

# [﻿group case study: emphysema essay sample](https://assignbuster.com/group-case-study-emphysema-essay-sample/)

D. Z., a 65-year-old man, is admitted to a medical floor for exacerbation of his chronic obstructive pulmonary disease (COPD; emphysema). He has a past medical history of hypertension, which has been well controlled by Enalapril (Vasotec) for the past 6 years. He has had pneumonia yearly for the past 3 years, and has been a 2-pack-a-day smoker for 38 years. He appears as a cachectic man who is experiencing difficulty breathing at rest. He reports cough productive of thick yellow-green sputum. D. Z. seems irritable and anxious; he complains of sleeping poorly and states that lately feels tired most of the time. His vital signs (VS) are 162/84, 124, 36, 102 F, SaO2 88%. His admitting diagnosis is an acute exacerbation of chronic emphysema.

CHART VIEW   
Physician’s Orders   
Diet as tolerated   
Out of bed with assistance   
Oxygen (O2 ) to maintain Sa O2 of 90%   
IV of D5W 1/n NS with 20KCl meq/L to run at 50 ml/hr   
Continuous ECG monitoring   
Pulmonary function tests (PFT’s) in AM   
Arterial blood gases (ABGs) in AM   
CBC with differential and Na+ /K+ now   
Basic metabolic panel (BMP) now and fasting in AM   
Chest x-ray (CXR) on admit and QAM   
Sputum culture now (obtain culture prior to starting anbiotics) Albuterol 2. 5 mg plus ipratropium 250 mcg nebulizer treatment STAT Incentive Spirometery Q10x’s per hour while awake

1. Explain the pathophysiology of emphysema.   
Abnormal permanent enlargement of lung spaces distal to terminal bronchioles accompanied by destruction of walls without obvious fibrosis. This leads to decline in alveolar surface area available for gas exchange. Loss of alveoli leads to airflow limitation in 2 ways: first, loss of the alvoelar walls results in a decrease in elastic recoil (leads to airflow limitation). Second, loss of the alveolar supporting structure leads to airway narrowing, which further limits airflow.

2. Are D. Z.’s vital signs and SaO2 appropriate? If not, explain why. vital signs (VS) are 162/84, 124, 36, 102 F, SaO2 88%.   
Tachypnea and tachycardia indicates body is having trouble oxygenating tissues. SaO2 88% is too low. Orders are to administer O2 as needed to keep it > 90% HTN: part of the COPD pathway is pulmonary hypertension, which then leads to cor pulmonale (R ventricular hypertrophy) These vital signs are expected for an exacerbation, but not necessarily “ appropriate” (we would like to see oxygen sat above 90%, normal HR, RR, BP)

3. Describe a plan for implementing these physician’s orders. Administer oxygen via nasal cannula to get SaO2> 90% and put on continous ECG monitoring Call for lab draw for the following:   
Basic metabolic panel now and fasting in AM   
CBC with diff and Na+/K+   
ABG   
Sputum culture now   
Pulmonary function test (pre-albuterol)   
Albuterol 2. 5 mg plus ipratropium 250 mcg nebulizer treatment STAT IV of D5W 1/NS with 20KCl meq/L to run at 50ml/hr (set up IV while nebulizer going) Pulmonary funciton test (pre-albuterol)   
Chest x-ray QAM   
Can have breakfast as tolerated. Wait ~30 minutes before Incentive Spirometry.

4. Identify three independent nursing actions you would try to improve D. Z.’s oxygenation. Administer low flow oxygen (humidified) (nasal cannula)   
Sit upright (tripod; high fowlers if tripod not tolerated)   
Incentive spirometry   
Nebulizer treatments as perscribed   
Turn, cough, deep breathe

LABS are as follows:   
WBC-15   
RBC-10   
Hgb-37   
Hct-57   
Na+-126   
K+ -5. 2

5. Based on these results, prioritize your next actions.   
Priority 1: Potassium high   
Call provider to discuss discontinuing IV fluids with 20KCl and possibly adding diuretic (since BP also high) Monitor EKG   
Priority 2: WBC high   
Call provider to discuss culture+sensitivity and possible antibiotics Low sodium   
Expectd with high potassium, so if we decrease potassium (exp change IV fluids) then we can expect sodium excretion to slow down. Hct high (this is expected with COPD—body’s response to low oxygen) Hb high (this is expected with COPD—body’s response to low oxygen) RBC count (this is expected with COPD—body’s response to low oxygen)

6. Give an explantaion (rationale) for all abnormal results   
See above

CHART VIEW   
Medication Administration Record   
Methylprednisolone (Solu-Medrol) 125 mg IVP q8h   
Doxycycline (Doryx) 100 mg PO q12h for~ 10 days   
Azithromycin (Zithromax) 500 mg IVPB q24h for~ 2 days then 500 mg PO for~ 7 days Fluticasone/salmeterol (Advair) 100/50 mcg 2 puffs bid   
Heparin 4000 units subcut q12h   
Enalapril (Vasotec) 10mg PO q AM   
Albuterol 2. 5 mg/ipratropium 250 mcg nebulizer treatment q6hour

