N431 Care Plan # 1

Lakeview College of Nursing

Toni Andres

Demographics (3 points)

Date of Admission 02-17-2023	Client Initials CP	Age 77	Gender Female
Race/Ethnicity Caucasian	Occupation Retired	Marital Status Widowed	Allergies Dust, Grass, Mold
Code Status Full	Height 155cm	Weight 111.9kg	

Medical History (5 Points)

Past Medical History:
Ongoing:
Asthma
Bilateral hydronephrosis
Chronic cystitis
Diastolic dysfunction without heart failure
High cholesterol
History of peptic ulcer
Hypertension
Incomplete bladder emptying
Lumbar radiculopathy
Lumbar spinal stenosis
Lymphedema of both lower extremities
Morbid obesity
Osteoarthritis of left knee
Stenosis of uteropelvic junction
Historical:
Generative joint disease of knee, right
Trochanteric bursitis

Past Surgical History:
Bilateral transforaminal epidural steroid injection with fluoroscopy (10/05/22)
Trochanteric Bursa injection with fluoroscopy (left) (08/01/22)
Bilateral transforaminal epidural steroid injection with fluoroscopy (06/16/22)
Trigger point injections 1-2 muscle groups (09/27/21)
Trochanteric Bursa injection with fluoroscopy (left) (06/10/21)
Bilateral transforaminal epidural steroid injection with fluoroscopy (09/27/21)
(Multiple additional injections listed)

Family History:
Mother: Back pain, breast cancer, diabetes
Father: Sleep apnea

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

Former smoker: Previous amount unknown
Alcohol: Occasional, wine
Drugs: Denies use

Assistive Devices:
Walker
Cane

Living Situation:
Resides at Odd Fellow Nursing Facility

Education Level:
High School

Admission Assessment

Chief Complaint (2 points): Hypotension of 111/58 and low SpO2 of 84% on room air.

History of Present Illness – OLD CARTS (10 points): Patient is a pleasant 77-year-old female with a past medical history of hypertension, asthma, diastolic dysfunction, chronic cystitis, incomplete bladder emptying, lymphoedema of lower extremities, and morbid obesity. Patient was seen in the emergency department for evaluation of hypotension and hypoxemia. Patient stated she had been slightly short of breath after being in the cold air. She was noted by nursing home staff to be mildly hypoxic prior to EMS arrival. Patient stated she was mildly short of breath at rest. She denied having chest pain, cough, or congestion but stated she was very tired and had been since her last hospitalization a few weeks ago. EMS placer her on 3L via nasal cannula which improved her SpO2 to 94%. Patient stated she did have some right leg pain from a recent fall from earlier in the week, she denies any specific pain to the calf.

Primary Diagnosis

Primary Diagnosis on Admission (2 points): Acute Kidney Injury

Secondary Diagnosis (if applicable): Hypotension

Pathophysiology of the Disease, APA format (20 points)

Acute kidney injury (AKI), or acute renal failure, is a condition of sudden kidney failure with or without pre-existing chronic kidney disease. It is an abrupt and usually reversible glomerular filtration rate (GFR) decline. A decline in the GFR can result in elevated serum blood urea nitrogen (BUN), creatinine, and other metabolic waste products typically eliminated by the kidney. Aki can have many causes, but it usually happens when insufficient blood flow to the kidneys. This would be considered prerenal. Some conditions that can restrict blood flow to the kidneys include low blood pressure, severe bleeding, sepsis infection, overuse of NSAIDs, severe burns, severe dehydration, or severe allergic reaction (Gaut & Liapis, 2020). The direct damage to the kidneys would be considered intrarenal. Conditions that can cause damage to the kidneys and lead to acute kidney injury include blood clots in the kidneys and infection. Certain medicines like chemotherapy drugs, some antibiotics, and contrast dyes used in CT scans, MRIs, and other diagnostic imaging tests can also cause damage to the kidneys. Alcohol or drug abuse also can lead to AKI. Specific diseases that affect the kidneys are glomerulonephritis and lupus nephritis. Some conditions cause a blockage in the ureters. The blockage in the urinary tract is considered postrenal. These conditions include kidney stones, blood clots in or around the kidney vessels, an enlarged prostate, bladder problems, and some cancers (*Chronic kidney disease,* 2021).

There is a systematic evaluation for AKI complications. The assessment of AKI severity uses a system to rate the seriousness called, The Kidney Disease: Improving Global Outcomes (KDIGO). This system stages the severity of AKI from stage one (mild) to stage three (severe). Complications associated with AKI are more severe and life-threatening the higher the stages become (Gaut & Liapis, 2020). Acute kidney injury causes a buildup of waste products in the blood. It makes it difficult for the kidneys to keep the right balance and fluid in the body to

maintain homeostasis. AKI can also affect body systems and organs such as the brain, heart, and lungs, and acute kidney injury increases the risk of cardiovascular issues. Impaired kidney function can cause a buildup of urea, a byproduct of dietary protein. Uremia, a high level of urea, is toxic and can cause inflammation of the pericardium. The immune system is also affected by kidney damage. Excess toxins accumulate in the bloodstream and are harmful to all organs. Acute kidney failure has a multisystem effect; treating AKI before irreversible damage sets in is crucial (*Chronic kidney disease,* 2021).

Signs and symptoms of acute kidney injury may include urinating less often, edema in the legs, ankles, or feet, feeling weak and tired, shortness of breath, or feeling pain or pressure in the chest. In severe cases of acute kidney injury, a person could suffer seizures or a coma. Other indicators of AKI would be one of the most common being an increase in serum creatinine level. Other laboratory findings are progressive acidosis, hyperkalemia, hyponatremia, and anemia. This patient was initially admitted to the Emergency Department for hypotension and hypoxia. Further testing discovered an elevated creatinine, low red blood cell count, an elevated D dimer, low levels of calcium, low levels of hemoglobin, and an elevated blood urea nitrogen level. Some diagnostic testing for acute kidney injury would be a renal and bladder ultrasound to allow the provider to assess the size and properties of the kidney and bladder and signs of hydronephrosis. A venous duplex of the lower bilateral extremity ultrasound allows the provider to access the circulation of the lower extremities to check for venous blockage or deep vein thrombosis (Waikar et al., 2019). A CT scan of the abdomen and pelvis without contrast due to impaired kidney function would allow the provider to determine if there would be a postrenal blockage. This patient had diagnostic testing of a chest X-ray to rule out a possible pneumothorax for indication of shortness of breath. A renal and bladder ultrasound was ordered

to assess the size and properties of the kidney and bladder. An ultrasound venous duplex of the lower bilateral extremities was ordered to assess circulation and check for venous blockage or deep vein thrombosis.

