N431 Care Plan # 1

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N431: Adult Health II

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Demographics (3 points)

Date of Admission 06/07/2023	**Client Initials** OJ	**Age** 85	**Gender** M
Race/Ethnicity Caucasian	**Occupation** Retired construction	**Marital Status** Widowed	**Allergies** NKA
Code Status Full	**Height** 177.8 cm/ 5’10	**Weight** 61.2kg/135 lbs.	

Medical History (5 Points)

Past Medical History: Atrial fibrillation, coronary artery disease, heart disease, lung nodule, cellulitis of foot; right, and hyperlipidemia

Past Surgical History: Heart surgery-stent

Family History: Father-Heart Disease, Mother-Lung cancer, Sister-Bone Cancer

Social History (tobacco/alcohol/drugs including frequency, quantity and duration of use):

Tobacco-cigarettes, ½ pack per day, since age 14

Alcohol-2-3 beers everyday for the past 15 year.

Assistive Devices: Dentures

Living Situation: Lives at home alone

Education Level: The patient finished high school in the Army and has no learning barriers.

Admission Assessment

Chief Complaint (2 points): Shortness of breath

History of Present Illness – OLD CARTS (10 points):

The patient was presented to the emergency room on 06/07 with a report of shortness of breath. The patient has a history of heart failure, coronary heart disease, and smoking. The patient stated that it started 3 days prior 06/04 and he has had no other symptoms. No treatments were sought at home and no alleviating factors identified. The patient reports the shortness of breath upon

inspiratory and expiratory as a constant duration and with activity gets worse. On a numerical scale, the patient described the shortness of breath severity as an 8, being “pretty bad” than anything experienced before.

Primary Diagnosis

Primary Diagnosis on Admission (2 points): Acute exacerbation of heart failure

Secondary Diagnosis (if applicable): N/A

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

The heart is an organ that depends on the entirety of its chambers to be in rhythm. Therefore, damage to one side or portion of the heart eventually leads to effects on the other side, causing heart failure. There are several types of heart failure, including acute or chronic, systolic or diastolic dysfunction, high-output or low-output failure, and right-sided or left-sided heart failure (Capriotti, 2020). Earlier in the disease, clinical presentations can help determine which type of heart failure a patient is experiencing. However, late in the disease, it is hard to distinguish which heart failure is due to damage affecting other portions of the heart. The causes of heart failure include coronary artery disease, cardiomyopathy, diabetes, high blood pressure, arrhythmia, tobacco use, and alcohol use (Hinkle et al., 2021). Heart failure can cause complications like cardiac arrest, heart valve problems, pulmonary hypertension, and kidney or liver damage.

Heart failure symptoms include shortness of breath, chest pain, palpitations, fatigue, leg and abdomen swelling, weight gain, and a "hacking" cough (Capriotti, 2020). Symptoms of heart failure will continuously range from mild to severe or none at all due to progressively worsening over time, increasing symptoms. There are periods of exacerbation in heart failure; symptoms suddenly go from mild to severe, similar to asthma and an asthma attack.

In diagnosing heart failure, a comprehensive health history assesses social history, family history, medications, and other conditions. There are several laboratory tests to assess how well the heart is functioning. The ventricles will stretch in heart failure and cause a natural diuretic called Brain Natriuretic Peptide (BNP) to be elevated in the bloodstream, a great indicator of heart failure (Capriotti, 2020). Imaging will show heart enlargements, like a Chest X-Ray, an electrocardiogram showing the rhythm, and an echocardiogram measuring the size and function. An echocardiogram provides an ejection fraction of the heart by measuring the size and function, and in heart failure, the ejection fraction is 40% (Hinkle et al., 2021). A more invasive procedure can be done, like cardiac catheterization, in which a catheter is inserted into the coronary arteries, and it allows physicians to evaluate heart function.

After diagnosing heart failure, the patient needs education on lifestyle modifications like limiting fluid, sodium, cholesterol, and alcohol. Medications like diuretics, ACE inhibitors, angiotensin II receptor blockers (ARBs), beta-1- adrenergic blockers, or vasodilators to manage heart failure and help prevent further complications (Capriotti, 2020). Heart failure is managed to prevent further complications and to treat exacerbation. More invasive procedures like cardiac resynchronization therapy, intra-aortic balloon pumps, left ventricular assist devices, or cardiac transplantation are used in severe heart failure.

This nursing student's patient's primary diagnosis was an acute exacerbation of heart failure. The patient's medical and social history contributed to this diagnosis, including atrial fibrillation, coronary heart disease, lung nodules, hyperlipidemia, and heart disease. The patient had a history of lifelong smoking and alcohol use and currently smokes half a pack of cigarettes a day and two to three beers daily. The patient experienced shortness of breath, diminished lung sounds, and arrhythmia. The patient's BNP was severely elevated; however, his ejection fraction

was 60%. The patient also had other abnormal lab values from the medications used to manage heart failure, including potassium levels, glucose levels, and PT/INR bleeding times. An electrocardiogram showed atrial fibrillation with premature ventricular contractions. A chest X-ray revealed cardiomegaly and infiltration in the right lower lobe. All of these were expected findings due to history and heart failure. The patient took a beta blocker, anticoagulant, antihyperlipidemic, ACE inhibitor, and a loop diuretic as home medications for hypertension, reducing edema, preventing clots, and controlling lipid levels. A calcium channel blocker was added during this admission to help control the heart rate. Antibiotics were also used for treating the patient for infection, as evidenced by infiltration in the lower lobe of the lung and increased neutrophils. The primary intervention during this admission was educating the patient on the importance of making lifestyle changes and taking medications as prescribed to prevent exacerbations and further complications. The patient demonstrated an understanding of the importance of smoking and alcohol cessation, intaking adequate fluids while on a fluid-restriction diet and taking medications as often as prescribed.

