N321 Care Plan # 1

Lakeview College of Nursing

Name: Destiny Bell

Demographics (3 points)

Date of Admission: 9/23/22	Client Initials B.H	Age: 87 years old	Gender Female
Race/Ethnicity African American	Occupation: Retired/Unemployed	Marital Status Widowed	Allergies N/A No known allergies
Code Status: Full code	Height: 152.4 cm	Weight 69.9 kg	

Medical History (5 Points)

Past Medical History:

- Hypertension

- Hyperlipidemia

- Memory loss

- Post herpetic neuralgia

- MEN 1 syndrome (multiple endocrine neoplasia)

Past Surgical History:

- Bilateral knee surgery, date of surgery unknown

- Breast core biopsy, date of biopsy unknown

Family History:

- Mother; Dementia

- Father; Cancer unknown type

- Brother; Cancer unknown type

- Sister; Cancer unknown type

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

- N/A (Denies any tobacco, alcohol, or drug usage)

Assistive Devices: Walker

Living Situation: Lives at home with her son

Education Level: High school diploma

Admission Assessment

Chief Complaint (2 points): Altered Mental Status

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

B.H is a 87 year old African American female who presented to the emergency room on 9/23/22
accompanied by her son with a chief complaint of increased confusion, fever and weakness.
Patient's son reports that the patient started not acting her normal self just prior to arrival. He
reports that no interventions were attempted before arrival. He denies any known illness
contacts. Patient alert and orientated x 1 at arrival. Patient denies any headache, urinary pain, or
covid exposure to her knowledge.

Primary Diagnosis

Primary Diagnosis on Admission (2 points): Community Acquired Pneumonia

Secondary Diagnosis (if applicable): N/A

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

Community-acquired pneumonia (CAP) is caused by the bacteria *Streptococcus pneumoniae*
however, other pathogens such as *H. influenzae, Mycoplasma, Klebsiella, Staphylococcus* and
Legionella species and gram-negative organisms can lead to pneumonia (Capriotti 2020). One of
the major risk factors for pneumonia is an influenza infection because viruses tend to alter the
immune system's defense and make the lungs more susceptible to bacterial infections (Capriotti
2020). Immunosuppression, such as an HIV infection, as well as aspiration can predispose
patients to pneumonia (Capriotti 2020). Other risk factors for pneumonia include lung cancer,

COPD, and bronchiectasis (Capriotti 2020). Smoking impairs the resistance to infection and alcohol and drug usage increases the risk for aspiration pneumonia (Capriotti 2020). Medical conditions that increase the risk of aspiration are also of concern, such as esophageal disorders, alcoholism, and neuromuscular disorders, which our patient has endocrine neoplasia which could play into her diagnosis of pneumonia and her risk for aspiration (Ticona et al., 2021). Pneumonia is most commonly caused by the inhalation of droplets containing pathogens (Capriotti 2020). The droplets enter the patient's upper airways and then enter into the lungs tissue where they adhere to respiratory epithelium and stimulate an inflammatory response (Capriotti 2020). The inflammation then spreads to the lower respiratory tract and alveoli, at the inflammation sites vasodilation then occurs causing neutrophils to move from the capillaries into air spaces (Capriotti 2020). The neutrophils then phagocytize microbes therefore killing them using reactive oxygen species, antimicrobial proteins and digestive enzymes (Capriotti 2020). There is an excessive stimulation of respiratory goblet cells that secrete mucus, mucus and edema accumulate between the alveoli and capillaries (Capriotti 2020). The alveoli attempt to open and close against the exudate, however some are unable to open, the sounds can be heard with a stethoscope over the alveoli opening against the fluid resulting in crackle noises as we seen in our patient when auscultating her lung sounds she had bilateral crackles throughout both lobes (Capriotti 2020). Edema and infectious exudate at the capillary and alveoli interface hinder gas exchange, which can cause the patient to become hypoxic and hypercapnic with obstructed exchange of O2 and CO2 at the pulmonary capillaries (Capriotti 2020).

The clinical presentation of bacterial pneumonia usually starts with a sudden onset of symptoms such as cough, fever, chills, chest pain, dyspnea, and decreased exercise tolerance (Capriotti 2020). We seen these symptoms present in our patient when the patient came to the

emergency room with a chief complaint confusion and weakness. Other nonspecific symptoms that may be seen with pneumonia are myalgia, headache, abdominal pain, nausea, and vomiting (Capriotti 2020). Upon physical examination a patient with pneumonia is likely to exhibit a fever, tachypnea, use of accessory muscles while breathing, tachycardia, and could even exhibit cyanosis (Capriotti 2020). The lung sound, crackles, is pathognomonic of pneumonia and the physician can use the tests known as egophony, bronchophony and whispered pectoriloquy to assess the patient's lung sounds (Capriotti 2020). The patient's physician ordered many diagnostic procedures such as a chest x-ray to aid in the diagnosis of pneumonia. When interviewing the patient, it is important to assess for exposure to any other individuals who may be ill and see if the patient has any aspiration risks or immunosuppression factors that would put them at greater risk (Capriotti 2020). We asked the patient upon her arrival to the emergency room if there was any known exposure to anyone who is sick or who has covid and patient denied any known exposures to illnesses.