The treatment would depend on the cause and severity of the acute kidney injury. Some people would need hospitalization until their kidneys recover. Medications are used to control blood pressure and adjust electrolytes in the blood. Specific treatments to keep the right amount of fluid in the body to maintain homeostasis, such as diuretics to help urinate extra fluid. Furthermore, if the kidneys stop working, a patient could go on dialysis, a treatment that uses a machine to clean the blood. Treatments for this patient include diuretic medications and stopping any nephrotoxic drugs—a dietary sodium restriction and lifestyle alteration regarding her multiple falls by using assistive devices to ambulate. (Gaut & Liapis, 2020).

Pathophysiology References (2) (APA):

Gaut, J. P., & Liapis, H. (2020). Acute kidney injury pathology and pathophysiology: A retrospective review. *Clinical Kidney Journal*, *14*(2), 526–536. https://doi.org/10.1093/ckj/sfaa142

Mayo Foundation for Medical Education and Research. (2021, September 3). *Chronic kidney disease*. Mayo Clinic. Retrieved February 26, 2023, from https://www.mayoclinic.org/diseases-conditions/chronic-kidney-disease/symptoms-causes/syc-20354521

Waikar, S. S., Liu, K. D., & Chertow, G. M. (2019). Diagnosis, epidemiology and outcomes of Acute Kidney Injury. *Clinical Journal of the American Society of Nephrology*, *3*(3), 844–861. https://doi.org/10.2235/cjn.05191207

Laboratory Data (15 points)

CBC Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (__=high lab value, __=low lab value)

Lab	Normal Range	Admission Value	Today's Value	Reason for Abnormal Value
RBC	**4.28-5.56**	**3.23**	**3.93**	Red blood cells transport oxygen from the lungs to the bodily tissues, low levels of RBC's could indicate lack of oxygen in the blood (M. & Bladh, 2019).
Hgb	**13-17**	**9.8**	**11.8**	Hemoglobin is the protein component of red blood cells that is necessary for oxygen and carbon dioxide transport. hemoglobin levels could indicate kidney disease (Shirley et al., 2023).
Hct	**38.1- 48.9**	**38.2**	**38.4**	**NA**
Platelets	**149 - 393**	**149**	**151**	**NA**
WBC	**4.0 - 11.7**	**12.8**	**10.6**	Elevated white blood cells indicate a sign of infection possibly on the wound on the patients leg (Shirley et al., 2023).
Neutrophils	**45.3 - 79.0%**	**84.7**	**83.1**	Neutrophils are the most common type of white blood cell and serve as the primary defense against infection an elevated neutrophil level could indicate infection as with the wound on the patient's leg (M. & Bladh, 2019).
Lymphocytes	**11.8 - 45.9%**	**7.0**	**8.8**	Lymphocytes are a response to inflammation or infection (M. & Bladh, 2019).
Monocytes	**4.4 - 12.0%**	**7.6**	**6.5**	**NA**
Eosinophils	**0.0 - 6.3 %**	**1.3**	**1.3**	**NA**
Bands	**0 - 6.0**	**NA**	**NA**	**NA**

Chemistry Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (__=high lab value, __=low lab value)

Lab	Normal Range	Admission Value	Today's Value	Reason For Abnormal
Na-	**136 - 145**	**137**	**138**	**NA**
K+	**3.5 - 5.1**	**4.1**	**3.9**	**NA**
Cl-	**98 - 107**	**99**	**103**	**NA**
CO2	**21 - 31**	**31**	**30**	**NA**
Glucose	**74 - 109**	**108**	**107**	**NA**
BUN	**7 - 25**	**34**	**43**	Blood urea nitrogen is the nitrogen portion of urea. Urea is normally filtered through the renal glomeruli, with a small amount reabsorbed and the tubules, and the excess remainder excreted in the urine. Elevated levels of BUN indicate a decline of the glomerular filtration rate which is an indication of renal failure (M. & Bladh, 2019).
Creatinine	**0.70 - 1.30**	**1.85**	**2.26**	Creatinine is a specific indicator of renal function; increased levels of creatinine indicate a slowing of the glomerular filtration rate. increased creatinine levels may indicate nephritis, pyelonephritis, or glomerulonephritis (Shirley et al., 2023).
Albumin	**3.5 - 5.2**	**NA**	**2.3**	
Calcium	**8.6-10.3**	**7.3**	**7.4**	Calcium aids in blood clotting by converting prothrombin to thrombin, decreased calcium levels could indicate renal failure (M. & Bladh, 2019).
Mag	**1.6 - 2.4**	**NA**	**1.9**	**NA**
Phosphate	**2.5 - 5.0**	**NA**	**3.4**	**NA**
Bilirubin	**0.3- 1.0**	**1.0**	**0.5**	**NA**
Alk Phos	**34- 104**	**NA**	**70**	**NA**
AST	**13- 39**	**NA**	**15**	**NA**

ALT	**7 - 52**	**NA**	**16**	**NA**
Amylase	**29- 103**	**NA**	**NA**	**NA**
Lipase	**11- 82**	**NA**	**NA**	**NA**
Lactic Acid	**< 2.5**	**NA**	**0.8**	**NA**
Troponin	**0.0-0.030**	**<0.010**	**NA**	**NA**
CK-MB	**0.60- 6.30**	**NA**	**NA**	**NA**
Total CK	**30- 223**	**NA**	**NA**	**NA**

Other Tests Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (__=high lab value, __=low lab value)

