N311 Care Plan #3

Lakeview College of Nursing

Katie Finn

Demographics (5 points)

Date of Admission 10/17/2021	**Patient Initials** GRM	**Age** 45 years old	**Gender** Male
Race/Ethnicity Caucasian	**Occupation** Unemployed	**Marital Status** Single	**Allergies** Doxycycline causes nausea and vomiting
Code Status Full Code	**Height** 172 cm	**Weight** 98.8 kg	

Medical History (5 Points)

Past Medical History: Anxiety (date not reported), hypertension (date not reported), pulmonary embolism (10/5/21), and pneumonia (10/5/21). Patient is allergic to doxycycline and causes nausea and vomiting.

Past Surgical History: Patient did not report any surgical history.

Family History: Patient did not report any family history.

Social History (tobacco/alcohol/drugs): Patient denies use of alcohol. Reports smoking more than 100 cigarettes in his lifetime and still sometimes smokes but not every day. Patient does use methamphetamines.

Admission Assessment

Chief Complaint (2 points): Shortness of breath and swelling in feet

History of present Illness (10 points): The patient reported that he had been visiting a friend in California the weekend of October 2, 2021. On his drive back home, he stopped at a hospital in New Mexico. The hospital admitted him on October 5th, 2021, and he was diagnosed with a pulmonary embolism and pneumonia. The patient stayed at the hospital in New Mexico for five days and was released with blood thinners (patient did not report brand of blood thinner medication). Then on October 17, 2021, the patient came to Sarah Bush Lincoln hospital with

shortness of breath and swelling in the feet. The hospital did a computerized tomography (CT) scan angiography chest with contrast and diagnosed the patient with right sided congestive heart failure. The patient was officially admitted that day at 1300 into the hospital.

Primary Diagnosis

Primary Diagnosis on Admission (3 points): Congestive heart failure of the right side

Secondary Diagnosis (if applicable): Pneumonia and pulmonary embolism

Pathophysiology of the Disease, APA format (20 points): Congestive heart failure is a condition where the ventricular muscle becomes weakened resulting in insufficient pumping of blood to oxygenate the tissues. There can be right sided or left sided heart failure, and both range from mild to severe. Most do people do not realize they have heart failure when it is mild to moderate.

This condition affects 6.5 million Americans, and more than 550,000 patients are diagnosed with it every year. There are about 300,000 deaths annually in America as well. The risk of having heart failure in a lifetime is 20% for everyone over the age of 40 years old, and as common as 10 per 1,000 people 65 years and older (Capriotti, p. 399).

The greatest risk factor for developing heart failure is hypertension (HTN), “as more than 75% of patients with heart failure are treated for HTN before developing it” (Capriotti, p. 399). About 22% of men and 46% who have an acute myocardial infarction (MI) will develop heart failure within six months after the MI. Other risk factors include coronary artery disease, metabolic syndrome, and a history of diabetes mellitus. Natural estrogen is cardioprotective, so women are usually diagnosed with heart failure at an older age than men (Capriotti, p. 399.

Right sided heart failure specifically affects the right ventricle of the heart. This side of the heart is responsible for pumping returning deoxygenated blood from the body into the lungs

to get oxygenated. When the ventricle is unable to pump efficiently, it leads to a backup of blood in the right atria and ventricle, superior and inferior vena cava, and the systemic venous system. This increase of pressure increases hydrostatic pressure in the right heart chambers and in the veins. Increased hydrostatic pressure in the veins creates edema which is fluid buildup that causes swelling in the body's tissues, usually the extremities. The backup of fluid also leads to enlargement of the spleen and the liver, and ascites (fluid buildup in the peritoneal cavity). The patient will also experience hypoxia and cyanosis because of the reduced forward contractile force of the right ventricle. The reduced force doesn't allow for good pulmonary arterial blood flow, thus "suboptimal alveolar-oxygen diffusion into the capillaries" (Capriotti, p. 418). Other signs of right sided heart failure include jugular venous distension, venous congestion of the gastrointestinal tract, hepatomegaly, and splenomegaly.