Pathophysiology References (2) (APA):

Capriotti, T. (2020). *Davis Advantage for Pathophysiology: Introductory Concepts and Clinical Perspectives* (2nd ed.). F. A. Davis Company.

Hinkle, J. L., Cheever, K. H., & Overbaugh, K. (2021). *Brunner and Suddarth's Textbook of Medical-Surgical Nursing* (K. H. Cheever, K. Overbaugh, & J. L. Hinkle, Eds.). Lippincott Williams & Wilkins.

Laboratory Data (15 points)

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	**4.40-5.80 mcL**	**4.80 mcL**	**4.55 mcL**	Within normal limits.
Hgb	**13-16.5g/dL**	**15.4 g/dL**	**14.6 g/dL**	Within normal limits.
Hct	**38.0%-50.0%**	**47.1%**	**44.4%**	Within normal limits.
Platelets	**140-440mcL**	**179 mcL**	**155 mcL**	Within normal limits.
WBC	**4-12mcL**	**4-12 mcL**	**6.90mcL**	Within normal limits.
Neutrophils	**40-68%**	**75.3%**	**52%**	The neutrophils were elevated upon admission due to physical and emotional stress caused by shortness of breath. The patient also had infiltration noted in the right lower lob of the lung which was being treated with antibiotics. Neutrophil production is stimulated when the body has an infection, inflammation, trauma/stress, to help kill bacterial micro-organisms (Pagana, 2020). Neutrophils are increased to help protect the body when lymphocytes decrease making the body more susceptible for infection.
Lymphocytes	**19-49%**	**15.2%**	**32.6%**	The patient had inflammation and stress due to shortness of breath, which caused the lymphocytes to be suppressed (Pagana, 2020).
Monocytes	**3-13%**	**9.1%**	**11.4%**	Within normal limits.
Eosinophils	**0-8%**	**N/A**	**N/A**	Test not performed.
Bands	**0-5%**	**N/A**	**N/A**	Test not performed.

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-	**133-144 mmol/L**	**137 mmol/L**	**143 mmol/L**	Within normal limits.

K+	**3.5-5.1 mmol/L**	**4.4 mmol/L**	**3.2 mmol/L**	Diuretic therapy can cause a decrease in potassium levels because diuretics cause the body to excrete more sodium and water through the urine, which sometimes can cause potassium to be eliminated as well (Pagana, 2020). The patient is on diuretics and a fluid restriction due to heart disease.
Cl-	**98-107 mmol/L**	**102 mmol/L**	**102 mmol/L**	Within normal limits.
CO2	**21-31 mmol/L**	**24 mmol/L**	**31 mmol/L**	This level is on the higher side of normal CO2 levels. The patient had shortness of breath, which could cause this to be elevated in hyperventilation (Pagana, 2020). The patient also has heart failure which can cause hypercapnia, COPD, and is a smoker.
Glucose	**70-99 mg/dL**	**137 mg/dL**	**93 mg/dL**	The patient's glucose levels upon admission were elevated due to acute stress and the use of diuretic medication. Acute stress can cause the hormone cortisol to be released which in return triggers the liver to release glucose, increasing the blood glucose levels (Pagana, 2020). Diuretic therapy can increase glucose when the potassium is low in the body.
BUN	**7-25 mg/dL**	**19 mg/dL**	**26 mg/dL**	Within normal limits.
Creatinine	**0.50-1.20 mg/dL**	**0.82 mg/dL**	**0.79 mg/dL**	Within normal limits.
Albumin	**3.5-5.7 g/dL**	**4.8 g/dL**	**3.9 g/dL**	Within normal limits.
Calcium	**8.8-10.2 mg/dL**	**10.3 mg/dL**	**9.5 mg/dL**	Within normal limits.
Mag	**1.3-2.1 mEq/L**	**2.0 mEq/L**	**2.0 mEq/L**	Within normal limits.
Phosphate	**3.0-4.5 mg/dL**	**N/A**	**N/A**	Test not performed.
Bilirubin	**0.2-0.8 mg/dL**	**N/A**	**N/A**	Test not performed.

Alk Phos	**30-120 U/L**	**74**	**59**	Within normal limits.
AST	**0-35 units/L**	**22**	**24**	Within normal limits.
ALT	**4-36 units/L**	**17**	**17**	Within normal limits.
Amylase	**60-120 units/dL**	**N/A**	**N/A**	Test not performed.
Lipase	**0-160 units/L**	**N/A**	**N/A**	Test not performed.
Lactic Acid	**0.7-2.0 mmol/L**	**N/A**	**N/A**	Test not performed.
Troponin	**0.00**	**0.032**	**0.041**	Troponin can be increased in the patient for many reasons. The client has atrial fibrillation, coronary heart disease and heart failure. The patient's history effects cardiac output, the amount of blood flow to the heart and body, and how efficiently the heart pumps blood out to the organs, all which in return increase risks of heart failure and heart complications. High levels of troponin indicate heart failure (Pagana, 2020).
CK-MB	**3.5-5 mmol/L**	**N/A**	**N/A**	Test not performed.
Total CK	**98-106 mmol/L**	**N/A**	**N/A**	Test not performed.