Lab Test	Normal Range	Value on Admission	Today's Value	Reason for Abnormal
INR	**0.86- 1.4**	**0.99**	**NA**	**NA**
PT	**11.9- 15**	**13.6**	**NA**	**NA**
PTT	**22.6 - 35.3**	**32.1**	**NA**	**NA**
D-Dimer	**0.00 - 0.62**	**2.83**	**NA**	The patient had sustained a fall at the nursing home two days prior which had ruptured a hematoma on her right lower extremity. D-dimer is used to diagnose disseminated intravascular coagulation (Shirley et al., 2023).
BNP	**0-100**	**45**	**NA**	**NA**
HDL	**23-92**	**NA**	**NA**	**NA**
LDL	**75 -193**	**NA**	**NA**	**NA**
Cholesterol	**<199**	**NA**	**NA**	**NA**
Triglycerides	**<150**	**NA**	**NA**	**NA**
Hgb A1c	**<5.7%**	**NA**	**NA**	**NA**

TSH	**0. 45 -5.33**	**NA**	**NA**	**NA**

Urinalysis Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (__=high lab value, __=low lab value)

Lab Test	Normal Range	Value on Admission	Today's Value	Reason for Abnormal
Color & Clarity	**yellow and clear**	**NA**	**yellow and clear**	**NA**
pH	**5.0 -8.0**	**NA**	**5.5**	**NA**
Specific Gravity	**1.005 - 1.034**	**NA**	**1.018**	**NA**
Glucose	**70-100**	**NA**	**normal**	**NA**
Protein	**negative**	**NA**	**normal**	**NA**
Ketones	**negative**	**NA**	**negative**	**NA**
WBC	**Normal high <=5**	**NA**	**normal**	**NA**
RBC	**0-3**	**NA**	**1**	**NA**
Leukoesterase	**negative**	**NA**	**4+(A)**	**NA**

Arterial Blood Gas Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (__=high lab value, __=low lab value)

Test	Normal Range	Value on Admission	Today's Value	Explanation of Findings
pH	**7.35-7.45**	**NA**	**NA**	**NA**
PaO2	**91-100**	**NA**	**NA**	**NA**
PaCO2	**22-26**	**NA**	**NA**	**NA**
HCO3	**35-45**	**NA**	**NA**	**NA**

SaO2	**91-100**	**NA**	**NA**	**NA**

Cultures Highlight All Abnormal Labs—Explanations must be in complete sentences and contain in-text citations in APA format. (=high lab value, =low lab value)

Test	Normal Range	Value on Admission	Today's Value	Explanation of Findings
Urine Culture	**negative**	**NA**	**NA**	**NA**
Blood Culture	**negative**	**Negative (2)**	**NA**	2 blood cultures were taken, and neither were found positive for bacteria
Sputum Culture	**negative**	**NA**	**NA**	**NA**
Stool Culture	**negative**	**NA**	**NA**	**NA**

Lab Correlations Reference (1) (APA):

M., V. L. A., & Bladh, M. L. (2019). *Davis's Comprehensive Handbook of Laboratory and diagnostic tests with nursing implications*. F.A. Davis Company.

Shirley, Dhanaraj, Kumar, S., Wisdom, B., Florence, Francesca, Mann, P., Rana, Kagoga, R., Vickie, Vera, M., Erin, Ram, C., Olorunda, O., Ella, Liaqat, M., Yohans, Km, & Fatima. (2023, January 3). *Normal laboratory values guide and free cheat sheet for nurses*. Nurseslabs. Retrieved February 25, 2023, from https://nurseslabs.com/normal-lab-values-nclex-nursing/

Diagnostic Imaging

All Other Diagnostic Tests (5 points):

Chest X-Ray:

A chest x-ray for an indication of shortness of breath would allow the provider to be able to assess for a possible pneumothorax (Waikar et al., 2019).

Renal and bladder Ultrasound:

An ultrasound of the complete renal and bladder would allow the provider to assess the size and properties of the kidneys and the bladder (Waikar et al., 2019).

Ultrasound venous duplex of the lower bilateral extremities:

A venous duplex ultrasound of the bilateral lower extremities would allow the provider to assess the circulation of the lower extremities to check for venous blockage or deep vein thrombosis (Waikar et al., 2019).

Diagnostic Test Correlation (5 points):

The chest X-ray for the indication of shortness of breath was performed to assess for a possible pneumothorax. The test findings indicated a small left pleural effusion and no pneumothorax. It also determined the heart size is normal. The renal and bladder ultrasound for the indication of acute kidney injury indicated that there was mild right and severe left hydronephrosis. There was bilateral renal cortical thinning, and the bladder is unremarkable. The venous duplex ultrasound of the lower bilateral extremities indicated for an elevated D-dimer and lower extremity bilateral swelling, demonstrated normal flow in the common femoral saphenofemoral junction, femoral vein, popliteal vein and posterior tibial vein indicated no evidence for a deep vein thrombosis (Garrett, M.D., 2023).

Diagnostic Test Reference (1) (APA):

Garrett, M.D., J. (2023). (rep.). *Final Pathology Reports for P.C. 02-18-2023*. Joshua Garrett, M.D.

Waikar, S. S., Liu, K. D., & Chertow, G. M. (2019). Diagnosis, epidemiology and outcomes of Acute Kidney Injury. *Clinical Journal of the American Society of Nephrology*, *3*(3), 844–861. https://doi.org/10.2235/cjn.05191207

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

Home Medications (5 required)

Brand/generic	Singulair/ montelukast	Tylenol/ acetaminophen	Lipitor/ atorvastatin	Gralise/ gabapentin	Microzide/ hydrochlorothiazide
Dose	10mg	1000mg	20mg	300mg	12.5mg
Frequency	HS	Q6H/PRN	HS	TID	daily
Route	Oral	Oral	Oral	Oral	Oral
Classification	P: leukotriene receptor antagonist T: antiallergen, antiasthmatic	P: nonsalicylate paraaminophenol derivative T: antipyretic, non-opioid analgesic	P: HMG-CoA reductase inhibitor T: antihyperlipidemic	P: L-amino-methyl cyclohexaneacetic T: anticonvulsant	P: thiazide diuretic T: diuretic
Mechanism of Action	When cysteinyl leukotrienes bind to receptors in bronchial Airways, they increase endothelial membrane permeability, which leads to airway edema, smooth muscle contraction, and altered activity	This medication inhibits the enzyme cyclooxygenase, blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system. Medication also acts directly on temperature regulating center and hypothalamus by	Reduces plasma cholesterol and lipoprotein levels by inhibiting HMG-CoA reductase and cholesterol synthesis in the liver and by increasing the number of LDL receptors on liver cells to enhance LDL uptake and	Gabapentin is exact mechanism of action is unknown, G ABA inhibits the rapid firing of neurons associated with seizures. It also may prevent exaggerated responses to painful stimuli	Inhibits sodium reabsorption in the distal tubules causing increased excretion of sodium and water as well as potassium and hydrogen ions. Initially, it may decrease cardiac output, extracellular fluid volume, or plasma volume, which helps explain blood pressure reduction. It also may reduce blood pressure

