

**Medications**

Doxycycline hyclate (vibramcin) 100 mg in sodium chloride 0.9% 100 mL IVPB  
 Pharmacological class: Tetracycline (NDH, 2023).  
 Therapeutic class: Antibiotic (NDH, 2023).  
 Key Nursing Assessment: Assess for signs of depression (NDH, 2023).  
 Enoxaparin (LOVENOX) injection 40 mg every 24 hours  
 Pharmacological class: Low-molecular weight heparin (NDH, 2023)  
 Therapeutic class: Anticoagulant (NDH, 2023)  
 Key nursing assessment: Watch for cough, fever, and rapid breathing (NDH, 2023)  
 guaifENesin (MUSINEX) SR tablet 600 mg oral 2x daily  
 Pharmacological class: Expectorant (Puckey, 2022)  
 Therapeutic class: Expectorant (Puckey, 2022)  
 Key Nursing Assessment: Assess the quantity and quality of sputum (Puckey, 2022)  
 piperacillin-tazobactam (ZOSYN) 100 mL IVPB 4.5 g in sodium chloride 0.9% every 8 hours  
 Pharmacological class: beta-lactamase inhibitor (NDH, 2023)  
 Therapeutic class: beta-lactamase inhibitor (NDH, 2023)  
 Key Nursing Assessment: Watch for seizures (NDH, 2023)

**Demographic Data**

**Date of Admission: 09/23/2023**  
**Admission Diagnosis/Chief Complaint: Shortness of breath**  
**Age: 72**  
**Gender: Male**  
**Race/Ethnicity: African American**  
**Allergies: No known allergies**  
**Code Status: Full code**  
**Height in cm: 180.3 cm**  
**Weight in kg: 97.5 kg**  
**Psychosocial Developmental Stage: Integrity vs. Despair**  
**Cognitive Developmental Stage: Formal Operational Stage**  
**Braden Score: 23**  
**Morse Fall Score: 23**  
**Infection Control Precautions: N/a**

**Pathophysiology**

**Disease process:** "Pneumonia is an infection of the lungs that may be caused by bacteria, viruses, or fungi. The infection causes the lungs' air sacs (alveoli) to become inflamed and fill up with fluid or pus. That can make it hard for the oxygen you breathe in to get into your bloodstream (American Lung Association, 2022)."  
**S/S of disease:** "The symptoms of pneumonia can range from mild to severe, and include cough, fever, chills, and trouble breathing (American Lung Association, 2022)." The patient presented with shortness of breath and coughing.  
**Method of Diagnosis:** The patient's pulse ox and covid/19 flu/pneumonia vaccine screen were taken to diagnose this disease. The patient also had a chest X-Ray to diagnose this condition. The chest X-Ray for this patient found that infiltration is noted in RUL secondary to pneumonia. Generally, pneumonia can be diagnosed through a chest X-Ray and CBC which reveals if the body is fighting an infection.  
**Treatment of disease:** The patient received medications to treat his pneumonia. The medications included Doxycycline hyclate (vibramcin) 100 mg in sodium chloride 0.9% 100 mL IVPB, Enoxaparin (LOVENOX) injection 40 mg every 24 hours, guaifENesin (MUSINEX) SR tablet 600 mg oral 2x daily, piperacillin-tazobactam (ZOSYN) 100 mL IVPB 4.5 g in sodium chloride 0.9% every 8 hours, and aerosol nebulizer. Pneumonia can generally be treated by medications such as NSAIDS, staying hydrated, avoiding smoking, and resting (American Lung Association, 2023).

**Lab Values/Diagnostics**

Sodium 135 (136-145 mmol/L) Sodium could be low due to pneumonia in the patient (Martin, 2023).  
 Chloride 109 (98 - 107 mmol/L) Chloride could be low due to pneumonia.  
 CO2, Venous 20 (22-30 mmol/L) CO2 could be low due to shortness of breath.  
 Hemoglobin 12.8 (13 - 16.5 g/dL) Hemoglobin could be low due to pneumonia.  
 MCV 81.6 (82.0 - 96.0 FL) MCV could be low due to pneumonia (Martin, 2023).  
 MPV 7.4 (8.0 - 12.6 FL) MPV could be low due to pneumonia (Martin, 2023).  
 Absolute neutrophils 5.80 (1.40 - 5.30 100 mcL) Absolute Neutrophils could be low due to infection (Martin, 2023).  
 Chest X-RAY impression - cardiac size is within normal limits. Infiltration is noted in RUL secondary to pneumonia. This can be due to shortness of breath.

**Admission History**

The patient is a 72-year-old African American male who arrived at OSF SHMC and reported to the ER with characteristics being shortness of breath and cough. Onset of the symptoms was 9/23/2023. The patient treated with cefdinir and azithromycin but reports this did not alleviate the symptoms. The patient's respiratory system is affected by the pneumonia, specifically the right upper lobe of the lungs. The patient reports relief of symptoms as of 09/25/2023, therefore the duration of the symptoms lasted two days.