Other Tests 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
INR	**0.8-1.1 secs**	**1.3 secs**	**N/A**	An elevated PT/INR indicates the blood is taking longer to clot, which causes an increased risk of bleeding (Pagana, 2020). The patient is on blood thinners which help prevent clots, too much of these drugs can make PT/INR elevated. The dosage

				of blood thinner medication the patient was taking at home compared to in the hospital has doubled, this can cause these levels to be elevated.
PT	**10-13 secs**	**15.3 secs**	**N/A**	An elevated PT/INR indicates the blood is taking longer to clot, which causes an increased risk of bleeding (Pagana, 2020). The patient is on blood thinners which help prevent clots, too much of these drugs can make PT/INR elevated. The dosage of blood thinner medication the patient was taking at home compared to in the hospital has doubled, this can cause these levels to be elevated.
PTT	**30-40 secs**	**N/A**	**N/A**	Test not performed.
D-Dimer	**<250 bg/mL <0.4mcg/mL**	**N/A**	**N/A**	Test not performed.
BNP	**<100 pg/mL**	**2,096 pg/mL**	**N/A**	An elevated BNP the more severe heart failure. BNP is released in response to atrial and ventricular stretches. The patient has heart failure, atrial fibrillation, and coronary artery disease which contribute to heart failure and an elevated BNP (Pagana, 2020).
HDL	**>55 mg/dL female >45 mg/dL male**	**46 mg/dL**	**N/A**	Within normal limits.
LDL	**<130 mg/dL**	**88 mg/dL**	**N/A**	Within normal limits.
Cholesterol	**<200 mg/dL**	**148 mg/dL**	**N/A**	Within normal limits.
Triglycerides	**Male 40-160 mg/dL Female35-135 mg/dL**	**72 mg/dL**	**N/A**	Within normal limits.
Hgb A1c	**Nondiabetic 4%to 5.9% Good diabetic control <7%**	**N/A**	**N/A**	Test not performed.

	Fair 8%to 9% Poor >9%			
TSH	**2-10 mU/L**	**N/A**	**N/A**	Test not performed.

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	**Yellow or clear**	**N/A**	**Yellow and clear**	Within normal limits.
pH	**5.0-9.0 units**	**N/A**	**N/A**	Test not performed.
Specific Gravity	**1.003-1.030units**	**N/A**	**N/A**	Test not performed.
Glucose	**Neg**	**N/A**	**N/A**	Test not performed.
Protein	**Neg**	**N/A**	**N/A**	Test not performed.
Ketones	**Neg**	**N/A**	**N/A**	Test not performed.
WBC	**Neg 0-5 hpf**	**N/A**	**N/A**	Test not performed.
RBC	**Neg 0-2 hpf**	**N/A**	**N/A**	Test not performed.
Leukoesterase	**negative**	**N/A**	**N/A**	Test not performed.

Arterial Blood Gas 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**
pH	**7.35-7.45**	**N/A**	**N/A**	Test not performed.
PaO2	**80-100 mmHg**	**N/A**	**N/A**	Test not performed.
PaCO2	**35-45 mmHg**	**N/A**	**N/A**	Test not performed.

HCO3	**22-26 mEq/L**	**N/A**	**N/A**	Test not performed.
SaO2	**95-100%**	**N/A**	**N/A**	Test not performed.

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	**Negative <10,000 colonies/ml Positive >100,000 colonies/ml**	**N/A**	**N/A**	Test not performed.
Blood Culture	**Negative**	**N/A**	**N/A**	Test not performed.
Sputum Culture	**Normal upper respiratory tract**	**N/A**	**N/A**	Test not performed.
Stool Culture	**Normal intestinal flora**	**N/A**	**N/A**	Test not performed.

Lab Correlations Reference (1) (APA):

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2020). *Mosby's diagnostic and laboratory test reference* (15th ed.). Mosby.

Diagnostic Imaging

All Other Diagnostic Tests (5 points):

06/07/2023:

Chest XR- Impression findings- Cardiomegaly and infiltration noted in the right lower lobe, pneumonia cannot be excluded. An irregular border pulmonary nodule in the right lower lobe measuring 21 mm x 11 mm.

EKG 12 lead- Atrial fibrillation, rapid ventricular response with premature ventricular or aberrantly conducted complexes.

Transthoracic echocardiogram- Ejection fraction 60%

Diagnostic Test Correlation (5 points):

Chest XR- The purpose of this chest x-ray was to identify possible causes of shortness of breath in the patient, including pneumonia, emphysema, and fluid buildup in the lung. An enlarged heart can lead to shortness of breath and edema; however, this patient was in an exacerbation of the shortness of breath compared to the regular causes of heart failure.

The chest x-ray showing cardiomegaly was an expected finding due to the patient's heart failure. The patient has a diagnosis of the pulmonary nodule previously and is a current smoker. The infiltration shown in the right lower lobe did not rule out pneumonia and provided that infection could be possible.

EKG 12 lead- An EKG is done to assess heart rate and rhythm. This can detect heart attacks, heart blocks, and abnormal heart rhythms causing heart failure.

The EKG showing atrial fibrillation correlates with the patient's heart failure and damage leading to decreased cardiac output causing the rapid ventricular rate. The patients' history of heart failure, coronary artery disease, and atrial fibrillation all contributed damage to the heart and its cycle.

Transthoracic echocardiogram- An echocardiogram is used to rule out abnormal heart valves by showing how blood flows through the heart. The echocardiogram showed the internal structures

of the chest cavity. The ejection fraction being 60% is surprising for this patient with heart failure, chronic obstructive pulmonary disease, atrial fibrillation and being a smoker.

Diagnostic Test Reference (1) (APA):

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2020). *Mosby's diagnostic and laboratory test reference* (15th ed.). Mosby.