	of cells in asthmas inflammatory process. Montelukast blocks these effects (Jones & Bartlett Learning, 2021).	inhibiting synthesis of prostaglandin (Jones & Bartlett Learning, 2021).	breakdown (Jones & Bartlett Learning, 2021).	and pain related responses to a normally innocuous stimulus to account for its effectiveness in relieving post therapetic neuralgia and restless leg syndrome symptoms (Jones & Bartlett Learning, 2021).	by direct arterial dilatation. After several weeks, cardiac output, extracellular fluid volume, and plasma volume return to normal, and peripheral vascular resistance remains decreased (Jones & Bartlett Learning, 2021).
Reason Client Taking	Allergies/rhinitis	General pain	High cholesterol	Neuropathy	High blood pressure
Contraindications (2)	Hypersensitivity to montelukast. Hypersensitivity to components of montelukast.	Severe hepatic impairment. Severe active liver disease.	Active hepatic disease. Unexplained persistent rise in serum transaminase level.	Hypersensitivity to gabapentin. Renal impairment: use with caution in patients with renal impairment dose adjustment required.	Hypersensitivity to hydrochlorothiazide. (Canadian) increasing azotemia and oliguria during treatment of severe progressive renal disease.
Side Effects/Adverse Reactions (2)	Seizures Increased bleeding tendency	Hypotension Hypokalemia/ hypomagnesemia	Arrythmias Hepatic failure	Bradycardia has been reported in infants receiving gabapentin. Central nervous system and respiratory depression.	Aplastic anemia Acute kidney injury
Nursing Considerations (2)	Know that this medication is not for acute asthma attacks or status asthmaticus. This medication should not be abruptly substituted for inhaled or oral corticosteroids.	Use medication cautiously in patients with hepatic impairment or active hepatic disease, alcoholism, chronic malnutrition, severe hypovolemia, or severe renal impairment. Before and during long term therapy including parenteral therapy, liver function test results as ordered must be monitored because the medication may cause hepatotoxicity. Ensure the daily dose does not exceed maximum daily limits.	Expect atorvastatin to be used in patients without obvious coronary artery disease but with multiple risk factors such as age 55 or over, family history of early coronary artery disease, history of hypertension or low HDL level or is a smoker. Know that atorvastatin is used in patients with homozygous familial hypercholesterolemia as an adjunct to other	This medication may cause dose dependent CNS depression and present as dizziness and or drowsiness. In addition, serious, life threatening, and fatal respiratory depression may occur. Anaphylaxis or angioedema may occur. Signs and symptoms may include dyspnea, swelling of the lips, throat, and tongue, and hypotension.	Beers criteria: Diuretics are identified in the beers criteria as potentially inappropriate medications to be used with caution in patients 65 years and older due to the potential to cause or exacerbate syndrome of inappropriate anti diuretic hormone secretion or hyponatremia; Monitor sodium concentration closely when initiating or adjusting the dose in older adults. HCTZ is an error prone abbreviation (mistaken as hydrocortisone). Skin photosensitivity may occur with hydrochlorothiazide.

			lipid lowering treatments or alone only if other treatments aren't available.		Cumulative use may increase the risk for squamous cell carcinoma of skin and basal cell carcinoma of skin.
Key Nursing Assessment(s)/Lab(s) Prior to Administration	Inquire of patient if they have aspirin sensitivity and to avoid aspirin and NSAIDs during therapy due to the medication not effectively reducing bronchospasm in such patient. Monitor patient for adverse reactions such as cardiac and pulmonary symptoms, vasculitis especially in patients undergoing corticosteroid withdrawal.	Do not confuse a dose in milligrams with a dose in millimeters when preparing and administering the parenteral form of acetaminophen. prior to administration review liver function test results.	Expect liver function tests to be performed before after atorvastatin therapy starts and then again thereafter as clinically necessary.	Routine monitoring of blood gabapentin level is not necessary. Monitor renal function test results, as ordered, and expect to adjust dosage if needed.	Reversible hypokalemia, hypomagnesemia, hypercalcemia, and hyponatremia may occur with hydrochlorothiazide and may increase the risk of arrhythmias. This medication may cause hyperuricemia and precipitate gout or gouty arthritis and susceptible individuals.
Client Teaching Needs (2)	Advise the patient to take daily as prescribed even if they feel unwell. Instruct patient to report increased bleeding tendency or severe skin reaction that occurs without warning immediately to the prescriber.	Inform the patient that tablets may be crushed or swallowed whole. Instruct patient to read manufacturers label and follow dosage guidelines precisely. Caution patient not to exceed recommended dosage or take other drugs containing this medication at the same time because of the risk of liver damage advise them to contact prescriber before taking other prescriptions or over the counter products because they may contain this medication.	Instruct the patient to take the drug at the same time each day to maintain its effects. Advise patient to notify prescriber immediately if they develop unexplained muscle pain, tenderness, or weakness, especially if accompanied by fatigue or fever.	Wait two hours after taking an antacid to take gabapentin. For the patient who has trouble swallowing gabapentin capsules they may open them and sprinkle contents and juice or on soft food immediately before use. If you are taking gabapentin extended-release tablets you must swallow the tablet whole and not chew, crush, or split the tablet.	Due to dermatologic toxicity skin photosensitivity may occur with this medication inform the patient to use sunscreen and be cautious when in direct sunlight. Diuretics reduce the minimum UV radiation needed to produce a sunburn like response, increasing the risk of phototoxicity. Advise patient to take medication in the morning and early evening to avoid awakening during the night to urinate. Tell patient to weigh themselves at the same time each day wearing the same amount of clothing and to notify prescriber if they gain more than two pounds per day or 2.3 kilograms per week. Advise patient to eat a diet high in potassium rich foods, including, bananas, citrus fruits, dates, and tomatoes.