It is known that age can play a huge factor in the risk of an individual developing pneumonia, especially among individuals over the age of 84 due to their declining immune system (Ticona et al., 2021). Age could have played a role in our patient contracting pneumonia due to her being 87 years old. Pneumonia assessment systems such as PSI, pneumonia severity index, were designed to help healthcare members direct the appropriate level of care for the patient based on a 30-day mortality risk and are used guide appropriate antibiotic treatment and determine patients who require admission into the ICU (Ticona et al., 2021). Class I of the PSI is determined by the absence of risk factors such as the patient being over age 50 or a temperature greater than 40 degrees Celsius or 104 degrees Fahrenheit (Ticona et al., 2021). Class II-V of the PSI is determined by all the factors included in class I in addition to gender, and lab findings

including a bun concentration <30 which is seen in our patient as her BUN is 7, a glucose level

> 250 mg/dl, hematocrit < 30%, sodium <130 mmol/L, partial pressure oxygen of < 60 mmHg,

arterial ph of less than 7.35 and a pleural effusion (Ticona et al., 2021). In elderly patient

diagnosed with pneumonia we can see an array of symptoms. Some common symptoms seen in

elderly individuals that led to a diagnosis of pneumonia are falls, altered mental status, fatigue,

lethargy, anorexia, tachypnea, tachycardia, fever, leukocytosis, and cough (Ticona et al., 2021).

A few of these symptoms were exhibited in our patient and were what prompted her to come to

the emergency room, such as her altered mental status, elevated fever, and a new onset of a

cough. Community acquired pneumonia can be diagnosed from both clinical and radiographic

findings, such as symptoms including a cough, elevated temp, and crackles upon auscultation, in

which we seen all of these in our patient today (Ticona et al., 2021).

Pathophysiology References (2) (APA):

Capriotti, Theresa M. "Davis Advantage for Pathophysiology: Introductory Concepts and

Clinical Perspectives" 2nd ed. (2020). *F.A Davis Company.*

Ticona, J. H., Zaccone, V. M., & McFarlane, I. M. (2021). Community-Acquired Pneumonia: A

Focused Review. *American journal of medical case reports*, *9*(1), 45–52.

https://doi.org/10.12691/ajmcr-9-1-12

Laboratory Data (15 points)

CBC <mark>Highlight All Abnormal Labs</mark>—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	3.80-5.30 mcL	<mark>**3.75 mcL**</mark>	<mark>**3.67 mcL**</mark>	Decreased red blood counts can be caused by a chronic illness, in which the patient is currently sick with pneumonia. Decreased levels can also be caused by anemia or dietary deficiency (PhD Rn & Facs, 2021).
Hgb	12.0-15.8 g/dL	<mark>**11.9 g/dL**</mark>	<mark>**11.2 g/dL**</mark>	Decreased hemoglobin levels can be caused by neoplasia in which the patient has MEN1 syndrome, multiple endocrine neoplasia (PhD Rn & Facs, 2021).
Hct	36.0-47.0%	<mark>**34.8 %**</mark>	<mark>**34.2%**</mark>	Decreased hematocrit levels can be related to dietary deficiency, anemia, or hyperthyroidism (PhD Rn & Facs, 2021).
Platelets	140-440 mcL	<mark>**66 mcL**</mark>	**172 mcL**	Decreased platelets can be caused by acute or chronic infections, in which the patient currently has community acquired pneumonia (PhD Rn & Facs, 2021).
WBC	4.00-12.00 mcL	**10.10 mcL**	**5.40 mcL**	
Neutrophils	47.0-73.0 %	<mark>**78.9 %**</mark>	**48.3 %**	High levels of neutrophils correlate to a bacterial infection, in this case it is related to the patient's diagnosis of pneumonia (PhD n & Facs, 2021).
Lymphocytes	18.0-42.0 %	<mark>**5.3%**</mark>	**28.9%**	Reduced lymphocyte counts can due to the patient having a bacterial infection, community acquired pneumonia.
Monocytes	4.0 – 12.0 %	<mark>**15.3%**</mark>	<mark>**18.6%**</mark>	Elevated monocyte counts are typically related to infection and inflammation, in which the patient currently has a bacterial infection, community acquired pneumonia (PhD Rn & Facs, 2021).
Eosinophils	0.0-5.0 %	**0.2%**	**3.7%**	
Bands	0.0-10.0 %	**N/A**	**N/A**	