Current Medications (10 points, 1 point per completed med)
10 <u>different</u> medications must be completed

Home Medications (5 required)

Brand/ Generic	Metoprolol succinate (Toprol-XL)	apixaban (Eliquis)	atorvastatin calcium (Lipitor)	Lisinopril (Prinivil)	Furosemide (Lasix)
Dose	25 mg	2.5 mg	40 mg	5 mg	40 mg
Frequency	½ tab Daily	Prescribed-2x daily (Patient only takes one time daily)	Prescribed-Once nightly (patient reported he takes all meds in the morning)	Once daily	Prescribed-2x daily (patient reported he only takes once daily)
Route	Oral	oral	oral	Oral	Oral
Classification	Pharmacological: beta1 adrenergic blocker Therapeutic: Antianginal, antihypertension (Jones & Bartlett Learning, 2022)	Pharmacologic: Factor Xa inhibitor Therapeutic: Anticoagulant (Jones & Bartlett Learning, 2022)	Pharmacologic: HMG-CoA reductase inhibitor Therapeutic: Antihyperlipidemic (Jones & Bartlett Learning, 2022)	Pharmacological: Angiotensin-converting enzyme (ACE) inhibitor Therapeutic: Antihypertensive (Jones & Bartlett Learning, 2022)	Pharmacological: Loop Diuretics Therapeutic: Antihypertensive, diuretic (Jones & Bartlett Learning, 2022)

Mechanism of Action	"Inhibits stimulation of beta-1 receptor sites, located mainly in the heart, resulting in decreasing cardiac excitability, cardiac output, and myocardial oxygen demand. Helps reduce blood pressure by decreasing renal release of renin" (Jones & Bartlett Learning, 2022).	"Inhibits free and clot-bound factor Xa and prothrombinase activity. Although apixaban has no direct effect on platelet aggregation, it does no direct effect on platelet aggregation induced by thrombin" (Jones & Bartlett Learning, 2022).	"Reduces plasma cholesterol and lipoprotein levels by inhibiting HMG-CoA reductase and cholesterol synthesis in the liver and by increasing to the number of LDL receptors on liver cells to enhance LDL uptake and breakdown" (Jones & Bartlett Learning, 2022).	"May reduce blood pressure by inhibiting conversion of angiotensin I to angiotensin II" (Jones & Bartlett Learning, 2022).	"Inhibits sodium and water reabsorption in the loop of Henle and increases urine formation. As the body's plasma volume decreases, aldosterone production increases, which promotes sodium reabsorption and the loss of potassium and hydrogen ions" (Jones & Bartlett Learning, 2022).
Reason Client Taking	For hypertension and heart failure	To prevent blood clots due to being high risk, many contributing factors like CAD.	To help control lipids levels	To reduce blood pressure	To reduce edema cause by heart failure
Contraindications (2)	Heart block greater than first degree, sinus bradycardia (Jones & Bartlett Learning, 2022)	Active pathological bleeding, prosthetic heart valves (Jones & Bartlett Learning, 2022)	Active hepatic disease, persistent rise in serum transaminase levels (Jones & Bartlett Learning, 2022)	Electrolyte imbalance, heart/blood vessel problems (Jones & Bartlett Learning, 2022)	Anuria, Addison's disease, gout, liver disease (Jones & Bartlett Learning, 2022)
Side Effects/Adve	Cardiac arrest, heart failure,	Syncope, ecchymosis	Arrhythmias, palpitations,	Hyponatremia, myocardial	Hypomagnesemia,

rse Reactions (2)	leukopenia		orthostatic hypotension	infarction	hyponatremia
Nursing Considerations (2)	"Use cautiously in patients with angina or hypertension who have congestive heart failure because beta blockers can worsen heart failure. Before starting therapy expect to give an ACE inhibitor, digoxin, and a diuretic to stabilize patient" (Jones & Bartlett Learning, 2022).	"Know to discontinue at least 48 hours prior to invasive procedure with a high hemorrhage risk. If discontinued prematurely and adequate alternative anticoagulation is not present, the risk of thrombosis substantially increases. Know that this should not be given to patients with severe hepatic liver dysfunction "(Jones & Bartlett Learning, 2022).	"May be used with colestipol or cholestyramine for additive antihyperlipidemic effects. Use cautiously in patients who consume substantial quantities in of alcohol or have history of liver disease because use of this drug increases risk of liver dysfunction" (Jones & Bartlett Learning, 2022).	"Use cautiously in patients with fluid volume deficit, heart failure, impaired renal function, or sodium depletion. Monitor if patient has a persistent nonproductive cough, which is an adverse effect" (Jones & Bartlett Learning, 2022).	"Expect to discontinue furosemide at maximum dosage if oliguria persists for more than 24 hours. Older adults are more susceptible to hypotensive and electrolyte altering effects, causing a greater risk for thromboembolism and shock" (Jones & Bartlett Learning, 2022).
Key Nursing Assessment(s)/Lab(s) Prior to Administration	Assess blood pressure and heart rate prior to administering. Assess EKG due to risk of AV block (Jones & Bartlett	Assess for signs and symptoms of bleeding and implement bleeding precautions (Jones & Bartlett	Monitor lipid levels, implement fall precautions due to concentration, alertness and vision potentially being affected (Jones & Bartlett Learning, 2022).	"Assess blood pressure before giving and periodically in between. Monitor serum creatinine, potassium and other	"Obtain patient's weight before and periodically during furosemide therapy to weight loss. Monitor blood

	Learning, 2022).	Learning, 2022).		electrolytes because use of this medication can cause dehydration as well as hepatic function" (Jones & Bartlett Learning, 2022).	pressure and hepatic and renal function including BUN, blood glucose, and serum creatinine" (Jones & Bartlett Learning, 2022).
Client Teaching Needs (2)	"Take it at the same time immediately after same meal every day. If pulse rate is below 60 bpm or significantly lower than normal rate of patient to notify physician immediately" (Jones & Bartlett Learning, 2022).	"Bleeding precautions and risk. Take medication two times daily as prescribed, and how medication compliance can help reduce exacerbations" (Jones & Bartlett Learning, 2022).	"Educate and emphasize this is to be used in adjunct with a low cholesterol diet. Take at the same time every day" (Jones & Bartlett Learning, 2022).	"Take it at the same time every day and as prescribed. Do not use salt substitutes containing potassium. Change positions slowly to avoid orthostatic hypotension" (Jones & Bartlett Learning, 2022).	"Take the last dose of furosemide several hours before bedtime to avoid sleep interruption from diuresis. Caution about drinking alcohol beverages, standing for prolonged periods, and exercising in hot weather" (Jones & Bartlett Learning, 2022).

