N311 Care Plan # 2

Lakeview College of Nursing

Jenna Helton

Demographics (5 points)

Date of Admission 3/26/2020	Patient Initials H.G	Age 68	Gender Male
Race/Ethnicity Latino	Occupation Retired	Marital Status Widow	Allergies Ampicillin
Code Status Full Code	Height 5'8"	Weight 71 kg	

Medical History (5 Points)

Past Medical History: COPD

Past Surgical History: N/A

Family History: Unknown

Social History (tobacco/alcohol/drugs): Smokes: 1 pack q day for 30 years

Alcohol: 24 pack per week, Doesn't use any recreational drugs

Admission Assessment

Chief Complaint (2 points): Difficulty Breathing

History of present Illness (10 points): On March 26th, 2020, a pleasant sixty-eight year old widowed man came to the hospital with difficulty breathing. The patient's daughter had found him unconscious on the floor in his home. The patient has had COPD for the past ten years, but his difficulty breathing and shortness of breath has increased within the past week. He currently rates his pain a zero out of ten. The location with his difficulties lies within his lungs. He states that the difficulties occur at night and when he is up and walking around. He describes the breathing as feeling exhausted or overly tired. Walking and moving around makes his breathing harder and more difficult to catch his breath. The patient states that putting pillows behind his back when lying in bed and sitting down helps him breath better. He has tried to take nebulizer treatments and even turned his oxygen level to "6", but it hasn't helped any.

Primary Diagnosis

Primary Diagnosis on Admission (3 points): COPD

Secondary Diagnosis (if applicable): Pneumonia

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

Chronic Obstructive Pulmonary Disease, also known as COPD, is made up of three disorders: chronic bronchitis, hyperreactive airway disease, and emphysema. Chronic bronchitis is the production of mucus that is seen in the large and small airways. It causes hypoxia and cyanosis, and the person usually has a cough for 3 months of one year and must have it for 2 years total. Hypoxia is when there is vasoconstriction of the arteries, most commonly in the fingertips. Emphysema is when the alveoli remain open or extended to their max and won't release the carbon dioxide. Episodes of bronchoconstriction occur when there are irritants that enter into the lungs and to the bronchioles and alveoli. The alveoli also don't want to recoil once there is carbon dioxide in there. These types of changes to the alveoli and bronchioles are permanent pulmonary structures and won't get better. The walls of the bronchioles will become thicker, inflammation will change and lumens will constrict as the COPD progresses. "Inflammation causes stimulation of macrophages followed by accumulation of neutrophils, T lymphocytes, and cytokines." (Capriotti & Frizzell, pg 467, 2016) Mediators that come along and cause inflammation and damage lung structures are leukotrienes, interleukins, and tumor necrosis factor. Changes within the emphysema include an enzyme imbalance called proteolytic-antiproteolytic. The three corresponding factors that come from neutrophils and macrophages are proteases, elastases, and metalloproteinases.

Smoking is a factor that will release these enzymes into the body. Smoking also damages the respiratory cell membranes, arterial endothelial cells, natural antioxidants, and these enzymes. Pulmonary hypertension, also known as pulmonary arterial vasoconstriction, raises the resistance against the right ventricle and the main pulmonary artery. This will lead to hypertrophy, which will then become tired and fail, and then be called cor pulmonale. In a patient with cor pulmonale, you can see JVD, splenomegaly, ankle or sacral edema, ascites, or hepatomegaly. With high levels of CO2 in the body, the medulla with the chemoreceptors and respiratory center can become oversensitive. Hypoxia is what will take over the breathing of this patient rather than PCO2 levels. It is important for the patient to receive low doses of oxygen when starting oxygen therapy and gradually build up the amount of oxygen delivered to the lungs.

There are multiple signs and symptoms to look out for when a patient has COPD. Since COPD is a combination of three components, it is likely for the patient to experience those same signs and symptoms. These can include dyspnea, coughing, wheezing, hypoxia, clubbing of the fingers, cyanosis, right ventricular failure, and respiratory distress. Some physical signs to look for is the patient assumes the tripod position. This is when the patient will lean over a table or hard surface that is chest level. They will use their arms to lean on and begin to purse their lips and use their accessory muscles to help them breath better. They will usually assume this position if they are having difficulty breathing, and this helps open up their lungs a little better than just sitting up. Care providers will also use tactile fremitus to determine how efficient their lungs are expanding. Blue bloaters are people with chronic bronchitis that experience hypoxia and cyanosis. Pink puffers are people with good oxygen levels until later on in the disease, then purse their lips when exhaling.