To officially diagnose heart failure, the patient must have at least one of the major criteria and two of the minor criteria present from the Framingham Criteria for Diagnosis of Congestive Heart Failure. The major criteria are as follows: paroxysmal nocturnal dyspnea, jugular vein distension, pulmonary crackles, cardiomegaly, auscultation of S_3 heart sound, increased central venous pressure (CVP) greater than 16 cm H_2O, and positive hepatojugular reflex. The minor criteria are as follows: bilateral extremity edema, nighttime cough, dyspnea on exertion, hepatomegaly, pleural effusion, reduced pulmonary vital capacity by one-third from normal, and tachycardia of 120 beats/min or greater. Imbalanced serum electrolytes in the bloodstream are another sign of heart failure. Imaging that's used for diagnosing are chest x-ray, electrocardiograms, echocardiograms, and cardiac catheterization and angiography (Capriotti, p. 421-422).

The basic health strategy to treat heart failure are lifestyle modifications like low-fat diet, smoking cessation, and increasing physical activity. Patients can also be given beta-1-adrenergic lockers to inhibit the sympathetic nervous system from increasing the heart rate which strains a weakened heart. Diuretics are given to decrease the reabsorptions of sodium and water into the bloodstream to decrease peripheral edema. Aldosterone antagonists are given for the same reason as diuretics and are considered potassium-sparing diuretics since it inhibits secretion of potassium at the nephron of the kidney. Angiotensin-converting enzyme (ACE) inhibitors work to inhibit ACE in the lungs to stop the chain reaction that creates angiotensin II. Angiotensin II is a vasoconstrictor and signals the adrenal gland to secret aldosterone, which puts more stress on the weakened heart (Capriotti, 424).

My patient was diagnosed with a CT angiography chest scan with contrast that found cardiomegaly, emboli in the right lower lobe and left lower lobe of the lungs, and mild ascites. His chest x-ray showed pericardial effusion and right pleural effusion. He also had edema in his feet and ankles, which all together meets the criteria for Framingham Criteria for Diagnosis of Congestive Heart Failure. My patient was at higher risk for heart failure due to his history of hypertension, history of smoking, and using methamphetamines (Richards et al., 2018).

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives.* Philadelphia: F.A. Davis.

Richards, J. R., Harms, B. N., Kelly, A., & Turnipseed, S. D. (2018). Methamphetamine use and heart failure: Prevalence, risk factors, and predictors. *The American Journal of Emergency Medicine, 36*(8). https://doi.org/10.1016/j.ajem.2018.01.001

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 (x10^6/µL)	3.90-4.98	4.93	4.84	N/A
Hgb (g/dL)	13.5-17.5 (in males)	12.6	12.3	Hemoglobin levels are low due to the fluid retention from the right sided heart failure. The fluid retention increases blood volume, but RBC count does not change (Van Leeuwen & Bladh, p. 677).
Hct (%)	35.0-45.0	39.5	38.7	N/A
Platelets (K/µL)	140-400	353	338	N/A
WBC (K/µL)	4.0-12.0	10.1	8.6	N/A
Neutrophils (%)	40-70	68	58	N/A
Lymphocytes (x 100//µL)	1.0-4.8	2.0	1.6	N/A
Monocytes (%)	3.0-13.0	8.0	9.7	N/A
Eosinophils (%)	0.0-8.0	2.2	1.8	N/A
Bands (%)	0.0-10	N/A	N/A	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- (mmol/L)	135-145	136	136	N/A
K+ (mmol/L)	3.5-5.1	4.4	4.2	N/A
Cl- (mmol/L)	98-107	104	102	N/A
CO2 (mmol/L)	22-29	20	23	CO2 level is low due to client's shortness of breath causing

				hyperventilation where too much CO2 is being exhaled (Van Leeuwen & Bladh, p. 273).
Glucose (mg/dL)	70-140	99	101	N/A
BUN (mg/dL)	8-21	17	16	N/A
Creatinine (mg/dL)	0.75-1.35	1.15	1.20	N/A
Albumin (g/dL)	3.5-5.2	3.7	3.6	N/A
Calcium (mg/dL)	8.4-10.5	8.8	8.5	N/A
Mag (mg/dL)	1.6-2.6	2.0	2.2	N/A
Phosphate (units/ L)	2.4-4.5	N/A	N/A	N/A
Bilirubin (mg/dL)	0.3-1.0	1.6	1.9	This level is high because of liver damage from the increased central venous pressure from the right sided heart failure (Van Leeuwen & Bladh, p. 144).
Alk Phos (units/L)	34-104	123	119	These levels are high due to damaged liver cells releasing alkaline phosphatase (Van Leeuwen & Bladh, p. 31).