Chemistry <mark>Highlight All Abnormal Labs</mark>—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	<mark>132 mmol/L</mark>	137 mmol/L	Decreased sodium levels can be due to deficient dietary intake, diarrhea, Addison's disease, and the administration of diuretics which the patient is taking a diuretic (PhD Rn & Facs, 2021).
K+	3.5-5.1 mmol/L	<mark>3.4 mmol/L</mark>	4.3 mmol/L	Decreased potassium levels can be due to deficient dietary intake or the use of diuretics, in which the patient is currently take furosemide, a loop diuretic (PhD Rn & Facs, 2021).
Cl-	98-107 mmol/L	102 mmol/L	105 mmol/L	
CO2	21-31 mmol/L	21 mmol/L	25 mmol/L	
Glucose	70-99 mg/dL	94 mg/dL	90 mg/dL	
BUN	7-25 mg/dL	14 mg/dL	7 mg/dL	
Creatinine	0.50-1.00 mg/dL	<mark>1.09 mg/dL</mark>	0.92 mg/dL	Medications such as ACE inhibitors like lisinopril which the patient is taking can cause elevated creatinine levels other causes can be due to shock and possible dehydration (PhD Rn & Facs, 2021).
Albumin	3.5-5.7 g/dL	3.6 g/dL	<mark>3.4 g/dL</mark>	Low albumin levels can be a sign of liver disease, cirrhosis, or GI malabsorption (PhD Rn & Facs, 2021). This patient currently has a trace of mild fatty tissue in the liver as well as a trace of ascites in her abdomen. .
Calcium	8.8-10.2 mg/dL	<mark>11.1 mg/dL</mark>	<mark>11.7 mg/dL</mark>	The patient is taking hydralazine which can cause elevated calcium levels. Increased levels can also be caused by Addison's disease (PhD Rn & Facs, 2021).

Mag	**1.6-2.6 mg/dL**	**N/A**	**N/A**	
Phosphate	**2.4-4.5 mg/dL**	**N/A**	**N/A**	
Bilirubin (t-bili)	**0.2 -0.8 mg/dL**	**1.7 mg/dL**	**0.6 mg/dL**	Elevated bilirubin can result from the use of medications such as diuretics, which the patient is taking furosemide, and also by antibiotics. Increased levels can also be due to gallstones in which multiple calcified gallstones were noted in her abdominal ultrasound (PhD Rn & Facs, 2021).
Alk Phos	**34-104 U/L**	**113 U/L**	**82 U/L**	High alkaline phosphate levels can be caused by a variety of medications such as antibiotics and tetracyclines. Elevated phosphate can also result from cirrhosis and hyperparathyroidism (PhD Rn & Facs, 2021).
AST	**13-39 U/L**	**56 U/L**	**19 U/L**	High AST levels may indicate hepatocellular disease, injury, or inflammation (PhD Rn & Facs, 2021). This patient
ALT	**7-52 U/L**	**24 U/L**	**12 U/L**	
Amylase	**23-85 U/L**	**N/A**	**N/A**	
Lipase	**0-160 U/L**	**N/A**	**N/A**	
Lactic Acid	**0.5-2.0 mmol/L**	**0.9 mmol/L**	**N/A**	

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**	**N/A**	**N/A**	
PT	**10.1-13.1 seconds**	**N/A**	**N/A**	
PTT	**25-36**	**N/A**	**34 seconds**	

	Seconds			
D-Dimer	< or = 250 ng/mL	N/A	N/A	
BNP	0-100 pg/mL	<mark>640 pg/mL</mark>	<mark>464 pg/mL</mark>	This level indicates a suggestion of mild heart failure (PhD Rn & Facs, 2021).
HDL	>40 mg/dL	47 mg/dL	N/A	
LDL	< 130 mg/dL	87 mg/dL	N/A	
Cholesterol	< 200 mg/dL	147 mg/dL	N/A	
Triglycerides	<150 mg/dL	67 mg/dL	N/A	
Hgb A1c	4-5.6 mmol/ L *Non-diabetic*	N/A	N/A	
TSH	0.270-4.200 MIU/L	0.643 MIU/L	N/A	

Urinalysis <mark>Highlight All Abnormal Labs</mark>—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-dark yellow, clear-hazy**	N/A	N/A	
pH	**4.5-8**	N/A	N/A	
Specific Gravity	**1.005-1.035**	N/A	N/A	
Glucose	**Negative**	N/A	N/A	
Protein	**Negative**	N/A	N/A	
Ketones	**Negative**	N/A	N/A	
WBC	**Negative**	N/A	N/A	
RBC	**Negative**	N/A	N/A	
Leukoesterase	**Negative**	N/A	N/A	

Cultures <mark>Highlight All Abnormal Labs</mark>**—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	
Blood Culture	Negative	N/A	N/A	
Sputum Culture	Negative	N/A	N/A	
Stool Culture	Negative	N/A	N/A	

Lab Correlations Reference (1) (APA):

PhD Rn, P. K. D., & Facs, M. T. P. J. (2021). Mosby's Diagnostic and Laboratory Test Reference (Mosby's

Diagnostic & Laboratory Test Reference) (15th ed.). Mosby.

Diagnostic Imaging

All Other Diagnostic Tests (5 points):

o **CT Head or Brain W/O Contrast 9/23/22**

Indication: Patient is experiencing delirium, altered mental status

Impression: 1. Bilateral white matter hypodensities compatible with ischemic or

degenerative changes, there is cerebral and cerebella volume loss.

2. No acute stroke or evidence of hemorrhage

o **XR Chest Single View 9/23/22**

Indication: Crackles heard in lung bases and dyspnea

Impression: cardiomegaly noted, no consolidation or pneumothorax is seen

o **US Left Duplex UE Veins**

Indication: to assess for a deep vein thrombosis

Findings/Impression: No evidence of a deep vein thrombosis

o **XR Chest 2 Views 9/25/22**

Indication: Follow up on previous x-ray since crackles are heard throughout the lung bases.

