

**Medications**

- Atorvastatin:** 20mg tab daily
- Budesonide-formoterol fumarate:** 2 puff inhalation 2x daily
- Tiotropium:** 2 puff inhalations daily
- Heparin:** inject 5,000 units every 8hrs.
- Insulin glargine:** 50 units nightly
- Insulin lispro:** 10 units 3x daily w/ meals
- Levofloxacin:** 750mg every 48hrs.
- Levothyroxine:** 175mg every morning before breakfast
- Losartan:** 50mg oral daily
- Pramipexole:** 0.25mg oral nightly
- Prednisone:** 40mg oral daily w/ breakfast

\*continued on page 2

**Demographic Data**

**Date of Admission:** 8/25/23  
**Admission Diagnosis/Chief Complaint:** Pneumonia vs. Pleural effusion  
**Age:** 74  
**Gender:** Female  
**Race/Ethnicity:** White  
**Allergies:** Lisinopril; cough  
**Code Status:** Full  
**Height in cm:** 157.5 cm  
**Weight in kg:** 73.9 kg  
**Psychosocial Developmental Stage:** Integrity vs. Despair  
**Cognitive Developmental Stage:** Formal operational  
**Braden Score:** 20  
**Morse Fall Score:** 73  
**Infection Control Precautions:** None

**Pathophysiology**

**Disease process:** A pleural infection is typically associated with harmful bacteria such as *S. pneumoniae*, *S. pyogenes* and *Staphylococcus aureus* (Jany & Welte, 2019). The bacteria buildup causes a pleural effusion decrease and lactic dehydrogenase elevation (Jany & Welte, 2019). This causes the lung's fibrous tissue to thicken and prevent the lung from full expansion (Jany & Welte, 2019). Infected pleural fluid enters the pleural cavity and inhibits the space that the lung can no longer utilize. Subsequently this causes restrictive respiratory issues, pain, dry cough, chest tightness, shortness of breath, and an inability to lay flat and exercise (Jany & Welte, 2019).

**S/S of disease:** Chest pain, cough, fever, chills, hiccups, rapid breathing, shortness of breath, and sometimes there are no symptoms (Penn Medicine, 2022). The patient was presented with chest pain, cough, SOB, inability to lay flat, and rapid breathing.

**Method of Diagnosis:** Pneumonia and pleural effusion have several common signs and symptoms. The patient was diagnosed with pneumonia upon admission. A chest x-ray was performed and exhibited fluid between the lung and chest wall (pleural effusion) versus infection inside the lung, which indicates pneumonia. Pneumonia can be a causative agent for pleural effusion, so there is a possibility the patient had both (Jany & Welte, 2019). (The patient lost several teeth two months ago, and the pulmonologist suspected the bacteria from that accident could have caused the pneumonia that led to pleural infusion).

**Treatment of disease:** Thoracentesis is a minimally invasive procedure used to treat pleural effusion (Jany & Welte, 2019). Thoracentesis removes fluid from the chest cavity by the insertion of a small tube and needle.

**Lab Values/Diagnostics**

- Chloride:** 112 mmol/L (98-107) due to anemia (Martin, 2023).
- Glucose:** 328 mg/dL (70-99) due to steroid treatments (Martin, 2023)
- RBC:** 3.75 10(6)/mCL (3.80-5.30) due to anemia (Martin, 2023).
- HGB:** 11.7 g/dL (12.0-15.8) due to anemia (Martin, 2023).
- Hematocrit:** 35.3% (36.0-47) due to COPD (Martin, 2023).
- Platelet Count:** 137 10(3)/mCL (140-440) due to anemia or possible intravascular coagulation (Martin, 2023).
- RDW:** 15.7% (11.8-15.5) due to anemia (Martin, 2023).
- MPV:** 8.1 fL (9.7-12.4) due to anemia (Martin, 2023).
- CT chest w/o contrast:**
  - Consolidated infiltrates in the inf RLL (NDH, 2023)
  - Pleural fluid significantly increased since 7/6/23(NDH, 2023)
  - Moderate pleural effusion & partially loculated (NDH, 2023)
  - Calcified right hilar lymph nodes (NDH, 2023)
  - Thoracic aortic & coronary artery calcifications (NDH, 2023)

**Admission History**

The patient is a 74 year-old woman who states trouble breathing for the past two months. She states her chest feels tight and has gotten significantly worse over the past two days. She describes her chest to have an aching, tight sensation that results in her gasping for air. Her aching chest worsens when she's moving around or laying down, and is somewhat relieved when she is sitting upright. The patient has taken cough drops and her inhaler to relieve symptoms. She has also sought out her pulmonologist, but the antibiotics she was prescribed for pneumonia were making her feel worse.