Hospital Medications (5 required)-

<u>One medication is repeated-no other medications to put that patient was taking</u>

Brand/ Generic	Cefdinir (Omnicef)	empagliflozin (Jardiance)	Azithromycin (Zithromax)	Diltiazem (Cardizem)	apixaban (Eliquis)
Dose	300 mg	10 mg	250 mg	30 mg	5 mg
Frequency	2x daily	Daily	Every 24 hours	4x daily	2x daily

Route	Oral	oral	Oral	oral	oral
Classification	Pharmacological: Third-generation cephalosporin Therapeutic: Antibiotic (Jones & Bartlett Learning, 2022)	Pharmacologic: Sodium glucose co-transporter 2 inhibitor Therapeutic: Antidiabetic (Jones & Bartlett Learning, 2022)	Pharmacologic: Macrolide Therapeutic: Antibiotic (Jones & Bartlett Learning, 2022)	Pharmacological: Calcium channel blocker Therapeutic: antianginal, antiarrhythmic, antihypertensive (Jones & Bartlett Learning, 2022)	Pharmacologic: Factor Xa inhibitor Therapeutic: Anticoagulant (Jones & Bartlett Learning, 2022)
Mechanism of Action	"Interferes with bacterial cell wall synthesis by inhibiting the final step in the cross-linking of peptidoglycan strands. Without it, bacterial cells rupture and die" (Jones & Bartlett Learning, 2022).	"Inhibits sodium glucose co-transporter 2 in the kidneys, which prevents glucose reabsorption. This decrease blood glucose levels" (Jones & Bartlett Learning, 2022).	"Binds to ribosomal subunit of susceptible bacteria, blocking peptide translocation and inhibiting RNA-dependent protein synthesis" (Jones & Bartlett Learning, 2022).	"Diltiazem inhibits calcium movement into coronary and vascular smooth-muscle cells by blocking slow calcium channels in cell membranes. Inhibit smooth-muscle cell contractions which decreases myocardial oxygen and slows AV conduction time" (Jones & Bartlett	"Inhibits free and clot-bound factor Xa and prothrombinase activity. Although apixaban has no direct effect on platelet aggregation, it does no direct effect on platelet aggregation induced by thrombin" (Jones & Bartlett Learning, 2022).

				Learning, 2022).	
Reason Client Taking	For infection; patient had high white blood count, lymphocytes as well as infiltration in the lung.	For heart failure	For infection- infiltrates in lung, elevated neutrophils	To control heart rate. Patient has atrial fibrillation with RVR.	To prevent blood clots due to being high risk, many contributing factors like CAD.
Contraindications (2)	Allergy to penicillin, kidney disease, intestinal problems (Jones & Bartlett Learning, 2022)	Congestive heart failure or hypovolemia, urinary tract infection (Jones & Bartlett Learning, 2022)	Infection of c.diff and experiencing diarrhea, low magnesium, torsade de pointes (Jones & Bartlett Learning, 2022)	Acute MI, Liver disease, low blood pressure/slow heart rate (Jones & Bartlett Learning, 2022)	Active pathological bleeding, prosthetic heart valves (Jones & Bartlett Learning, 2022)
Side Effects/Adverse Reactions (2)	Leukopenia, dizziness (Jones & Bartlett Learning, 2022)	Hypotension, upper respiratory infection (Jones & Bartlett Learning, 2022)	Nausea, vomiting, diarrhea/loose stools (Jones & Bartlett Learning, 2022)	Renal failure, PVCs, sinus arrest (Jones & Bartlett Learning, 2022)	Syncope, ecchymosis (Jones & Bartlett Learning, 2022)
Nursing Considerations (2)	"Monitor patient closely for diarrhea and pseudomembranous colitis. Also assess for evidence of superinfections" (Jones & Bartlett Learning, 2022).	"Assess patients' volume status and correct if needed. Monitor for urinary tract infections, especially those with a history of such. If	"Older adults are more susceptible to drug effects on QT interval. Be aware this drug can possibly affect oral anticoagul	"Keep emergency equipment and drugs available. This drug is mainly metabolized in liver and excreted in kidneys. Use cautiously and monitor	"Know to discontinue at least 48 hours prior to invasive procedure with a high hemorrhage risk. Monitor patient for bleeding"

		present, notify prescriber" (Jones & Bartlett Learning, 2022).	ant" (Jones & Bartlett Learning, 2022).	lab values" (Jones & Bartlett Learning, 2022)	(Jones & Bartlett Learning, 2022).
Key Nursing Assessment(s)/ Lab(s) Prior to Administration	"Allergy for penicillin. Monitor elevated PT or PTT with use of drug due to potential risk of bleeding" (Jones & Bartlett Learning, 2022).	"Assess serum creatinine, prior to starting therapy as this drug can have adverse renal effects. Assess for dizziness, lightheadedness, fainting in patient after taking this drug" (Jones & Bartlett Learning, 2022).	"Be sure culture and sensitivity test has been collected before starting antibiotic. Monitor bowel elimination" (Jones & Bartlett Learning, 2022).	"Assess blood pressure and heart rate prior to administering. Assess ECG prior or have patient on continuous heart monitor" (Jones & Bartlett Learning, 2022).	"Assess blood pressure and heart rate prior to administering. Assess EKG due to risk of AV block" (Jones & Bartlett Learning, 2022).
Client Teaching Needs (2)	"This may cause stools to be a reddish color. Report symptoms of severe diarrhea and that bloody stools 2 or more months after therapy can be serious needing fast treatment"	"Teach patient if they begin to start developing dehydration, has onset of hunger or thirst, or notices change in mental status to notify prescriber	"Consult prescriber before taking OTC drugs, including antacids. Warn abdominal pain and loose, watery stools may occur. If diarrhea	"Avoid standing up fast, may cause dizziness and lightheadedness. Do not take herbal medications containing St. John's wort" (Jones & Bartlett	"Bleeding precautions and risk, to keep taking twice daily at home and importance on medication compliance. Make sure keeping