Impression: Cardiac size is within normal limits, Infiltration noted in right lower lung compatible with pneumonia.

o **US Abdomen Limited Level 3 Three Organ 9/27/22**

Impression/Findings: Aorta, IVC, and portal vein are normal. Liver shows mild fatty infiltration and trace of ascites noted in the abdomen. Gallbladder is visualized. Multiple calcified gallstones noted. CBD is within normal limits. Murphy's sign is absent. Right kidney is visualized, multiple cysts noted. Largest cyst measures 4.1cm x 4.5cm.

o **XR Chest Single View 9/27/22**

Indication: follow up on previous X-ray

Impression: Borderline cardiomegaly noted. Infiltrates in the right lung base, no significant change since previous X-ray.

o **NM Parathyroid with Spect 9/27/22**

Indication: 87 year old female with MEN1 syndrome

Impression: The thyroid portion of the scan shows no cold or hot areas. Delayed scans show no abnormal increased uptake, no evidence for abnormal parathyroid uptake.

Diagnostic Test Correlation (5 points):

- The patient currently is experiencing infiltrates in her right lung bases waiting to her diagnosis of community acquired pneumonia. All other indications for testing is listed under the diagnostic test and the indication section.

Diagnostic Test Reference (1) (APA):

PhD Rn, P. K. D., & Facs, M. T. P. J. (2021). Mosby's Diagnostic and Laboratory Test Reference (Mosby's

Diagnostic & 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	Lisinopril	Atenolol	Folic acid Fulvite	Metoprolol succinate (Torprol-XL)	Potassium chloride (APO-K)
Dose	20mg	50mg	1mg	50mg	20 meq
Frequency	Daily	Twice a day	Daily	Daily	Twice a day with meals
Route	oral	oral	oral	oral	oral
Classification	Pharmacological class; Angiotension-converting enzyme (ACE) inhibitor Therapeutic class: Antihypertensive Pregnancy category; D	Pharmacological class; Beta-adrenergic blocker (Beta 1 and at high doses beta 2) Therapeutic class; Antianginal, antihypertensive Pregnancy category: D	water soluble vitamin	Pharmacological: beta1-adrenergic blocker Therapeutic: Antianginal, antihypertensive Pregnancy class: C	**Pharmacological:** Electrolyte cation **Therapeutic:** electrolyte replacement **Pregnancy class:** C
Mechanism of Action	May reduce blood pressure by inhibiting conversion of angiotensin I to angiotensin II angiotensin II is a potent vasoconstrictor that also stimulate adrenal cortex to secrete aldosterone (Jones & Bartlett, 2019). What should a	Inhibits stimulation of beta 1 receptor sites, located mainly in the heart, decreasing cardiac excitability, cardiac output, and myocardial oxygen demand. Atenolol also acts to decrease release of renin from the kidneys, aiding in reducing blood pressure. At high doses, it inhibits stimulation of beta 2 receptors in the lungs, which may cause bronchoconstriction (Jones & Bartlett,	transported into the cell to Maintain normal erythropoiesis-synthesize purine and inconvert amino acids	Inhibits stimulation of beta1 receptor sites, located mainly in the heart, resulting in decreased cardiac excitability, cardiac output, and myocardial oxygen demand. These effects help relieve angina, minimize cardiac tissue damage from a myocardial infarction, and help relieve symptoms of heart failure. Metoprolol also helps reduce blood pressure by	Acts as the major cation in intracellular fluid, activating as many enzymatic reactions essential for physiologic processes, including nerve impulse transmission and cardiac and skeletal muscle contraction. Potassium helps maintain electro-neutrality in cells by controlling the exchange of intracellular and extracellular ions.

	pro may also inhibit renal and vascular production of angiotensin II. Decreased release of aldosterone reduces sodium and water reabsorption and increases their excretion, thereby reducing blood pressure (Jones & Bartlett, 2019).	2019).		decreasing renal release of renin (Jones & Bartlett, 2019).	Potassium also helps maintain normal renal function and acid-base balance (Jones & Bartlett, 2019).
Reason Client Taking	Patient has a past medical history of hypertension.	Patient is taking to treat and manage her hypertension	Vitamin deficiency	Patient is taking to treat and manage her hypertension	Patient is taking to prevent or treat hypokalemia
Contraindications (2)	Contraindicated in patients with concurrent aliskiren use if they are diabetic or have renal failure, hereditary or idiopathic angioedema, or patients with a hypersensitivity to lisinopril or other ace inhibitors (Jones & Bartlett, 2019).	Contraindicated in patient's with sinus bradycardia. Also contraindicated in patients with cardiogenic shock, heart block greater than a first degree (Jones & Bartlett, 2019).	Previous intolerance to drug, ulcerative colitis, stomach ulcers	Contraindications include acute heart failure, cardiogenic shock; hypersensitivity to metoprolol, its components or other beta blockers, pulse less than 45 beats per minute (Jones & Bartlett, 2019).	Contraindications include acute dehydration, Addison's disease (untreated), hyperkalemia, severe hemolytic anemia (Jones & Bartlett, 2019).
Side Effects/Adverse Reactions (2)	**CNS:** fatigue, memory impairment **CV:** hypotension **HEME:** neutropenia	**CNS:** depression, disorientation, dizziness, drowsy, fatigue, fever **CV:** arrhythmias; including bradycardia	Anaphylaxis, GI disturbances	**CV:** arrhythmias, including bradycardia and AV block. **CNS:** Anxiety, confusion and CVA **HEME:** leukcytopenia	**CV:** arrhythmias, systole, bradycardia, cardiac arrest, ventricular fibrillation **Resp:** Dyspnea **Other:** hyperkalemia, anaphylaxis