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	Straw/light yellow and clear	Yellow and clear	N/A	N/A
pH	5.0-9.0	6.0	N/A	N/A
Specific Gravity	1.001-1.029	1.008	N/A	N/A
Glucose	Negative	Negative	N/A	N/A
Protein	Negative/Trace	Negative	N/A	N/A

Ketones	Negative	Negative	N/A	N/A
WBC (per hpf)	0-5	0	N/A	N/A
RBC (per hpf)	0-5	0	N/A	N/A
Leukoesterase	Negative	0	N/A	N/A

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	N/A	N/A	N/A
Blood Culture	Negative	N/A	N/A	N/A
Sputum Culture	Negative	N/A	N/A	N/A
Stool Culture	Negative	N/A	N/A	N/A

Lab Correlations Reference (APA):

Lakeview College of Nursing. (2021). *Tab: Diagnostics: Lab* [Class handout]. Charleston, IL: Lakeview Colling of Nursing.

Van Leeuwen, A. M., & Bladh, M. L. (2015). *Davis's comprehensive handbook of laboratory & diagnostic tests with nursing implication* (6th ed.). F. A. Davis Company

Diagnostic Imaging

All Other Diagnostic Tests (10 points):

Chest x-ray 10/17/21 – Patient is reporting shortness of breath and was diagnosed with pneumonia a week ago. This test was done to look for fluid in the lungs. The x-ray found patchy bilateral pulmonary opacities concerning for pneumonia.

CT angiography chest with contrast – Patient reported edema in the lower extremities when he came to hospital. The hospital ordered this imaging to determine if the heart's function was

causing the edema. The test showed nothing acute (new), a resolved left lower lobe emboli and stable, small chronic right lower lobe emboli, cardiomegaly with suggestive findings of right heart failure, and mild ascites.

Ultrasound venous duplex of both legs – With the patient's imaging showing positive for emboli in both lungs, the hospital wanted to check for deep vein thrombus (DVT) in the legs. The imaging was negative for DVTs in both legs.

Abdomen ultrasound for ascites – Since the CT angiography showed mild ascites, this test was ordered to check the liver and surrounding organs. It showed trace amount of fluid around the spleen, slight gallbladder wall thickening without discrete gallstones or pericholecystic fluid but that may be reactive changes.

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

Medications (5 required)

Brand/	Toprol	Ativan/Lorazepam	Zithromax/	Bustab	Cefdinir

Generic	XL/Metoprolol succinate		Azithromycin	(CAN)/Buspirone hydrochloride	
Dose	100 mg		500 mg	5 mg	300 mg
Frequency	QD	PRN with anxiety	QD	PRN	Q12H
Route	Oral	Oral	Oral	Oral	Oral
Classification	Beta-1-adrenergic blocker	Benzodiazepine	Macrolide	Azaspirone	Third-generation cephalosporin
Mechanism of Action	This medication stops the stimulation of the beta-1-receptor sites to decrease cardiac rhythm, cardiac output, and myocardial oxygen need. It also decreases the release of renin in the kidneys to decrease blood pressure (Jones, p. 726).	This medication "binds to specific benzodiazepine receptors in the cortical and limbic areas of the CNS" to increase effects of gamma aminobutyric acid (GABA). GABA stops excitatory stimulation that can cause symptoms of anxiety (Jones, p. 669).	The medication works by binding to the ribosomal subunit of susceptible bacteria. This causes the bacteria to stop RNA-dependent protein synthesis by blocking the peptide translocation (Jones, p. 108).	"May act as a partial agonist at serotonin 5-hydroxytryptamin 1A receptors in the brain, producing antianxiety effects	"Interfers with bacterial cell wall synthesis by inhibiting the final steps in the cross-linking of peptidoglycan strands". This causes the cells to rupture and die (Jones, p. 180).
Reason Client Taking	Managing hypertension	For anxiety	To treat mild pneumonia	For anxiety	To treat community-acquired pneumonia
Contraindications (2)	1. Hypersensitivity to metoprolol and other beta blockers 2. Systolic blood pressure less than 100 mm Hg (Jones, p. 726)	1. Acute angle-closure glaucoma 2. Hypersensitivity to lorazepam (Jones, p. 669)	1. History of cholestatic jaundice 2. Hypersensitivity to azithromycin, erythromycin, ketolide antibiotics, and other macrolide antibiotics or their components (Jones, p. 108)	1. Severe hepatic impairment 2. Severe renal impairment (Jones, p. 150)	1. Hypersensitivity to cefdinir 2. Hypersensitivity to cephalosporins
Side Effects/ Adverse Reactions (2)	1. Arrhythmias 2. Bronchospasms (Jones, p. 726)	1. Coma 2. Suicidal ideation (Jones, p. 669)		1. Serotonin syndrome 2. Angioedema (Jones, p. 150)	1. Leukopenia 2. Anaphylaxis (Jones, p 180)

Jones & Bartlett Learning. (2020). *2021 nurse's drug handbook* (20th ed.). Jones & Bartlett Learning.