Hospital Medications (5 required)

Brand/Generic	Elavil/ amitriptyline	Rocephin/ ceftriaxone	Hepalean/ heparin	Vancocin/ vancomycin	Acetadote/ acetylcysteine
Dose	50mg	2000mg	300units	500mg	600mg
Frequency	HS	Q24H	TID	Q18H	BID
Route	Oral	Intravenous	Subcutaneous injection	Intravenous	Oral
Classification	P: tricyclic antidepressant T: antidepressant	P: 3rd generation Cephalosporin T: antibiotic	P: anticoagulant T: anticoagulant	P: glycopeptide T: antibiotic	P: L-cystine derivative T: antidote (for acetaminophen overdose), mucolytic.
Mechanism of Action	Increases the synaptic concentration of serotonin and or norepinephrine in the central nervous system by inhibition of their reuptake by the presynaptic neuronal membrane pump (Jones & Bartlett Learning, 2021).	Inhibits bacterial cell wall synthesis by binding to one or more of the penicillin binding proteins which in turn inhibits the final transpeptidation step of peptidoglycan synthesis in bacterial cell walls, thus inhibiting cell wall biosynthesis. Bacteria eventually lyce due to ongoing activity of cell wall autolytic enzyme while cell wall assembly is arrested (Jones & Bartlett Learning, 2021).	At low doses, heparin inhibits factor XA and prevents conversion of prothrombin to thrombin. Thrombin is needed for conversion of fibrogen to fibrin; without fibrin, clots can't form. At high doses, heparin inactivates thrombin, preventing fibrin formation and existing clot extension.(Jones & Bartlett Learning, 2021).	Inhibits bacterial cell wall synthesis by blocking glycopeptide polymerization through binding tightly to D-alanyl-D- alanine portion of cell wall precursor (Jones & Bartlett Learning, 2021).	For acetaminophen overdose: Acetylcysteine acts as hepatoprotective agent by restoring hepatic glutathione, serving as a glutathione substitute, and enhancing the non-toxic sulfate conjugation of acetaminophen. Mucolytic: exerts mucolytic action through its free sulfhydryl group which opens the disulfide bonds and the mucoprotein thus lowering mucus viscosity (Jones & Bartlett Learning, 2021).
Reason Client Taking	Depression	Wound infection	Elevated D-dimer	Wound infection	Expectorant
Contraindications (2)	Hypersensitivity to amitriptyline. Severe liver	Elevated INR. Renal hepatic impairment.	History of heparin induced thrombocytopenia.	Hypersensitivity to vancomycin. Hypersensitivity to	Hypersensitivity to acetylcysteine. No contraindications

	impairment. Acute heart failure.		Uncontrolled active bleeding, except in disseminated intravascular coagulation.	corn or corn products when given with dextrose solutions.	when used as an antidote. Acetylcysteine may be confused with acetylcholine.
Side Effects/Adverse Reactions (2)	Arrhythmias, including prolonged AV conduction, heart block, and tachycardia. Hyperglycemia/ hypoglycemia	Clostridium difficile associated diarrhea. Pancreatitis Aplastic anemia	Chest pain. Excessive bleeding from wounds, hemorrhage, heparin induced thrombocytopenia.	Chills, dizziness, fatigue, fever, headache, insomnia, vertigo. Hypertension, peripheral edema, ototoxicity.	Cold and clammy skin. Bronchoconstriction, bronchospasm, rhinorrhea.
Nursing Considerations (2)	Amitriptyline may increase the risk of bleeding, particularly if used concomitant with antiplatelets and anticoagulants. Use caution if patient has a history of seizures, urinary retention, or angle closure glaucoma because of amitriptyline atropine-like effects	Use with caution and patience with concurrent hepatic dysfunction and severe kidney disease; Dosing adjustments may be recommended. Maybe associated with increased INR, especially in nutritionally deficient patients, prolonged treatment, hepatic or renal disease.	Use heparin cautiously and Alcoholics; Menstruating women; Patients over age 60, especially women; And patients with conditions that increase risk of hemorrhage. Give heparin only by subcutaneous or IV route, IM use causes hematoma, irritation and pain. Don't use heparin sodium injection as a catheter lock flush because fatal errors have occurred in children when 1mL heparin sodium injection vials were confused with 1mL catheter lock, flush viles, always examine violable closely to ensure correct product is being used.		Treating acetaminophen overdose with intravenous therapy may require adjusting total administered volume, as ordered, for patients weighing less than 40 kilograms and for those who need fluid restriction, to avoid fluid overload and possibly fatal hyponatremia or seizures. Have patient wash their face and rinse their mouth at the end of each nebulization treatment because nebulization causes sticky residue on face and in mouth.
Key Nursing Assessment(s)/Lab(s) Prior to Administration	Monitor blood pressure for hypotension or hypertension. Stay alert for behavior changes such as hallucinations and decreased	Obtain culture and sensitivity results if possible before giving drug. Protect powder from light.	Check patient's hematocrit and platelet count prior to heparin therapy, expect to periodically check patient's hematocrit and platelet count during heparin	Monitor periodic renal function tests comma CBC comma pregnancy test prior to use. Serial auditory function testing may be helpful to minimize risk of	Assess type, frequency, and characteristics of patient's cough. Particularly note sputum. If cough doesn't clear secretions, prepare to perform mechanical suctioning.

	interest in personal appearance. Note that psychosis may develop in schizophrenic patients, and symptoms may increase in paranoid patients.	Ask patient if an allergic reaction was ever experienced when given other antibiotics. Patients who have had previous hypersensitivity reactions to carbapenems, penicillin, or other drugs may be at high risk for developing a serious reaction that may be fatal. Monitor all patients closely for hypersensitivity reaction, if present discontinue immediately, notify prescriber, and be prepared to provide emergency supportive care as prescribed.	therapy. Read heparin label carefully. Revision has been made to state the strength of the entire container of heparin, followed by how much heparin is in one milliliter.	ototoxicity. Monitor patient closely for diarrhea when receiving intravenous form of vancomycin, because it may indicate pseudomembranous colitis caused by C difficile, a risk with many antibiotics.	Monitor patient for tachycardia.
Client Teaching Needs (2)	Inform patient to avoid using alcohol or over the counter drugs that contain alcohol during amitriptyline therapy because alcohol enhances the central nervous system depressant effects. Urge family or caregiver to watch patient closely for suicidal tendencies, especially when therapy starts or dosage changes, particularly if patient is teenager or young adult.	Urge patient to report watery, bloody stools to prescriber immediately, even up to two months after drug therapy is ended. Advise patient to report any hypersensitivity reactions, such as a rash, itching skin, or hives, to prescriber immediately and stop taking the drug.	Alternate injection sites and watch for signs of bleeding and hematoma. Explained that heparin cannot be taken orally. Inform patient about increased risk of bleeding and the urge to avoid injuries and use soft bristled toothbrush and an electric razor.	Advise patient to notify provider if no improvement occurs after a few days. Instruct patient to notify prescriber if they develop persistent or severe diarrhea. Encourage patient to keep follow up appointments during and after treatment. Instruct patient to complete full course of vancomycin as prescribed.	Urge patient prescribed this medication to loosen mucus, to consume 2 to 3 liters of fluid daily unless contraindicated by another condition, to decrease mucus viscosity. Instruct patient to notify prescriber immediately about nausea, rash, or vomiting, as well as feeling dizzy or lightheaded, shortness of breath, or wheezing.