		and heart block: cardiogenic shock, mitral insufficiency			
Nursing Considerations (2)	Monitor blood pressure during the first two weeks of therapy or whenever the dosage is increased as hypotension may occur (Jones & Bartlett, 2019). Monitor the patients serum potassium level as ordered because lisinopril can lead to hyperkalemia (Jones & Bartlett, 2019).	Monitor patient's vitals, stop and notify provider if the patient's develops bradycardia, hypotension, or other serious adverse reactions (Jones & Bartlett, 2019). Closely monitor the patient for signs of heart failure, expect the patient to receive a digitalis glycoside, a diuretic, or both (Jones & Bartlett, 2019).	Administer orally. Rule out pernicious anemia	Use cautiously in patient's with angina or hypertension who also have congestive heart failure because beta blockers can further depress myocardial contractility (Jones & Bartlett, 2019). Monitor vital signs if patient develops bradycardia, dosage may need to be adjusted (Jones & Bartlett, 2019).	Administer oral potassium with or immediately after meals. Monitor serum potassium levels before and during administration of IV potassium as hyperkalemia can occur (Jones & Bartlett, 2019).

Hospital Medications (5 required)

Brand/Generic	**Acetaminophen (Tylenol)**	**Ondansetron (Zofran)**	**Furosemide**	**Hydralazine**	**Losartan (Cozaar)**
Dose	650 mg	4mg	20mg	10mg	25mg
Frequency	Every 4 hours PRN	Every 6 hours PRN	Daily	Every 4 hours PRN	Daily
Route	Oral	Oral	Oral	Intravenously (IV)	Oral

Classification	Pharmacological: non-salicylate, paraminophenol derivative Therapeutic: antipyretic, non-opioid analgesic Pregnancy class: B	Pharmacological: selective serotonin (5-HT3) receptor antagonist Therapeutic: Antiemetic Pregnancy class: B	Pharmacological: loop diuretic Therapeutic: antihypertensive, diuretic Pregnancy class: C	Pharmacological: Vasodilator Therapeutic: Antihypertensive Pregnancy class: C	Pharmacological: Angiotensin II receptor blocker Therapeutic: Antihypertensive Pregnancy class: D
Mechanism of Action	Inhibits the enzyme cycloxygenase blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system. Acetaminophen also acts directly on the temperature regulating center in the hypothalamus by inhibiting synthesis of the prostaglandin E2 (Jones & Bartlett, 2019).	Blocks serotonin receptors centrally in the chemoreceptor trigger zone and peripherally at vagal nerve terminals in the intestine. This action reduces nausea and vomiting by preventing serotonin release in the small intestine (probable cause of chemotherapy and radiation-induced nausea and vomiting) and by blocking signals to the central nervous	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. Furosemide also increases the excretion of calcium, magnesium, bicarbonate, ammonium, and phosphate by reducing intracellular and extracellular fluid volume, the drug	May act in a manner that resembles organic nitrates and sodium nitoprusside, except that hydralazine is selective for arteries. It exerts a direct vasodilation effect on the vascular smooth muscles, interferes with calcium movement in vascular smooth muscle by altering cellular calcium metabolism, dilates the arteries, thus minimizing orthostatic hypertension and increases cardiac output and cerebral blood flow (Jones & Bartlett, 2019).	Blocks binding of angiotensin II to receptor sites in many tissues, including the adrenal glands and vascular smooth muscles. Angiotensin II is a potent vasoconstrictor that also stimulates the adrenal cortex to secrete aldosterone. The inhibiting effects of angiotensin II reduce blood pressure. Decrease left ventricular mass index in patients with left ventricular hypertrophy who also have hypertension. By targeting the renin-angiotensin system, a renoprotective action occurs through the lowering of the albumin excretion rate in patients with type 2 diabetes (Jones & Bartlett, 2019).