**Medical History**

**Previous Medical History: Significant COPD**  
**Prior Hospitalizations: 10/14/2020 Carpal tunnel syndrome, 9/23/2023 community acquired pneumonia right upper lobe of lung**  
**Previous Surgical History: Colonoscopy 01/05/2023, tonsillectomy**  
**Social History: Quit smoking two years ago. Smoked 0.75 packs of cigarettes per day. Never used smokeless tobacco. No alcohol or drug use.**

**Active Orders**

Diet general due to no restrictions  
 Aerosol nebulizer initial due to pneumonia  
 Aerosol nebulizer subsequent due to pneumonia  
 Oxygen therapy due to shortness of breath  
 Pulse ox spot due to shortness of breath  
 Admission weight due to medication dosages requiring weight  
 Covid-19 flu/pneumonia vaccine screen due to attempt to diagnose  
 Discharge orders reviewed by pharmacy due to prescribing medications  
 Elevate head of bed due to patient comfort  
 Insert maintain peripheral IV due to medication administration  
 Intake/output due to routine  
 Notify physician if pulses <60 or >120, if respiratory rate is <12 or >25, if temperature is >105, if U/O <240 in 8 hours due to evaluating treatment

**Physical Exam/Assessment**

**General:** Alert and oriented to person, place, and time, well groomed, no acute distress.

**Integument:** Skin color normal for ethnicity. Skin warm and dry upon palpation. No rashes, lesions, or bruising. Normal quantity, distribution, and texture of hair. Nails without clubbing or cyanosis. Skin turgor normal mobility. Capillary refill less than 3 seconds fingers and toes bilaterally.

**HEENT:** Head and neck are symmetrical, and trachea is midline. Thyroid is nonpalpable w/ no nodules or lesions present. Sclera is white, conjunctiva is pink, eyelids are moist and pink without lesions, all bilaterally. No visible drainage present. PERRLA is intact bilaterally, red light reflex present, and EOMs are intact, Nasal septum is midline w/ no visible nodules or bleeding. Uvula is midline and soft palate rises and falls symmetrically. Hard palate is intact and oral mucosa is moist and pink with no exudate.

**Cardiovascular:** Clear S1 and S2 without murmurs gallops or rubs. PMI palpable at the 5<sup>th</sup> intercostal space at MCL. Normal rate and rhythm.

**Respiratory:** Normal rate and pattern of respirations, respirations symmetrical and non-labored, lung sounds clear throughout anterior/posterior bilaterally, no wheezes, crackles, or rhonchi noted.

**Genitourinary:** Normal findings; no pain or changes in flow and frequency noted.

**Gastrointestinal:** Bowel sounds are active and there are a normal number of clicks and gurgles, abdomen is soft and tender with no pain noted upon palpation. No bruising, lesions, or rashes noted. Patient is currently on a general diet.

**Musculoskeletal:** All extremities have full range of motion (ROM). Hand grips and pedal pushes and pulls demonstrate normal and equal strength. Balanced and smooth gait.

**Neurological:** Patient alert and oriented to person, place, time. PEERLA. Deep tendon reflexes all locations 2+ bilaterally. Normal speech and cognition.

**Most recent VS (include date/time and highlight if abnormal):** Pain – 0/10 on Numeric pain scale, Respiration Rate – 19, Pulse – 75, Temperature – 97.5, Blood Pressure 132/65, O2 – 96

<p align="center"><b>Nursing Diagnosis 1</b></p> <p>Ineffective airway clearance related to infiltration as evidenced by patient had infiltration noted in his right upper lobe.</p>	<p align="center"><b>Nursing Diagnosis 2</b></p> <p>Risk for vascular trauma related to irritation from IV and antibiotics as evidenced by doxycycline hyclate (vibramcin) 100 mg in sodium chloride 0.9% 100 mL IVPB and piperacillin-tazobactam (ZOSYN) 100 mL IVPB 4.5 g in sodium chloride 0.9% every 8 hours.</p>	<p align="center"><b>Nursing Diagnosis 3</b></p> <p>Risk for recurrent pneumonia related to history of smoking as evidenced by shortness of breath and is currently being treated for pneumonia.</p>
<p align="center"><b>Rationale</b></p> <p>Chest x-ray shows infiltration in right upper lobe which can inhibit effective gas exchange.</p>	<p align="center"><b>Rationale</b></p> <p>Patient has IV medications doxycycline hyclate and piperacillin-tazobactam. Administering an IV for antibiotics puts the patient at risk of IV irritation.</p>	<p align="center"><b>Rationale</b></p> <p>With the patient's history of smoking and current pneumonia diagnosis, the patient is at an elevated risk for recurrent pneumonia.</p>
<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> administer guaifenesin (MUSINEX) SR tablet 600 mg oral 2x daily  <b>Intervention 2:</b> Provide oxygen therapy</p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> administer piperacillin-tazobactam (ZOSYN) 100 mL IVPB 4.5 g in sodium chloride 0.9% every 8 hours  <b>Intervention 2:</b> Monitor Iv insertion site</p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1:</b> Examine chest x-ray  <b>Intervention 2:</b> Educate the patient on risk factors for pneumonia</p>
<p align="center"><b>Evaluation of Interventions</b></p> <p>Interventions were successful. The patient's shortness of breath subsided (Phelps, 2021).</p>	<p align="center"><b>Evaluation of Interventions</b></p> <p>The interventions were successful. The patient did not experience irritation from IV and antibiotics (Phelps, 2021).</p>	<p align="center"><b>Evaluation of Interventions</b></p> <p>The interventions were successful. The patient understands the risk factors for recurrent pneumonia (Phelps, 2021).</p>

**References (3) (APA):**

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<https://nurseslabs.com/normal-lab-values-nclex-nursing/>

Phelps, L. (2021). *Nursing diagnosis reference manual* (12<sup>th</sup> ed.). Wolters Kluwer

Puckey, M. (2022, May 16). *Guaifenesin*. Drugs.com. <https://www.drugs.com/guaifenesin.html>