	(Jones & Bartlett Learning, 2022).	immediately. Patient needs to take drug in the morning and understand this is not a replacement for diet and exercise" (Jones & Bartlett Learning, 2022).	persists or becomes severe, contact prescriber" (Jones & Bartlett Learning, 2022).	Learning, 2022).	appointments with doctors and lab" (Jones & Bartlett Learning, 2022).

Medications Reference (1) (APA):

Jones & Bartlett Learning. (2022). *2022 Nurse's drug handbook* (19th ed.). Jones & Bartlett Learning.

Assessment

Physical Exam (18 points) – HIGHLIGHT ALL PERTINENT ABNORMAL FINDINGS

GENERAL: **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	The patient is alert and oriented to the person, place, and time, well groomed. No acute distress, some worries about being discharged but other than that no complaints of pain, etc.
INTEGUMENTARY: **Skin color:** **Character:** **Temperature:** **Turgor:** **Rashes:** **Bruises:** **Wounds:** . **Braden Score: 21** **Drains present: Y☐ N ☒** **Type:**	Skin color white and pink with a suntan due to being outside, all usual for ethnicity. Skin warm and dry upon palpitation. No rashes, lesions, or bruising. Normal quantity, distribution, and texture of hair. Skin turgor demonstrates normal mobility. No wounds present. Braden score is 21.

HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	Head and neck are symmetrical, there is an upper chest protrusion that the patient stated was genetic and present since birth. Ears have no visible drainage, lumps, or lesions bilaterally. Hearing is intact. Eyes have no visible drainage bilaterally, bilateral sclera white, bilateral conjunctiva pink, bilateral EOMs intact. Vison intact. Nose has no visible drainage, lumps, or rashes. Oral mucosa is pink. Patient uses dentures.
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 auscultated. Normal heart rate-96 beats/min. Irregular pattern-atrial fibrillation.. Peripheral pulses are +2, capillary refill is less than 3 seconds bilaterally in fingers. (Toes not assessed at this time, patient had shoes on) Ankles were assessed and palpated showing no edema bilaterally.
RESPIRATORY: **Accessory muscle use: Y☐ N ☒** **Breath Sounds: Location, character**	Patient has diminished lung sounds anterior/posterior and bilaterally. Inspiratory fine crackles noted upon auscultation of lower lobes bilaterally.
GASTROINTESTINAL: **Diet at home: general** **Current Diet: cardiac** **Height: 5'10** **Weight:135 lbs** **Auscultation Bowel sounds:** **Last BM: 06/09** **Palpation: Pain, Mass etc.:** **Inspection:** **Distention:** **Incisions:** **Scars:** **Drains:** **Wounds:** **Ostomy: Y ☐ N ☒** **Nasogastric: Y ☐ N ☒** **Size:** **Feeding tubes/PEG tube Y ☐ N ☒** **Type:**	The patients' diet at home is general and a cardiac diet currently. Height: 5'10. Weight: 135 lbs. Bowel sounds normoactive in all four quadrants. Patient stated the last bowel movement was 06/08. Abdomen is soft, without tenderness and masses in all four quadrants. No distention, incisions, drains, or wounds upon inspection of abdomen.
GENITOURINARY: **Color:**	Urine was not observed but stated to be clear and yellow by patient. Quantity of urine was not

Character: **Quantity of urine:** **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒** **Inspection of genitals:** **Catheter: Y ☐ N ☒** **Type:** **Size:**	measured but the patient had 2 urine occurrences during shift. Patient denied pain with urination. No catheter or dialysis. Genitals were not inspected.
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 ☐** **Needs support to stand and walk ☐**	No cyanosis observed in nailbed. All extremities demonstrate active and full range of motion. No uses of supported devices. No ADL assistance. Patient is a fall risk due to fall score, but patient is up and independent without assist or bed alarm. Fall score-86
NEUROLOGICAL: **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☐ N ☒ if no -** **Legs ☐ Arms ☐ Both ☒** **Orientation: x4** **Mental Status:** **Speech:** normal rate and rhythm **Sensory:** **LOC:**	Strength is equal in all extremities. The patient is alert and oriented x4. The patient demonstrated normal cognition, speech, sensory, and level of consciousness.
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):**	Patient stated his coping methods are talking to his siblings, talking to friends and keeping busy, and drinking beer. Developmental level is integrity vs despair. Patient is religious but stated he has his own practicing beliefs. The patient lives alone with family close by. The patient has a good support system and home environment keeps him active and busy.

Vital Signs, 2 sets (5 points) – HIGHLIGHT ALL ABNORMAL VITAL SIGNS

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
0700	99	128/75	16	98.1℉	95% on room

				(36.76C)	air
1145	96	136/92	16	96˚F	97% room air

Vital Sign Trends: Stable. At 1145 vitals, blood pressure was 136/96. This is not an abnormal vital to be concerned with, the patient was worked up due to discussing cardiac catheterization with the provider.