		system. Ondansetron may also bind to other serotonin receptors and to mv-opioid receptors (Jones & Bartlett, 2019).	reduces blood pressure and decreases cardiac output (Jones & Bartlett, 2019).		
Reason Client Taking	To relieve pain and treat fever	To relieve nausea	To manage hypertension	To manage hypertensio n	To treat and manage hypertensi on
Contraindicati ons (2)	Hypersensitivit y to acetaminophen or its components, severe hepatic impairment, severe active liver disease	Concomitant use of apomorphine, congenital long QT syndrome, and hypersensitiv ity to Ondansetron or its components	Anuria, hypersensitivit y to furosemide or its components (Jones & Bartlett, 2019).	Coronary artery disease, mitral valve disease, and hypersensitivit y to hydralazine or its components (Jones & Bartlett, 2019).	Concurrent aliskiren therapy (In patients with diabetes or renal impairment, GFR < 60 ml/min), hypersensitiv ity to losartan or its components (Jones & Bartlett, 2019).
Side Effects/Adverse Reactions (2)	**CV:** Hypotension **EENT:** Stridor (Parenteral form) **Other:** Hypokalemia, hypomagnese mia	**CNS:** hypotension **CV:** arrhythmias, tachycardia **RESP:** bronchospas m	**CNS:** fever, weakness **CV:** tachycardia **Other:** Hypocalcemia, hypochloremia , hypokalemia, hypomagnese mia	**CNS:** fever, headache **CV:** angina, tachycardia **GI:** nausea, vomiting **RESP:** dyspnea	**CNS:** headache, fatigue **CV:** hypotension **HEME:** thrombocytopeni a **Other:** hyperkalemia, hyponatremia
Nursing Considerations (2)	Know that before and during long term therapy including parenteral therapy , liver function tests such as AST, ALT, should be	Know that if hypokalemia or hypomagnesemi a is present, these should be corrected prior to administration	Obtain patient's weight before and periodically during treatment with furosemide to monitor fluid loss. Monitor blood	Monitor blood pressure and pulse rate regularly and weigh the patient daily during therapy.	Know that in some patient's losartan is more effective when given in two divided doses daily. Periodically monitor the patients serum potassium, to

	monitored because acetaminophen may cause hepatotoxicity. Monitor renal function in patient's on long term therapy as blood or albumin in the urine can indicate nephritis (Jones & Bartlett, 2019).	of Ondansetron. Monitor the patient closely for hypersensitivity because hypersensitivity reactions such as anaphylaxis or bronchospasm can occur (Jones & Bartlett, 2019).	pressure and hepatic and renal function as well as BUN, blood glucose, creatine, electrolyte levels, and uric acid levels as imbalances could arise (Jones & Bartlett, 2019).	Expect the provider to gradually withdraw hydralazine to avoid a rapid increase in blood pressure (Jones & Bartlett, 2019).	assess for hyperkalemia

Medications Reference (1) (APA):

Jones & Bartlett Learning. (2019). *2020 Nurse's Drug Handbook* (19th ed.). Jones & Bartlett Learning.

<div align="center">

Assessment

</div>

Physical Exam (18 points) – <mark>**HIGHLIGHT ALL PERTINENT ABNORMAL FINDINGS**</mark>

GENERAL: **Alertness: Alert** **Orientation:** orientated x 3 **Distress:** no apparent distress **Overall appearance:**	Patient is alert and orientated to place, time, and year. Patient is calm and cooperative and does not appear to be in any acute distress. Patient is well groomed.
INTEGUMENTARY: **Skin color:** **Character:** **Temperature: warm** **Turgor: 2+** **Rashes: none** **Bruises: none** **Wounds: none** **Braden Score: 20** **Drains present: Y☐ N ☒** **Type:**	Skin is normal in color, warm, and dry. Skin is free of bruises, rash, and wounds. Skin turgor is normal for age, at 2+. No drains are present. Braden score: 20; adequate nutrition
HEENT: **Head/Neck:** **Ears:** **Eyes:** **Nose:** **Teeth:**	Atraumatic head Neck is supple with no distended veins Tympanic membrane visualized and is a pearly gray Conjunctiva are clear with no drainage observed No sclera icterus or pallor PERRLA and EMOI is normal No deviated septum visualized

	Oral cavity is moist and clear, dentation is good with no signs of infection (Edema, redness).
CARDIOVASCULAR: **Heart sounds:** **S1, S2, S3, S4, murmur etc.** **Cardiac rhythm (if applicable): Normal sinus** **Peripheral Pulses: 2+ bilaterally** **Capillary refill: less than 3 seconds** **Neck Vein Distention: Y ☐ N ☒** **Edema Y ☐ N ☒** **Location of Edema: N/A**	Normal rate and rhythm, s1 and s2 present. No murmurs or gallops heard upon auscultation. No carotid bruit noted Peripheral pulses are equal strength and quality, 2+ bilaterally throughout. Capillary refill is less than three seconds on fingers and toes bilaterally. No edema is visualized or palpated on upper or lower extremities bilaterally. Homan's sign is negative.
RESPIRATORY: **Accessory muscle use: Y☐ N ☒** **Breath Sounds: Location, character**	Diminished air entry in the bilateral lungs crackles are noted throughout lung fields bilaterally however are worse in the patient's lower right lobe. No increased effort in working on breathing on room air, no accessory muscle use is noted. Patient denies painful breathing.

GASTROINTESTINAL:
Diet at home: normal
Current Diet: normal
Height: 152.4 cm
Weight: 69.9 kg
Auscultation Bowel sounds: normoactive
Last BM: 9/29/22
Palpation: Pain, Mass etc.:
Inspection:
   Distention: non-distended
   Incisions: none
   Scars: none
   Drains: none
   Wounds: none
Ostomy: Y ☐   N ☒
Nasogastric: Y ☐   N ☒
   Size:
Feeding tubes/PEG tube   Y ☐   N ☒
   Type:
	Patient is tolerating a normal diet well.
	
	Bowel sounds are present in normoactive in all four quadrants.
	