In order to diagnose someone with COPD, they must do a pulmonary function test (PFT). This is where care providers will test the lungs to see how efficiently they work and how much oxygen they can hold. More options for testing would include a full CBC, chest x-ray, ECG, blood chemistry panel, CT and ABGs. If the patient has the start or a mild case of COPD, then they would more than likely need all of the tests like CBC, chest x-ray, etc., but not need the PFT. On the other hand, the patient will need all of these tests, including the PFT, if they have a severe case of COPD.

Treatment is essential for patients with COPD. The most important treatment would be smoking cessation. COPD's most triggered factors would be smoking or components related to it. Smoking makes the condition of the lungs, alveoli and bronchioles permanently damaged. Using patches or other medications to help stop the patient from smoking may be necessary. Medications are also a way to help control the COPD. These kinds of medications would include bronchodilators, inhaled steroids, combination inhalers, oral steroids, phosphodiesterase-4 inhibitors theophylline, or antibiotics. There are also options of lung therapies that may help patients with moderate or severe COPD. These include oxygen therapy and pulmonary rehabilitation program. A pulmonary rehabilitation program is working with the patient to keep them out of the hospital and educate them more on their condition. It also gives them a chance to pick up exercise training to help their lungs function better. Surgery is also a possibility if their condition is really severe. These would include lung volume reduction surgery, lung transplant and bullectomy. "In bullectomy, doctors remove bullae from the lungs to help improve air flow." (Mayo Clinic Staff, para 32, 2017)

Pathophysiology References (2) (APA):

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Capriotti, T., & Frizzell J.P., (2016). *Pathophysiology: introductory concepts and clinical perspectives.* (1st ed.). F.A. Davis Company.

Mayo Clinic Staff, (2017) COPD. *Mayo Clinic*, *1*(1), 1-2. https://www.mayoclinic.org/diseases-conditions/copd/diagnosis-treatment/drc-20353685

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	Admission Value	Today's Value	Reason for Abnormal Value
RBC	4.5-6.3	4.8		
Hgb	14-18	9.3		There is a possibility for the RBC level to be normal and the Hgb level to be low. In this case, there is a possibility for iron deficiency anemia. (Corbett & Banks, 2019)
Hct	41-51	29		"A patient with a low Hct needs adequate iron and protein in the diet so that the bone marrow can manufacture additional RBCs." (Corbett & Banks, 2019) The patient is currently NPO, which can be the cause of decrease in protein and iron levels. He also has signs of anorexia but without the weight change.
Platelets	140-440	162		N/A
WBC	4-10	13		There is a bacterial infection in the patient's body, which would be the pneumonia. (Corbett & Banks, 2019)
Neutrophils	2-6.9	Unknown		N/A
Lymphocytes	0.6-3.4	Unknown		N/A
Monocytes	0-8	Unknown		N/A
Eosinophils	0-0.5	Unknown		N/A
Bands	Unknown	Unknown		N/A

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

Lab	Normal Range	Admission Value	Today's Value	Reason For Abnormal
Na-	136-145	135		Hyponatremia can be caused from illnesses like pneumonia or urinary tract infections, which can be caused by dehydration. (Takashashi, 2017)
K+	3.5-5.1	4.4		N/A
Cl-	98-107	100		N/A
CO2	21-31	54		The patient has COPD, which eliminates the gas exchange of CO2 and O2 in the body. (Capriotti & Frizzell, 2016)
Glucose	74-109	180		Excessive Alcohol Use
BUN	7-25	22		N/A
Creatinine	0.7-1.2	1.0		N/A
Albumin	3.5-5.2	3.0		Albumin is the protein of the body. The patient's labs also state that he has low Hbg levels, which also has correlation with low protein levels. (Corbett & Banks, 2019)
Calcium	8.6-10.3	9.0		N/A
Mag	Unknown	Unknown		N/A
Phosphate	Unknown	Unknown		N/A
Bilirubin	0.3-1.0	Unknown		N/A
Alk Phos	40-130	Unknown		N/A