Assessment

Physical Exam (18 points)

GENERAL: **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	Patient was alert and oriented to person, place, time, and situation. He was calm and compliant to assessment. Overall appearance was slightly disheveled but well groomed. He did not appear distressed or in pain.
INTEGUMENTARY: **Skin color:** **Character:** **Temperature:** **Turgor:** **Rashes:** **Bruises:** **Wounds:** **Braden Score: 19** **Drains present: Y☐ N ☒** **Type: N/A**	Patient's skin was dry, warm, pink, and intact. He reported no lesions or bruising. There was a general skin rash present all over the body. Skin turgor was elastic and < 3 seconds. There were no drains attached to the patient. Braden score was a 19 which indicates low risk of pressure ulcers.
HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	Patient's head is normocephalic and neck is symmetrical with trachea at midline. Ears are symmetrical and have no visible drainage or cerumen. Patient was responsive to all sounds. Patient does not wear glasses and eyes showed PERRLA. Displayed good extraocular movements with pupils being 5 mm. Eyes were symmetrical with no drainage or inflammation, and conjunctive was pink and moist. Nose is midline with no deviated septum and nares appeared to be symmetrical. Patient has all teeth intact, tongue and buccal mucosa was pink, moist, and no lesions.
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 heart sounds were audible with no murmurs or S3/S4 sounds. Cardiac rhythm was steady and regular. Peripheral pulses were symmetrical in beat and strength. Carotid and radial pulses were palpable at a +3 and pedal pulse was a +1. Capillary refill was < 2 secs and no jugular vein distention was observed. Patient did have +2 pitting edema in the feet and nonpitting edema in the abdomen. Patient did rate 2/10 pain on the FLACC scale in the feet and legs.
RESPIRATORY: **Accessory muscle use: Y☐ N ☒** **Breath Sounds: Location, character**	One wheeze sound was heard during lung auscultation, but no other abnormal lung sounds heard. Respiration rate was assessed while patient was sitting in a chair and was measured to be 18

	respirations per minute. Breathes were observed to be even and regular with no accessory muscles used. No chest deformities were seen, and patient denies any coughing, sputum production, with a little difficulty breathing when laying down.
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: N/A** **Feeding tubes/PEG tube Y ☐ N ☒** **Type: N/A**	Patient reported diet at home is "mostly eating out" but has regular diet. Current hospital diet is heart failure diet. Patient's height is 172 cm and weight is 94.8 kg with a BMI of 33.4. Bowel sounds were heard in all four quadrants at a rate of 5-36 per minute. Patient did report some nausea but no vomiting or diarrhea. His last BM was that morning 10/19/2021. Abdomen was non tender, firm when palpated, and distended. Abdomen had no drains, incisions, scars, or wounds. Patient does not have any ostomies, nasogastric or feeding tubes.
GENITOURINARY: **Color:** **Character:** **Quantity of urine:** **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒** **Inspection of genitals:** **Catheter: Y ☐ N ☒** **Type: N/A** **Size: N/A**	Urine color was yellow and clear with no odor. Patient voided twice and was continent during this shift. Patient did not report any pain or urgency during voiding. Patient did report increased frequency due to IV fluids. No dialysis or catheters.
MUSCULOSKELETAL: **Neurovascular status:** **ROM:** **Supportive devices:** **Strength:** **ADL Assistance: Y☒ N ☐** **Fall Risk: Y ☒ N☐** **Fall Score: 45** **Activity/Mobility Status:** **Independent (up ad lib) ☐** **Needs assistance with equipment ☒** **Needs support to stand and walk ☒**	Neurovascular status is intact, and patient is in control of his senses. Patient does not report any paresthesia or paralysis and does display some pallor. Patient displayed full range of motion with equal 3/5 extremity strength in both arms and legs. Patient does have some mobility issues and has contact guard assist with a gait belt for when he ambulates. Morse fall risk score is a 45 which indicates a moderate fall risk. Patient does not need help with ADLs

NEUROLOGICAL: **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☒ N ☐ if no -** **Legs ☐ Arms ☐ Both ☐** **Orientation:** **Mental Status:** **Speech:** **Sensory:** **LOC:**	Patient had some weakness in upper and lower extremities. Eyes exhibited PERRLA signs and articulates well. Patient is A&O x4, alert to the surrounds, and calm. Patient is focused on getting rest and recover from the pneumonia. Patient can sense touch all over his extremities.
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's partner has kept in contact with him via phone calls. Otherwise, patient did not mention any type of support system outside the hospital. Patient did not report any religious affiliations either. Developmental level is appropriate for age and has had some college.