Medications Reference (1) (APA):

Jones & Bartlett Learning. (2021). *Nurse's Drug Handbook* (Twentieth Edition).

Assessment

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

GENERAL: **Alertness:** **Orientation:** **Distress:** **Overall appearance:**	Patient appears alert and oriented x 4 to person place, date and time, she is well groomed and in no acute distress. Appearance is appropriate for situation.
INTEGUMENTARY: **Skin color:** **Character:** **Temperature:** **Turgor:** **Rashes:** **Bruises:** **Wounds:** . **Braden Score:** 17 **Drains present: Y☐ N ☒** **Type:**	Patient skin color is pink, skin warm and dry. No rashes, lesions. Patient has a temperature of 36.8 degrees Celsius. Normal quantity and distribution and texture of hair. No clubbing or cyanosis noted in nails. Skin turgor normal mobility. No signs of rashes. Numerous bruises on chin trunk arms and legs, due to prior weakness and falling. Wound to right leg consistent with hematoma noted in records prior to this visit. No drains are present. Patient has a Braden score of 17.
HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	Head and neck are symmetrical, trachea is midline without deviation. Bilateral carotid pulses are palpable and two +. Patient denies facial numbness or tingling. Ears are symmetrical and have no visible deformities lumps or lesions. Patients' bilateral sclera is white, bilateral cornea clear, bilateral conjunctiva pink with no visible drainage from eyes. PERRLA bilaterally. Eyes are equal round and reactive and accommodate to light. Septum is midline, Nares are patent and show no sign of polyps. Oral mucosa is pink and moist and patient's teeth are clean and intact. .
CARDIOVASCULAR: **Heart sounds:** **S1, S2, S3, S4, murmur etc.** **Cardiac rhythm (if applicable):** **Peripheral Pulses:**	Patient has clear heart sounds with no murmurs or gallops, or rubs notated with a normal rate and rhythm. Upper extremity bilateral radial pulses are 2+. Patient has two + pitting edema to both feet. Capillary refill is less than three seconds in

Capillary refill: **Neck Vein Distention: Y ☐ N ☒** **Edema Y ☒ N ☐** **Location of Edema:** bilateral lower extremities	all extremities bilaterally. Patient has no neck vein distention.
RESPIRATORY: **Accessory muscle use: Y☐ N ☒** **Breath Sounds: Location, character**	Patient has normal rate and pattern of respirations. Respirations are non-labored, no use of accessory muscles, lung sounds clear in all lobes, no wheezes, crackles, or rhonchi noted. patient has an oxygen saturation of 93% on room air.
GASTROINTESTINAL: **Diet at home:** unknown **Current Diet:** heart healthy **Height:** 155cm **Weight:** 111.9 kg **Auscultation Bowel sounds:** **Last BM:** 2/20 in the am **Palpation: Pain, Mass etc.:** **Inspection:** **Distention:** **Incisions:** **Scars:** **Drains:** **Wounds:** **Ostomy: Y ☐ N ☒** **Nasogastric: Y ☐ N ☒** **Size:** **Feeding tubes/PEG tube Y ☐ N ☒** **Type:**	Diet at home and at hospital is heart healthy with a low sodium restriction and a caloric restriction of 1800 to 2000. Abdomen is soft and non-tender, no masses upon palpitation of all four quadrants. Bowel sounds are normal active in all four quadrants. Patient has no distension, incisions drains or wounds, no ostomies, or nasogastric tubes or feeding tubes in place.
GENITOURINARY: **Color:** **Character:** **Quantity of urine:** 800 mL **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒** **Inspection of genitals:** **Catheter: Y ☒ N ☐** **Type:** Foley **Size:** 16 French	Urine is clear and yellow with an 800 mL quantity output via 16 French Foley catheter, bag appropriately placed on the bed. Patient denies pain with urination. Some redness and soreness noted in outer labia. Patient is not on dialysis and has a 16 French Foley catheter in place.
MUSCULOSKELETAL: **Neurovascular status:** **ROM:** **Supportive devices:** walker, cane	Patient Shows active range of motion with strength equal in upper extremities. The patient denies any pain. Patient uses a walker and cane for support when ambulating. Hand grips, pushes,

Strength: **ADL Assistance: Y☒ N ☐** **Fall Risk: Y ☒ N☐** **Fall Score:** 85 **Activity/Mobility Status:** **Independent (up ad lib)** ☐ **Needs assistance with equipment** ☐ **Needs support to stand and walk** ☐	and pulls demonstrate normal and equal strength. Noted edema in bilateral lower limbs. Patient is a high fall risk with an assessed score of 85.
NEUROLOGICAL: **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☒ N ☐ if no -** **Legs ☐ Arms ☐ Both ☐** **Orientation:** A&Ox4 **Mental Status:** **Speech:** **Sensory:** **LOC:** Alert and oriented	No focal neurological deficits noted. No noted sensory deficits. Patient is alert and oriented to person, place, date, and time. Patients' mental status and speech seem accurate for circumstance. Patient was a bit drowsy upon initial visit.
PSYCHOSOCIAL/CULTURAL: **Coping method(s):** **Developmental level:** **Religion & what it means to pt.:** **Personal/Family Data (Think about home environment, family structure, and available family support):**	Coping methods are normal. Developmental level appropriate. Religion and personal family structure and support apparent and appropriate. Patient is cooperative and mood and effect are appropriate.

