pain. I also feel a tightness on my chest and a sharp and throbbing pain that started weeks ago."

Pt stated: "I feel 0 pain at the moment."

Nursing Diagnosis/Outcomes

1. Ineffective airway clearance related to increased production of secretions as evidenced by pt coughing up greenish-yellow sputum.
(Nurseslabs, 2019)
+ Goal Met: Client is no longer producing yellow-green sputum.
+ Goal Met: Client increased fluid intake (2000mL) daily.

2. Ineffective breathing pattern related to retained secretions as evidenced by wheezes on auscultations on posterior and anterior upper lobes.
+ Goal Met: Patient's respiratory rate is within normal range.
+ Goal Met: Patient no longer has shortness of breath at rest.

Objective Data

Pt had a left arm bleed.
Pt has equal strength in all extremities

Vital Signs: P: 96, B/P: 144/92, R: 24, T: 37.3 C (A), O: 94%, Pain: 0
Lab Results: RBC: 4.8, HgB: 9.3 Hct: 29
Platelets: 162, WBC: 13 Na-: 134, K+: 4.4, Cl-: 100, Glucose: 180, BUN: 22, Creatine: 1.0, Albumin: 3.0, Calcium: 9
Urinalysis: Color & Clarity:Clear/yellow, pH: 5.8, Specific Gravity: 1.002, Glucose: Negative, Protein: Negative, Ketones: Negative, WBC: 0, RBC: 0 Leukoesterse: Negative
Diagnostic Test: Chest X-Ray 08/01/XX, Chest X-Ray 08/02/XX

Patient Information

68-year-old male patient with a history of pneumonia and COPD was admitted to the hospital with dyspnea and coughing.

Nursing Interventions

1. Observe characteristics of cough and sputum and demonstrate effective coughing and deep-breathing techniques.
2. Increase fluid intake to 2000 mL per day.
3. Provide extra pillows for patient to help provide adequate lung expansion while sleeping.
4. Encourage pursed-lip breathing exercises.
5. Assist patient assume a comfortable position on the bed to improve ventilation.

(Nurseslabs, 2019)

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