Vital Signs, 1 set (5 points)

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
828	95 bpm oximeter right hand	112/80 LA	18 resp/min	36.8 ℃ tympanic	97% RA

Pain Assessment, 1 set (5 points)

Time	Scale	Location	Severity	Characteristics	Interventions
828	FLACC	Feet and legs	2/10	Aching and dull	Pain medication

Intake and Output (2 points)

Intake (in mL)	Output (in mL)
1,500 mL in 24 hours via IV	900 mL in urine in 24 hours Urinated twice during shift Did not have BM during shift

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

Nursing Diagnosis	Rational	Intervention (2	Evaluation

• Include full nursing diagnosis with "related to" and "as evidenced by" components	• Explain why the nursing diagnosis was chosen	**per dx)**	• How did the patient/family respond to the nurse's actions? • Client response, status of goals and outcomes, modifications to plan.
1. Risk of falling related to decrease in lower extremity strength as evidence by fall risk being scored 45 on the Morse fall scale and vascular disease from HTN	This diagnosis was given because of the patient scored a 45 on the Morse fall scale which indicated a moderate fall risk.	**1.** Asses the patient's ability to use call light and remove any items on the floor that could trip the patient **2.** Help patient understand which medications they're taking can increase risks for falls	The patient showed understanding of how to use the call light because he pressed it once or twice during the shift to use the bathroom. This goal was met. I did not witness the nurse educating the client on which medications he is taking that increase risks for falls so that goal has not been met yet.
2. Impaired gas exchange related to weakened right ventricle as evidence by edema in the lower extremities and abdomen and decreased levels of CO2 in the blood.	This diagnosis was given because the patient has reported some difficulty breathing and low CO2 levels in the blood indicating hyperventilation.	**1.** Assess and record pulmonary status every 4 hours **2.** Educate patient on best positions that best facilitates chest expansion to enhance gas exchange	Patient's pulmonary status was stable during this shift and was recorded at 830 and 1100. Patient's vitals were stable so goal 1 was met. Patient showed understanding of which positions in bed and on the chair facilitated the best chest expansion. He was able to verbalize which positions were the best to stay in. Goal 2 was met

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

Overall APA format (5 points):

Concept Map (20 Points):

Subjective Data

Patient reported 2/10 pain on FLACC scale in lower extremities
Dull, aching pain in lower extremities
Shortness of breath

Nursing Diagnosis/Outcomes

of falling related to decrease in lower extremity strength as evidence by fall risk being scored 45 on the Morse fall scale and vascular disease from HTN
The patient showed understanding of how to use the call light because he pressed it once or twice during the shift to use the bathroom. This goal was met.
I did not witness the nurse educating the client on which medications he is taking that increase risks for falls so that goal has not been met yet.
Impaired gas exchange related to weakened right ventricle as evidence by edema in the lower extremities and abdomen and decreased levels of CO2 in the blood.
Patient's pulmonary status was stable during this shift and was recorded at 830 and 1100.
Patient's vitals were stable so goal 1 was met.
Patient showed understanding of which positions in bed and on the chair facilitated the best chest expansion. He was able to verbalize which positions were the best to stay in. Goal 2 was met.

Objective Data

Vital signs: T 36.8 C, BP 112/80, P 95 bpm, R 18 resp/min, O2 97%
Low hgb levels of 12.6 and 12.3 g/dL
Low CO2 level of 20 mmol/L
High bilirubin levels of 1.6 and 1.9 mg/dL
High levels of alkaline phosphatase 123 and 119 units/L

Patient Information

Patient is a 45-year-old male diagnosed with right sided congestive heart failure and a pulmonary embolism in both lower lobes of the lung
Has a history of methamphetamine use, smoking, and HTN
Admitted for shortness of breath and edema in the extremities.

Nursing Interventions

Asses the patient's ability to use call light and remove any items on the floor that could trip the patient
Help patient understand which medications they're taking can increase risks for falls
Assess and record pulmonary status every 4 hours
Educate patient on best positions that best facilitates chest expansion to enhance gas exchange