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

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
07:59	87	127 / 68	18	37.1	93
10:56	77	122 / 69	18	36.8	91

Vital Sign Trends:

Pain Assessment, 2 sets (2 points)

Time	Scale	Location	Severity	Characteristics	Interventions

07: 59	number	NA	0/10	NA	No interventions necessary at this time.
10: 56	number	NA	0/10	NA	No interventions necessary at this time.

IV Assessment (2 Points)

IV Assessment	Fluid Type/Rate or Saline Lock
Size of IV: 22 gauge **Location of IV:** Left AC **Date on IV:** 02/18/2023 **Patency of IV:** no complications, flushes easily. **Signs of erythema, drainage, etc.:** No signs of erythema or drainage. **IV dressing assessment:** Dry clean and intact.	Normal saline- rate of 75

Intake and Output (2 points)

Intake (in mL)	Output (in mL).
Intake unknown, prior to arrival.	800 milliliter the 16 French Foley catheter emptied 0900

Nursing Care

Summary of Care (2 points)

Overview of care: Patient was initially admitted for hypotension and low PaSO2. Testing indicated an elevated D dimer and an elevated creatinine. A full body assessment was performed.

Procedures/testing done: The patient had a chest X-ray, a renal ultrasound complete with bladder and a venous duplex ultrasound of the lower bilateral extremities.

Complaints/Issues: Complaint issued was shortness of breath upon exertion.

Vital signs (stable/unstable): The vital signs were stable, the patient's pulse temperature oxygen saturation and blood pressure we're all within normal limits.

Tolerating diet, activity, etc.: The patient is on a heart healthy low sodium calorie restricted diet and seems to be tolerating the diet well. PT/OT had not been in to see the patient prior to or during this clinical time.

Physician notifications: The patient was not seen by the physician during this clinical time.

Future plans for client: The wound clinic is to come assess the patient today but had not yet evaluated the patient during this clinical time.

Discharge Planning (2 points)

Discharge location: Odd Fellows Nursing Facility

Home health needs (if applicable): NA

Equipment needs (if applicable): There will be no other equipment needs beyond the walker and cane she already utilizes.

Follow up plan: The patient will continue to utilize PT/OT as tolerated.

Education needs: The patient will be educated on any new medications.

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

Nursing Diagnosis	**Rationale**	**Interventions (2 per dx)**	**Outcome Goal (1 per dx)**	**Evaluation**
• Include full nursing diagnosis with “related to” and “as evidenced	• Explain why the nursing diagnosis			• How did the client/family respond to the nurse’s

by" components • Listed in order by priority – highest priority to lowest priority pertinent to this client	was chosen			actions? • Client response, status of goals and outcomes, modifications to plan.
1. Excess fluid volume related to decreased kidney function evidenced by edema and decreased hemoglobin (Doenges et al., 2019).	The patient had edema in her bilateral lower extremities, an elevated creatinine, decreased red blood cells, and decreased hemoglobin all indications of possible decreased kidney function.	1. Assess precipitating factors for the reason of excess fluid volume. Note indication of medical conditions or situations such as renal insufficiency with the cute kidney injury that can contribute to excess fluid or retention (Doenges et al., 2019). 2. Asses the presence and location of edema. Renal failure is associated with dependent edema because of hydrostatic pressures with dependent edema being defining characteristics for excess fluid (Doenges et al., 2019).	1. Patient will be able to verbalize understanding of individual dietary and or fluid restriction by the time she is discharged.	The patient and the patients daughter understood the necessity for sodium restriction and was able to read labels for the amount of sodium per serving.
2. Risk for	The patient	1. Evaluate the	1. Patient will	The patient

decreased cardiac output as evidenced by alterations in myocardial workload and hypoxia, evidenced by low blood pressure and low SaO2 (Doenges et al., 2019).	had an initial hypotensive blood pressure of 111/58 and a low SaO2 of 84% on room air, and had been feeling more tired and getting fatigued easier recently, which indicates a decrease in cardiac output.	degree of excess of fluid volume by measuring vital signs and invasive hemodynamic parameters. Low pressures can indicate cardiac failure is occurring, as well as resulting in tissue hypoxia (Doenges et al., 2019). 2. Record I&O accurately, so that adjustments can be made for sodium restriction, which would favor renal excretion of excess fluid (Doenges et al., 2019).	be able to demonstrate an increase in activity tolerance, identify signs of fatigue, alter activity, and seek help appropriately by the time she is discharged.	demonstrated an increase in their activity when they returned to their facility and they were able to verbalize signs of cardiac decompensation by signs of fatigue and understood what they needed to do to seek help.
3. Risk for bleeding disorder related to decreased red blood cell production evidenced by abnormal blood profile and altered clotting factors (Doenges et al., 2019).	The patient had a decreased level of red blood cells and an elevated D-dimer.	1.Evaluate and mark boundaries of soft tissues and enclosed structures such as a leg or abdomen to document expanding bruises or hematomas (Doenges et al., 2019). 2. Prepare the	1. Patient's laboratory results and vital signs will be within normal limits by the time they are discharged.	The patient and patients' family members understood the necessity for I'm going regular labs and blood draws. The patient's family members were able to provide a schedule for taking the patient to appointments.