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

Lab Test	Normal Range	Value on Admission	Today's Value	Reason for Abnormal
Color & Clarity	**Clear and Yellow**	**Clear and Yellow**		**N/A**
pH	**4.5-8**	**5.8**		**N/A**
Specific Gravity	**1.000- 1.035**	**1.002**		**N/A**
Glucose	**Unknown**	**Unknown**		**N/A**
Protein	**Negative**	**Negative**		**N/A**
Ketones	**Negative**	**Negative**		**N/A**
WBC	**Negative**	**Negative**		**N/A**
RBC	**Negative**	**Negative**		**N/A**
Leukoesterase	**Negative**	**Negative**		**N/A**

(Urinalysis- Understand the Test & Your Results, 2016)

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

Test	Normal Range	Value on Admission	Today's Value	Explanation of Findings
Urine Culture	**Unknown**	**Unknown**		**N/A**
Blood Culture	**Negative**	**Negative**		**N/A**
Sputum Culture	**Negative**	**Positive for Streptococci and Staphlyococci**		**He has pneumonia.**
Stool Culture	**Unknown**	**Unknown**		**N/A**

(Bacterial Sputum Culture, 2018)

(Blood Culture. 2017)

Lab Correlations Reference (APA):

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

Blood Culture. (2017) Ucsfhealth.org. https://www.ucsfhealth.org/medical-tests/003744

Capriotti, T., & Frizzell J.P., (2016). *Pathophysiology: introductory concepts and clinical perspectives.* (1st ed.). F.A. Davis Company.

Corbett, J. V., & Banks A. D. (2019). *Laboratory tests and diagnostic procedures with nursing diagnoses.* (9th ed.). Pearson.

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

Takahaski, P. Y., (2017) Low blood sodium in older adults: a concern? *Mayo clinic. 1*(1), 1. https://www.mayoclinic.org/diseases-conditions/hyponatremia/expert-answers/low-blood-sodium/faq-20058465f

Urinalysis- Understand the Test & Your Results. (2016). Labtestsonline.org. https://labtestsonline.org/tests/urinalysis

Diagnostic Imaging

All Other Diagnostic Tests (10 points):

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

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

Medications (5 required)

Brand/Generic	Ceftriaxone/ Rocephin	Prednisone/ Apo-Prednisone (CAN), Deltasone Liquid Pred, etc.	Albuterol/ AccuNeb, ProAir Digihaler, etc.	Acetaminophen/ Tylenol, Abenol, Acephen, etc.	Nicotine/ Nicoderm, Habitrol, etc.
Dose	1 gram	10 mg	1.25/ 3 mg	650 mg	21 mg
Frequency	Q 12 hr	Q 12 hr	Q 4 hr	Q 4 hr PRN pain	T daily
Route	IV bolus	IV bolus	PO through Nebulizer	PO	Patch; Transdermal
Classification	Pharmacologic: Third-generation cephalosporin Therapeutic: Antibiotic	Pharmacologic: Glucocorticoid Therapeutic: Immunosuppressant	Pharmacologic: Adrenergic Therapeutic: Bronchodilator	Pharmacologic: Nonsalicylate, para-aminophenol derivative Therapeutic: Antipyretic, nonopioid analgesic	Pharmacologic: Nicotinic agonist Therapeutic: Smoking cessation adjunct
Mechanism of Action	Interferes with bacterial cell wall synthesis by inhibiting cross-linking of peptidoglycan strands. Peptidoglycan makes the cell membrane rigid and protective. Without it, bacterial cells rupture and die.	Bind to intracellular glucocorticoid receptors and suppresses inflammatory and immune responses by: inhibiting neutrophil and monocyte accumulation at inflammation site and suppressing their phagocytic and bactericidal activity,	Albuterol attaches to beta2 receptors on bronchial cell membranes, which stimulates the intracellular enzyme adenylate cyclase to convert adenosine triphosphate (ATP) to cyclic adenosine monophosphate (cAMP).	Inhibits the enzyme cyclooxygenase, blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system. Acetaminophen also acts directly on temperature-regulating center in the hypothalamus	Binds selectively to nicotinic-cholinergic receptors at autonomic ganglia, in the adrenal medulla, at neuromuscular junctions, and in the brain. By providing a lower dose of nicotine than cigarettes, this drug reduces nicotine