	Last BM: 9/29/22
	
	Patient denies any complaints of nausea, vomiting, or diarrhea.
	
	Abdomen is soft non-distended, non-tender, and free of pain upon palpitation.

GENITOURINARY: **Color: Light yellow** **Character: clear, no foul odor** **Quantity of urine: 100ml** **Pain with urination: Y ☐ N ☒** **Dialysis: Y ☐ N ☒**	Patient voided 100 ml. Urine is clear and yellow. No dysuria, no hematuria. No increase in urgency or frequency. No foul odors noted. Patient denies any complaints of pain with

Inspection of genitals: n/a
Catheter: Y ☐   N ☒
   Type:
   Size:
	urination.

MUSCULOSKELETAL: **Neurovascular status: cognitive** **ROM: 1 assist, without difficulty** **Supportive devices: walker** **Strength:** **ADL Assistance: Y☒ N ☐** **Fall Risk: Y ☒ N☐** **Fall Score: 6** **Activity/Mobility Status:** **Independent (up ad lib) ☐ No** **Needs assistance with equipment ☐ Yes** **Needs support to stand and walk☐ Yes**	Fall risk: 6 *Age > 65, cognitive deficit, mobility weakness* Patient can ambulate with a one assist with gait belt and a walker, and can transfer with little assistance with the walker. Patient currently has a steady gait. Active range of motion was performed with the patient without difficulty. Patient needs minimal assistance in her ADLs, just needs set up for meals and a standby assist with a walker for ambulation.
NEUROLOGICAL: **MAEW: Y ☒ N☐** **PERLA: Y ☒ N☐** **Strength Equal: Y ☒ N ☐ if no -** **Legs ☐ Arms ☐ Both ☐** **Orientation: Alert and orientated x 3** **Mental Status: cognitive** **Speech: cleat** **Sensory: normal** **LOC: alert**	Patient has good judgment and thought processes are normal. Perceptive to touch, temperature, and pain. Patient is alert and orientated to person place and time. Patient experiences periodic weakness. PERRLA is normal Strengths are 3+ and equal throughout bilateral extremities No gross focal or neurological deficits.
PSYCHOSOCIAL/CULTURAL: **Coping method(s):** **Developmental level:** **Religion & what it means to pt.:** **Christian** **Personal/Family Data (Think about home environment, family structure, and available family support):**	Patient reports having a good support system consisting of her son, daughter, and other family members. Both her son and daughter are active in her care. Patient reports being a Christian and valuing her relationship with God. Patient reports a strong and loving home environment denies any home concerns, patient lives at home with her son.

Vital Signs, 2 sets (5 points) – <mark>HIGHLIGHT ALL ABNORMAL VITAL SIGNS</mark>

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
0700	70 bpm	178/80	16 breaths	97.5 F	98%

		Right arm	per min	temporal	Room Air
1100	66 bpm	141/63 Right arm	16 breaths per min	97.8 F Temporal	100% Room air

Pain Assessment, 2 sets (2 points)

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

IV Assessment (2 Points)

IV Assessment	Fluid Type/Rate or Saline Lock
Size of IV: 20 G **Location of IV:** Right antecubital **Date on IV:** 9/25/22 **Patency of IV:** non-patent **Signs of erythema, drainage, etc.:** blood around the area **IV dressing assessment:** IV observed visually removed by the patient on accident, blood around the IV site. IV catheter was hanging out on patient's arm and the site had blood around it, IV was removed the rest of the way and Site was cleaned. **Size of IV:** 22G **Location of IV:** Right anterior, distal forearm **Date on IV:** 9/25/22 **Patency of IV:** Patent, flushes with ease and no pain or resistance **Signs of erythema, drainage, etc.:** No redness or drainage observed **IV dressing assessment:** IV is clean, dry and intact.	N/A; No fluids are attached at this time.

Intake and Output (2 points)

Intake (in mL)	Output (in mL)
240 ml juice	200ml urine

Nursing Care

Summary of Care (2 points)

      Overview of care: patient was admitted for observation due to changes in her mental status and due to infiltrates seen in her lung base leading to a diagnosis of pneumonia.

      Procedures/testing done: On admission, a CBC and CMP were analyzed as well as hepatic function. Prior to admission the patient received A CT of the head or brain without contrast due the patients increased delirium. The patient also obtained a an x-ray of the chest single view du to crackles being heard in the lung bases as well as an ultrasound left duplex of the upper extremity veins to assess for a deep vein thrombosis prior to their admission. Upon admission further testing such as a repeat chest x-ray two views was obtained on 9/25/22 and it was noted that there is infiltration in the right lower lung base which led to a diagnosis of pneumonia. The doctor followed up on the chest X-ray obtained on 9/25/22 with a repeat X-ray on 9/27/22 in which it was noted that there was no significant change in the infiltration and that borderline cardiomegaly was present. The provider also ordered an ultrasound of the abdomen on 9/27/22 , that shown mild fatty infiltration in the liver and a trace of ascites, as well as the

presence of multiple calcified gallstones in the gallbladder, and cysts in the kidneys. The

provider also chose to obtain a NM Parathyroid with speculation due to the patient having MEN1

syndrome, multiple endocrine neoplasia. The scan showed no abnormalities.