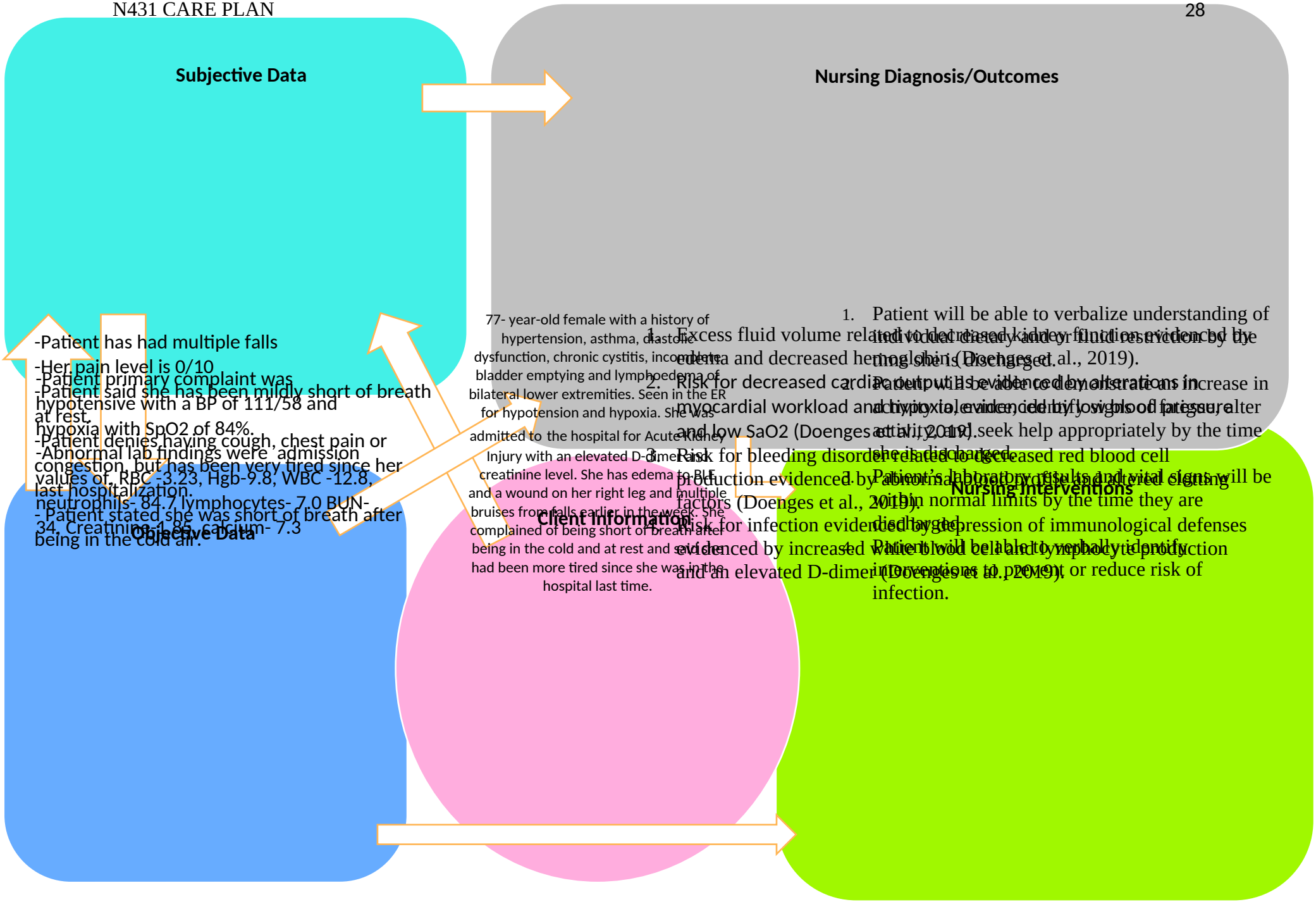
		client for or assist with diagnostic studies such as X-rays, computed tomography, magnetic resonance imaging or ultrasounds to determine the presence of injuries or disorders that could cause internal bleeding (Doenges et al., 2019).		
4. Risk for infection evidenced by depression of immunological defenses evidenced by increased white blood cell and lymphocyte production and an elevated D-dimer (Doenges et al., 2019).	The patient had an increase of white blood cells and lymphocytes and an elevated D-dimer which could indicate infection at the site of a wound on her leg.	1. Observe patient for changes in mental status, skin warmth and color, heart and respiratory rate that could be signs of developing systematic infection (Doenges et al., 2019). 2. Observe patient wound for changes in color and or odor of secretions or drainage that could indicate onset of infection (Doenges et al.,	1. Patient will be able to verbally identify interventions to prevent or reduce risk of infection.	The patient was able to identify signs of infection and was able to verbalize what they needed to do to prevent or reduce the risk of infection.

		2019).		

Other References (APA):

Doenges, M. E., Moorhouse, M. F., & Murr, A. C. (2019). *Nurse's pocket guide: Diagnoses, prioritized interventions, and rationales*. F.A. Davis.

Concept Map (20 Points):


Subjective Data
-Patient has had multiple falls
-Her pain level is 0/10
-Patient primary complaint was
-Patient said she has been mildly short of breath
hypotensive with a BP of 111/58 and
at rest.
hypoxia with SpO2 of 84%.
-Patient denies having cough, chest pain or
-Abnormal lab findings were admission
congestion, but has been very tired since her
values of, RBC -3.23, Hgb-9.8, WBC -12.8,
last hospitalization.
neutrophils- 84.7 lymphocytes- 7.0 BUN-
- Patient stated she was short of breath after
34, Creatinine-1.85, calcium- 7.3
being in the cold air.
Objective Data
77- year-old female with a history of
hypertension, asthma, diastolic
dysfunction, chronic cystitis, incomplete
bladder emptying and lymphedema of
bilateral lower extremities. Seen in the ER
for hypotension and hypoxia. She was
admitted to the hospital for Acute Kidney
Injury with an elevated D-dimer and
creatinine level. She has edema to BLE
and a wound on her right leg and multiple
bruises from falls earlier in the week. She
complained of being short of breath after
being in the cold and at rest and evidence
had been more tired since she was in the
hospital last time.
Client Information
Nursing Diagnosis/Outcomes
1. Excess fluid volume related to decreased kidney function evidenced by edema and decreased hemoglobin (Doenges et al., 2019).
2. Risk for decreased cardiac output as evidenced by alterations in myocardial workload and hypoxia evidenced by low SaO2 (Doenges et al., 2019).
3. Risk for bleeding disorder related to decreased red blood cell production evidenced by abnormal blood profile and altered clotting factors (Doenges et al., 2019).
4. Risk for infection evidenced by depression of immunological defenses evidenced by increased white blood cell and lymphocyte production and an elevated D-dimer (Doenges et al., 2019).
Nursing Interventions
1. Patient will be able to verbalize understanding of individual dietary and/or fluid restriction by the time she is discharged.
2. Patient will be able to demonstrate an increase in activity tolerance, evidenced by vital signs remaining within normal limits by the time they are discharged.
3. Patient's laboratory results and vital signs will be within normal limits by the time they are discharged.
4. Patient will be able to verbally identify interventions to prevent or reduce risk of infection.