		stabilizing lysosomal membranes, suppressing antigen response of macrophages and helper T cells, and inhibiting synthesis of inflammatory response mediators, such as cytokines, interleukins, and prostaglandins.	This reaction decreases intracellular calcium levels. It also increases intracellular levels of cAMP. Together, these effects relax bronchial smooth-muscle cells and inhibit histamine release.	by inhibiting synthesis of prostaglandin E2.	craving and withdrawal symptoms.
Reason Client Taking	To treat pneumonia	To treat adrenal insufficiency and acute and chronic inflammatory and immunosuppressive disorders	To treat bronchospasm in patients with reversible obstructive airway disease	To relieve mild to moderate pain	To relieve nicotine withdrawal symptoms, including craving
Contraindications (2)	Calcium-containing I.V. solutions Hyperbilirubinemic or premature neonates	Hypersensitivity to prednisone or its components, systemic fungal infection	Hypersensitivity to albuterol or its components	Hypersensitivity to acetaminophen or its components, severe hepatic impairment, sever active liver disease.	Hypersensitivity to nicotine, its components, components of transdermal system or soy (mint flavor lozenges)
Side Effects/Adverse Reactions (2)	Headache Diarrhea	Hypertension Anorexia	Anxiety Chest pain	Abdominal Pain Plural Effusion	Dizziness Increased sputum production

(Jones & Bartlett Learning, 2020)

Medications Reference (APA):

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Jones & Bartlett Learning (2020), *2020 nurse's drug handbook* (19th ed.). Jones & Bartlett Learning.

Assessment

Physical Exam (18 points)

GENERAL: **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	 Alert and oriented to time, place, and person X3 Breathing heavily Well groomed and well kept
INTEGUMENTARY: **Skin color:** **Character:** **Temperature:** **Turgor:** **Rashes:** **Bruises:** **Wounds:** . **Braden Score:** **Drains present: Y☐ N ☒** **Type:**	 Normal for race Dry Normal Good; Not tenting; Less than 3 secs. None None None Mild Risk-20
HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	 Symmetrical and Lymph nodes non-palpable Pearly grey tympanic membrane PERRLA and wears glasses No turbinates, clear sinuses, no deviated septum, no polyps No decay and in good condition
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:**	S1 and S2 heard Regular Cardiac Rhythm Strong and equal pulses Less than 3 seconds N/A
RESPIRATORY: **Accessory muscle use: Y☒ N ☐** **Breath Sounds: Location, character**	 Diminished in the bases and occasional rhonchi with wheezes in both anterior and posterior upper lobes.

	Cough is present with production of greenish-yellowish tenacious sputum Sa02: 91% on 5 liters of O2 through nasal cannula.
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:**	 Regular Diet NPO 5'8" 71 kg Normal and present in all four quadrants 3/25/2020 N/A N/A N/A N/A N/A N/A N/A N/A
GENITOURINARY: **Color:** **Character:** **Quantity of urine:** **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒** **Inspection of genitals:** **Catheter: Y ☐ N ☒** **Type:** **Size:**	 Yellow Clear 250 cc Normal
MUSCULOSKELETAL: **Neurovascular status:** **ROM:** **Supportive devices:** **Strength:** **ADL Assistance: Y☐ N ☒** **Fall Risk: Y ☒ N☐** **Fall Score:** **Activity/Mobility Status:** **Independent (up ad lib) ☐** **Needs assistance with equipment ☐**	 Good and MAEW N/A Weak in lower extremities High Risk Assist x1 N/A N/A

Needs support to stand and walk☐	Assist x1
NEUROLOGICAL: **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☒ N ☐ if no -** **Legs ☐ Arms ☐ Both ☒** **Orientation:** **Mental Status:** **Speech:** **Sensory:** **LOC:**	 Weak Bilaterally X3 Alert and awake Clear No impairment Alert
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):**	 Daughter Appropriate for age No known religion Patient lives home alone but has his daughter to support him. He uses alcohol to cope with his wife's passing.