Pain Assessment, 2 sets (2 points)

Time	Scale	Location	Severity	Characteristics	Interventions
0700	Numeric	N/A	0	N/A	N/A
1145	Numeric	N/A	0	N/A	N/A

IV Assessment (2 Points)

IV Assessment	Fluid Type/Rate or Saline Lock
Size of IV: 20 gauge **Location of IV:** left posterior forearm **Date on IV:** 06/07/23 **Patency of IV:** **Signs of erythema, drainage, etc.:** **IV dressing assessment:**	The patient has a 20-gauge intravenous catheter in the left posterior forearm that was placed on 06/07/23. The IV is patent, with no signs of erythema, drainage, or swelling. The IV dressing is transparent, clean, dry, and intact. Flushes well, no fluids running and is a Saline lock.

Intake and Output (2 points)

Intake (in mL)	Output (in mL)
720 mL	Unmeasurable/unassessed, 2x urine occurrences

Nursing Care

Summary of Care (2 points)

Overview of care: This student RN arrived at the medical surgical unit of 4E around 0800. The student introduced herself to RN Rachel and the patient. This student looked at the patients' history in the charts and then administered morning medications. The patient's vitals were taken at 1145 with all normal vitals. This student and RN Rachel provided education to the patient on the benefits of cardiac catheterization.

Procedures/testing done: The patient had no labs/testing done during this shift.

Complaints/Issues: The patient had no complaints. There were issues expressed by the patient in regard to going home and not wanting the cardiac catheterization procedure. By the end of this student's shift the patient was asking to speak to the doctor to sign consent.

Vital signs (stable/unstable): Stable

Tolerating diet, activity, etc.: Diet is tolerated well. Patient had complaints of the cardiac diet but understood the importance of adhering to a low sodium diet. Activity is great, patient is up and independent.

Physician notifications: Many notifications were made to the physician in regard to wanting to speak about the heart catheterization the patient was refusing.

Future plans for client: After the patient contemplating the heart catheterization for most of the day, the patient decided to be transferred and to allow the procedure. Plans for this procedure to happen were beginning to be initiated.

Discharge Planning (2 points)

Discharge location: Home

Home health needs (if applicable): N/A

Equipment needs (if applicable): N/A

Follow up plan: The patient will need to follow up with their primary cardiologist.

Education needs: Medication adherence is tremendous educational need in this patient. The patient was prescribed two medications to be taken twice daily and stated he takes five current medications, once daily, and in the morning. The patient stated to stop taking some medications prescribed but was taking ones to help manage his HF and COPD, just not taking some appropriately. Education on fluid restriction and the amount of fluid the patient is limited to a day and how to monitor output.

Nursing Diagnosis (15 points)
Must be NANDA approved nursing diagnosis and listed in order of priority

Nursing Diagnosis • Include full nursing diagnosis with "related to" and "as evidenced by" components • Listed in order by priority – highest priority to lowest priority pertinent to this client	**Rationale** • Explain why the nursing diagnosis was chosen	**Interventions (2 per dx)**	**Outcome Goal (1 per dx)**	**Evaluation** • How did the client/family respond to the nurse's actions? • Client response, status of goals and outcomes, modifications to plan.
1. Impaired gas exchanged related to altered blood flow as evidence by dyspnea.	This nursing diagnosis was chosen due to patient presenting to the emergency room with shortness of breath. The patient has altered blood flow	1. Maintain head of bed elevated at 45 degrees, as patient tolerates to assist with lung expansion. 2. Encourage and assist with coughing and deep	1. Patient will demonstrate improvement in respiratory status.	This student educated the patient on the benefit of having the head of bed elevated to ease their breathing. The patient demonstrated how to use an incentive spirometer as a deep breathing exercise. The