7. Indicate the expected outcome for D. Z. that is associated with each of the medications he is receiving. Methylprednisolone (Solu-Medrol) 125 mg IVP q8h   
Systemic corticosteroid   
Decreases inflammation   
Doxycycline (Doryx) 100 mg PO q12h for~ 10 days   
Antibiotic to treat infection   
Azithromycin (Zithromax) 500 mg IVPB q24h for~ 2 days then 500 mg PO for~ 7 days Antibiotic to treat infection   
Fluticasone/salmeterol (Advair) 100/50 mcg 2 puffs bid   
Corticosteroid/long acting bronchodilator   
Anti-inflammatory and dilation of bronchioles to assist in breathing. Heparin 4000 units subcut q12h   
Most patients admitted to hospital will be put on heparin due to immobility-related DVT Pt. also has high RBC countsmakes blood more viscous   
Enalapril (Vasotec) 10mg PO q AM   
ACE inhibitor to treat hypertention (he is previously on this) Albuterol 2. 5 mg/ipratropium 250 mcg nebulizer treatment q6hour Beta 2 agonist/anticholinergic   
Beta 2 agonist reduces bronchospasm (side effect of tachycardia) (for bronhiles—the small airways) Anticholinergic act as bronchodilators—for bronchi (large airways)

8. Since D. Z. is on azithromycin (Zithromax), what nursing actions need to be added to the plan of care? Select all that apply.   
a. Monitor IV site for inflammation or extravasation   
this is standard practice   
b. Assess liver function studies and bilirubin levels   
it’s hepatotoxic, so yes.   
c. Obtain a hearing test prior to initiating therapy   
may cause irreversible sensorineural hearing loss   
d. Carefully dilute the medication in the proper amount of solution   
Azithromycin is a drug that needs to be reconstituded/diluted. Either pharmacy or the RN will do this, depending on facility protocol e. Place D. Z. on intake and output   
this is standard practice   
f. Administer the medication over one-half hour   
no. should be given at minimum over 1 hour

LABS are back- Basic Metabolic Panel (BMP)   
Albumin: 4. 5 g/dL   
normal: 3. 5-5. 5 g/dL   
Alkaline phosphatase: 125 IU/L   
normal   
normal: 44-147 IU/L   
ALT (alanine aminotransferase): 30 IU/L   
normal: 10-40 IU/L   
AST (aspartate aminotransferase): 29 IU/L   
normal 10-40 IU/L   
BUN (blood urea nitrogen): 22 mg/dL   
high   
normal: 7-20 mg/dL   
Calcium: 8. 6 mg/dL   
normal: 8. 5-10. 2 mg/dL   
Chloride: 96 mmol/L   
normal: 95-105 mmol/L   
CO2 (carbon dioxide): 22 mmol/L   
normal= 20-29 mmol/L   
Creatinine: 1. 6 mg/dL \*\*   
high   
normal: 0. 6-1. 2 mg/dL (males)   
0. 5-1. 1 mg/dL (females)   
Glucose test: 110 mg/dL

9. Bases on the above lab results, describe (prioritize) your next actions and provide your rationale for your actions. Call provider—kidney function tests indicated because high creatinine and BUN Continue to monitor ALT and AST (higher side of normal)

Continue to monitor glucose (on high side, but expected with medications)

10. D. Z is ordered heparin 4000 units subcutaneous q12 hr. The following vial is available. How many milliliters will D. Z. receive? Shade in the dose on the tuberculin syringe. This is 5000 units/1mL. we want 4000 units: (4000/5000)= . 8mL

11. What are two of the most common side effects of bronchodilators? Tachycardia   
Fine tremors

13. D. Z. states he gets very hungry but after eating even a few bites he loses his appetite. What might be some of the reasons for his sudden loss of appetite? Identify four strategies that might improve his caloric intake. Increased work of breathing hwile eating causes him to lose appetite. Eat soft foods that are easy to swallow, thick soups. Colds foods might help you feel less full (smoothies, milkshakes). Clear airways prior to eating. Frozen foods so you don’t have to expend energy prepping meals. High protein, high calorie foods in smaller amounts often throughout day.

14. List six other educational topics that you need to explore with D. Z. Smoking cessation   
Dietwant to increase weight.   
Incentive spirometry at home   
Hand washing/infection prevention (avoid sick people, crowds) Vaccinations   
Follow-up appointments   
Medication regimine (complete antibiotic course. Teach about MDI etc.)

15. What other health care professional would probably be involved in D. Z.’s treatments and how? Dietician   
Physical therapist/occupational therapist   
Pulmonologist   
Psychologist   
Respiratory therapist

CASE STUDY PROGRESS   
D. Z.’s wife approaches you in the hallway and says, “ I don’t know what to do. My husband used to be so active before he retired 6 months ago. Since then he’s lost 35 pounds. He is afraid to take a bath, and it takes him hours to dress—that’s if he gets dressed at all. He has gone downhill so fast that it scares me. He’s afraid to do anything for himself. He wants me in the room with him all the time, but if I try to talk with him, he snarls and does things to irritate me. I have to keep working. His medical bills are draining all of our savings, and I have to be able to support myself when he’s gone. You know, sometimes I go to work just to get away from the house and his constant demands. He calls me several times a day asking me to come home, but I can’t go home. You may not think I’m much of a wife, but quite honestly, I don’t want to come home anymore. I just don’t know what to do.” 16. How would you respond to her statement? What Resources are available to them? Listen and don’t judge

Offer support   
Provide resources for family therapy   
Ask about additional support/care for husband. (provide low cost help alternatives) Resources for financial support for medical supplies/therapies.

17. List 2 other treatment options or patients with advanced emphysema/COPD and briefly describe what each option entails. Ginkgo biloba: a chinese herb that may strengthen lungs. Add to diet. Sulfur: used to reduce inflammation, mucus and increase O2 flow. Surgery (but not used on elderly)—bullectomy (removal of the large bullae (the dead space) from the lungs)