Vital Signs, 1 set (5 points)

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
05:05	100	150/94 mmHg	36 per minute	99.2 F	91% on 5 L O2 nasal cannula

Pain Assessment, 1 set (5 points)

Time	Scale	Location	Severity	Characteristics	Interventions
05:05	Numeric Scale 0-10	N/A	0/10	N/A	N/A

Intake and Output (2 points)

Intake (in mL)	Output (in mL)
480 mL- PO	**250 mL- Urine**

125 mL- IV **325 mL- PO** **460 mL- PO** **180 mL- PO** **Total- 1570 mL**	**300 mL- Urine** **320 mL- Urine** **350 mL- Urine** **Total- 1220 mL**

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. Decreased Gas Exchange	Related to COPD as evidenced by having a history of smoking, and using oxygen	1. Deliver humidified oxygen as prescribed, and monitor patient's response. **2**. Position the patient in high-Fowler position, with the patient leaning forward and	1. Goal met. Patient is receiving oxygen through nasal cannula. 2. Goal partially met. The patient is in high-Fowler's, but hasn't

		elbows propped on the over-the-bed table. Pad the over-the-bed table with pillows and blankets. Record the patient's response to positioning.	shown the nurses that he can lean in a tripod position when he is having difficulty breathing. We can still educated and remind him to try tripod position when he is having difficulty breathing.
2. Dyspnea	Related to COPD or airway constriction as evidenced by labored breathing.	1. Monitor pulse oximetry readings and titrate oxygen to keep SpO2 between 88% and 92% 2.Administer bronchodilator therapy as prescribed.	1. Goal met. The patient's 02 level was 91% upon admission and has stayed within the range. 2. Goal met. The patient has been using his incentive spirometer since being educated on the usage. He has also shown the nurses how to use it.

(Swearingen & Wright, 2019)

Other References (APA):

Swearingen, P. L., & Wright, J. D., (2019) *All-in-one nursing care planning resource: medical-surgical, pediatric, maternity, and psychiatric-mental health.* (5th ed.). Elsevier.

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Concept Map (20 Points)

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Subjective Data

Patient states that he has been having more trouble breathing within the past week. He rates his pain a zero out of ten. It is located in his lungs. The difficulty of breathing is intermittent, in which it becomes worse when he is up and about and during the night. He describes the breathing as feeling exhausted or overly tired. Walking and moving around makes his breathing harder and more difficult to catch his breath. The patient states that putting pillows behind his back when lying in bed and sitting down helps him breath better. He has tried to take nebulizer treatments and even turned his oxygen level to "6", but it hasn't helped any.

Nursing Diagnosis/Outcomes

1. Decreased Gas Exchange related to COPD as evidenced by having a history of smoking, and using oxygen
   a. Goal met. Patient is receiving oxygen through nasal cannula.
   b. Goal partially met. The patient is in high-Fowler's, but hasn't shown the nurses that he can lean in a tripod position when he is having difficulty breathing. We can still educated and remind him to try tripod position when he is having difficulty breathing.

2. Dyspnea related to COPD or airway constriction as evidenced by labored breathing.
   a. Goal met. The patient's 02 level was 91% upon admission and has stayed within the range.
   b. Goal met. The patient has been using his incentive

Objective Data

Client's Chief Complaint: He has COPD and pneumonia.
Vitals:
BP: 150/94mmHg
His BP is high
RR: 36 per minute
His RR is high
Temp: 99.2 F
Sp02%: 91%
Pulse: 90

Patient Information

A 68 year old male with a history of COPD is admitted for difficulty breathing. His daughter had found him unconscious in his home. He has pneumonia. He has a history of smoking one pack per day for 30 years, drinks a 24 pack per week, and doesn't use recreational drugs.

Nursing Interventions

1. Deliver humidified oxygen as prescribed, and monitor patient's response.
2. Position the patient in high-Fowler position, with the patient leaning forward and elbows propped on the over-the-bed table. Pad the over-the-bed table with pillows and blankets. Record the patient's response to positioning.
3. Monitor pulse oximetry readings and titrate oxygen to keep SpO2 between 88% and 92%
4. Monitor pulse oximetry readings

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