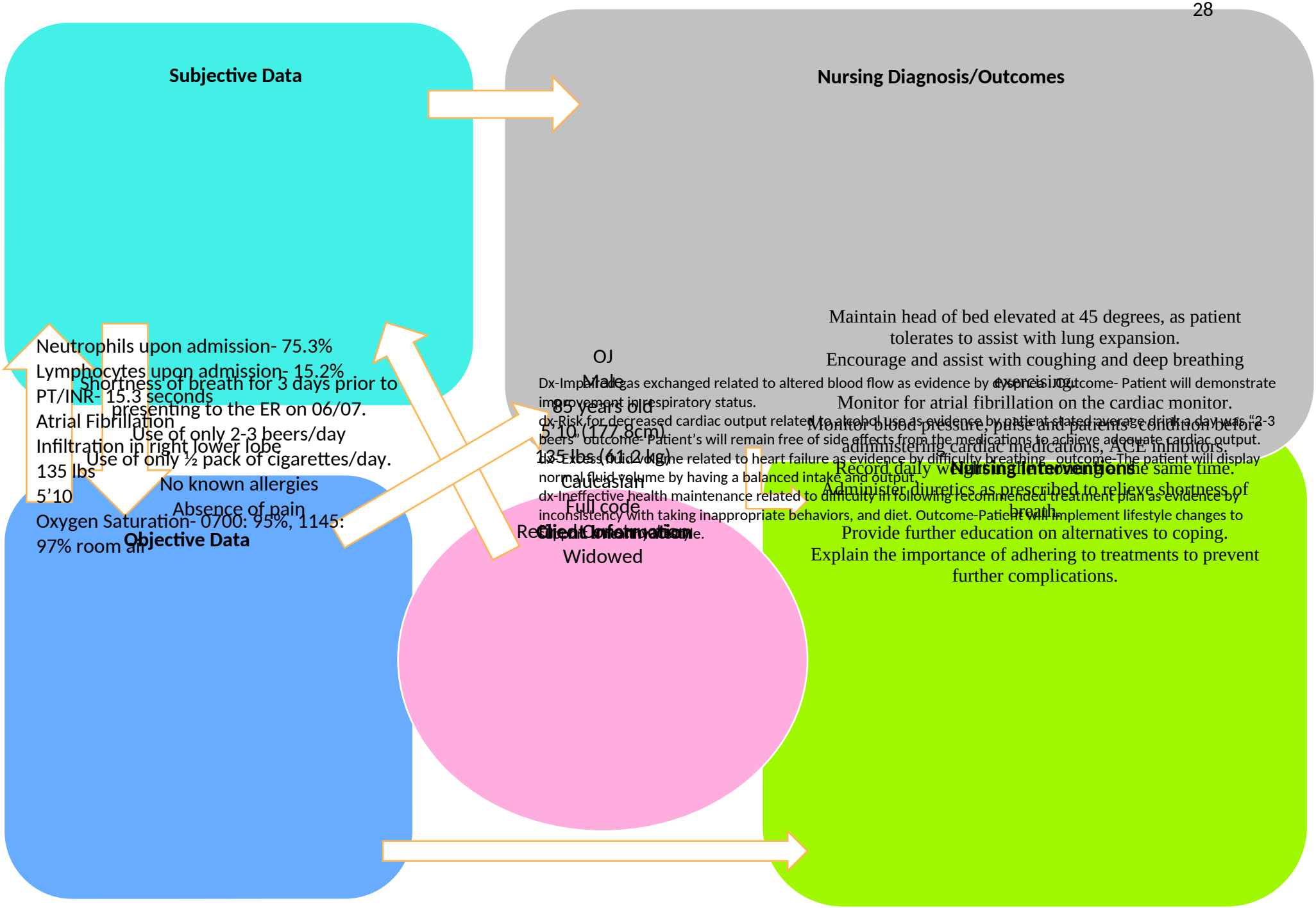
	due to many cardiac issues.	breathing exercising.		patient discussed with this student, a plan to elevate the head of bed at onset of dyspnea.
2. Risk for decreased cardiac output related to alcohol use as evidence by patient stated average drink a day was "2-3 beers"	This nursing diagnosis was chosen due to the patient having a past history of alcohol abuse and currently using.	1. Monitor for atrial fibrillation on the cardiac monitor. 2. Monitor blood pressure, pulse and patients' condition before administering cardiac medications, ACE inhibitors.	1. Patient's will remain free of side effects from the medications to achieve adequate cardiac output.	This student discussed the importance of medication side effects that can occur with drinking. The patient considered looking into cutting back on alcohol use and stated he understood the risks.
3. Excess fluid volume related to heart failure as evidence by difficulty breathing	This nursing diagnosis was chosen due to the patient having many episodes of shortness of breath leading to admission. The patient is a high risk for fluid retention and doesn't follow fluid restrictions.	1. Record daily weight in the morning at the same time. 2. Administer diuretics as prescribed to relieve shortness of breath.	1. The patient will display normal fluid volume by having a balanced intake and output.	This student educated the patient on fluid restriction The patient voices understanding of significance of maintaining fluid restrictions.
4. Ineffective health maintenance related to	This nursing diagnosis was chosen due to the	1. Provide further education on alternatives to	1. Patient will implement lifestyle	This student educated the patient on support groups

difficulty in following recommended treatment plan as evidence by inconsistency with taking inappropriate behaviors, and diet.	patient not following medication regimen at home to better his health.	coping. 2. Explain the importance of adhering to treatments to prevent further complications.	changes to support a healthy lifestyle.	the patient can join to aid with cessation of habit. The patient discussed looking into smoking cessation and attempting to find new coping mechanisms. The student and patient discussed complications that could further deteriorate the patients' health.

Other References (APA):

Phelps, L.L. (2020*). Sparks and Taylor's nursing diagnosis reference manual* (11th ed.). Wolters Kluwer.

Concept Map (20 Points):


Subjective Data
Shortness of breath for 3 days prior to presenting to the ER on 06/07.
Use of only 2-3 beers/day
Use of only ½ pack of cigarettes/day.
No known allergies
Absence of pain
Objective Data
Neutrophils upon admission- 75.3%
Lymphocytes upon admission- 15.2%
PT/INR- 15.3 seconds
Atrial Fibrillation
Infiltration in right lower lobe
135 lbs
5'10
Oxygen Saturation- 0700: 95%, 1145: 97% room air
OJ
Male
85 years old
5'10 (177.8cm)
135 lbs (61.2 kg)
Caucasian
Full code
Widowed
Nursing Diagnosis/Outcomes
Dx-Impaired gas exchanged related to altered blood flow as evidence by dyspnea. Outcome- Patient will demonstrate improvement in respiratory status.
dx-Risk for decreased cardiac output related to alcohol use as evidence by patient stated average drink a day was "2-3 beers" outcome- Patient's will remain free of side affects from the medications to achieve adequate cardiac output.
dx-Excess fluid volume related to heart failure as evidence by difficulty breathing outcome-The patient will display normal fluid volume by having a balanced intake and output.
dx-Ineffective health maintenance related to difficulty in following recommended treatment plan as evidence by inconsistency with taking inappropriate behaviors, and diet. Outcome-Patient will implement lifestyle changes to
Nursing Interventions
Maintain head of bed elevated at 45 degrees, as patient tolerates to assist with lung expansion.
Encourage and assist with coughing and deep breathing exercising.
Monitor for atrial fibrillation on the cardiac monitor.
Monitor blood pressure, pulse and patients condition before administering cardiac medications, ACE inhibitors.
Record daily weights at the same time.
Administer diuretics as prescribed to relieve shortness of breath.
Provide further education on alternatives to coping.
Explain the importance of adhering to treatments to prevent further complications.