No further testing is ordered at this time or has been obtained during this shift.

Complaints/Issues: N/A; Patient voices no complaints or issues.

Vital signs (stable/unstable): Vital signs are currently stable.

Tolerating diet, activity, etc.: patient is tolerating a normal diet and activity without any

complaints.

Physician notifications: N/A; no physician notifications.

Future plans for client: Patient will discharge home with her son upon her discharge,

with a plan to follow up with her primary care provider.

Discharge Planning (2 points);

Discharge location: Patient when discharged as of right now is anticipated to return

home where she lives with her son.

Home health needs (if applicable): N/A; none

Equipment needs (if applicable): N/A; none

Follow up plan: Follow up with her primary care for a brighter in at least one week to

evaluate her blood pressure medication's and condition

Education needs: N/A; None at this time

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. **Ineffective airway clearance related to decreased energy as evidenced by cough and infiltrates seen in right lung base on X-ray**	**Patient has infiltrates in her right lung base but has crackles throughout bilateral lungs which can lead to dyspnea and also has a productive cough.**	**1. Assess the rate, rhythm, and depth of respirations, chest movement, and use of accessory muscles.** **2. Auscultate the lung fields, noting areas of decreased or absent airflow and adventitious breath sounds such as crackles and wheezes.**	**1. The patient will display and maintain a patent airway with breath sounds clearing; absence of dyspnea and cyanosis.**	**The patient breath sounds were assessed periodically throughout the shift, crackles still noted throughout bilateral lung bases.** **Respirations were assessed with the patient's vitals, patient is currently at 16 breaths per minute with equal chest rise and fall and no use of accessory muscles.**
2. **Impaired gas exchange related to altered oxygen carrying capacity of the blood and release at the cellular level as evidenced by disorientation and changes**	**Patient has a diagnosis of pneumonia and is experiencing changes in her mental status that lead her to come to the hospital to be seen.**	**1. Monitor the patient's pulse oximetry readings** **2. Monitor the patient vitals every 2 to 4 hours or as indicated by the patient's condition,**	**1. Patient will maintain optimal gas exchange and patient will participate in actions to maximize their oxygenation.**	**The patient's O2 was stable at a rate of 100% on room air at the last vital check at 1100.** **The patient vitals such as blood pressure were taken every four hours per facility policy and monitored for**

in mentation		report any significant findings to the provider.		any abnormalities, no abnormalities present at this time.
3. Deficient Knowledge related to unfamiliarity with the disease process as evidenced by questions being asked to the health care team	Patient asked questions such as why we need to auscultate her long fields and what each medication is for and how they relate to her diagnosis.	1. Provide the patient with information about the disease process in written and verbal forms 2. Teach the patient about how to identify signs and symptoms requiring notification of the health care provider such as increased dyspnea, changes in mental status, fever, chest pain, prolonged fatigue, and chills.	1. Patient will verbalize understanding of the therapeutic regimen and understanding of her condition and disease process.	Patient is attentive and verbalizes understanding throughout the provided teachings about her medication's and her diagnosis of pneumonia.

Other References (APA):

Swearingen, P.L., & Wright, J. (2018). *All-in-One Nursing Care Planning Resource: Medical-Surgical, Pediatric, Maternity, and Psychiatric-Mental Health* (5th ed.). Mosby.

Concept Map (20 Points) : ON NEXT PAGE

Subjective Data

Patient and her son state that she has some increased confusion, cough, and weakness that started today, 9/23/22, and they are concerned so they immediately came to the hospital.

Nursing Diagnosis/Outcomes

1. Ineffective airway clearance related to decreased energy as evidenced by cough and infiltrates seen in the right lung base on patients x-ray.
2. Impaired gas exchange related to altered oxygen carrying capacity of the blood and release at the cellular level as evidenced by disorientation and changes in mentation.
3. Deficient knowledge related to unfamiliarity with the disease process as evidenced by the patient asking questions to the healthcare team.

Objective Data

Patient's vital signs are stable;
BP: 141/63
Pulse: 66 bpm
Respirations: 16
Temperature: 97.8 temporal
Oxygen: 100% Room air

Infiltrates seen in chest x-ray on 9/25/22 with no significant changes seen in the repeat x-ray on 9/27/22

Client Information

87-year-old African American female with a past medical history of Hypertension, hyperlipidemia, memory loss, post herpetic neuralgia, and MEN1 syndrome presents to the emergency room after experiencing increased confusion or altered mental status, weakness, and a productive cough. Patient is being admitted with a diagnosis of community acquired pneumonia.

Nursing Interventions

- Assess the rate, rhythm, and depth of respirations, chest movement, and use of accessory muscles.
- Auscultate the lung fields, noting areas of decreased or absent airflow and adventitious breath sounds such as crackles and wheezes.
- Monitor the patient's pulse oximetry reading's.
- Monitor the patient vitals every 2 to 4 hours or as indicated by the patient's condition, report any significant findings to the provider.
- Provide a patient with information about the disease process in written and verbal forms.
- Teach the patient about how to identify signs and symptoms that require notification of the healthcare providers such as increased dyspnea, changes in mental status, fever, chest pain, prolonged fatigue, and chills.