**Medical History**

- Previous Medical History:**  
Hypertension, diabetes mellitus, thyroid condition, arthritis, hemoptysis, history of tobacco abuse, gastrointestinal hemorrhage w/ melena, anemia, HTN (hypertension) benign, acquired hypothyroidism, SOB (shortness of breath), allergic rhinitis, esophageal varices, COPD, secondary esophageal varices w/ bleeding, acute cystitis w/ hematuria, basal cell carcinoma, recurrent UTI, and age-related nuclear cataract L+ R
- Prior Hospitalizations:**
- 7/17/23: History of colon polyps
  - 6/17/23: Right ear pain
  - 5/29/23: Sigmoid diverticulitis
  - 2/09/23: Syncope
- Previous Surgical History:**  
Hysterectomy, gallbladder, ovarian cyst removal, bronchoscopy, upper gastrointestinal endoscopy, EGD w/ banding, colonoscopy w/ polypectomy, colonoscopy, cataract removal w/ implant L + R, and colonoscopy
- Social History:**
- Light smoker; 0.25 packs a day for 40 years (cigarettes)
  - No alcohol use
  - No current drug use

**Active Orders**

- Diet cardiac:** Due to hypertension
- IP consult to telepulmonary:** Evaluate right pulmonary infiltrates (NDH, 2023).
- Culture, resp, lower:** Sputum sample to identify potential bacteria
- Aerosol nebulizer:** To assist with respiratory symptoms
- MDI Treatment:** Treat asthma and COPD
- Blood sugar:** Continuous monitoring of high blood sugar levels
- Insert/ maintain IV:** Continuous medications
- Notify physician:** Hypoglycemia s/s (NDH, 2023)
- Perform POC blood glucose:** For convenience of monitoring blood sugar levels
- Post hypoglycemia treatment:** To monitor the effectiveness of treatment

**Atorvastatin:** 20mg tab daily in order to lower the patient's risk for cardiovascular events (Nurse's Drug Handbook, 2023).

Pharmacological class: HMG-CoA reductase inhibitor (NDH, 2023).

Therapeutic class: Antihyperlipidemic (NDH, 2023).

Key nursing assessment: Monitor diabetic patient's blood because atorvastatin therapy can affect blood glucose control (NDH, 2023).

**Budesonide-formoterol fumarate:** 2 puff inhalation 2x daily due to seasonal or perennial allergic rhinitis (NDH, 2023).

Pharmacological class: Corticosteroid (NDH, 2023).

Therapeutic class: Antiasthmatic, anti-inflammatory (NDH, 2023).

Key nursing assessment: Monitor patients with conditions such as diabetes and hypertension because they may have increased adverse effects (NDH, 2023).

**Tiotropium:** 2 puff inhalations daily to treat the patient's asthma (NDH, 2023).

Pharmacological class: Anticholinergic (NDH, 2023).

Therapeutic class: Bronchodilator (NDH, 2023).

Key nursing assessment: Monitor the patient's pulmonary function to evaluate the tiotropium's effectiveness (NDH, 2023).

**Heparin:** inject 5,000 units every 8hrs. to prevent intravascular coagulation (NDH, 2023).

Pharmacological class: Anticoagulant (NDH, 2023).

Therapeutic class: Anticoagulant (NDH, 2023).

Key nursing assessment: Use cautiously with patients over 60, have an increased risk with cardiovascular conditions (hypertension), gastrointestinal conditions, and with a history of allergies or asthma (NDH, 2023).

**Insulin glargine:** 50 units nightly: Long-acting insulin to treat blood sugar levels throughout the night (NDH, 2023).

Pharmacological class: Human insulin (NDH, 2023).

Therapeutic class: Antidiabetic (NDH, 2023).

Key nursing assessment: Monitor for s&s of hypoglycemia (NDH, 2023).

**Insulin lispro:** 10 units 3x daily w/ meals: Rapid-acting insulin to treat blood sugar levels (NDH, 2023).

Pharmacological class: Human insulin (NDH, 2023).

Therapeutic class: Antidiabetic (NDH, 2023).

Key nursing assessment: Administer insulin before meals to get an accurate blood sugar reading (NDH, 2023).

**Levofloxacin:** 750mg every 48hrs. to treat pneumonia (NDH, 2023).

Pharmacological class: Fluoroquinolone (NDH, 2023).

Therapeutic class: Antibiotic (NDH, 2023).

Key nursing assessment: Monitor blood glucose levels in diabetic patients who use insulin because levofloxacin may alter their blood glucose levels (NDH, 2023).

**Levothyroxine:** 175mg every morning before breakfast to treat the patient's thyroid condition (NDH, 2023).

Pharmacological class: Synthetic thyroxine (NDH, 2023).

Therapeutic class: Thyroid hormone replacement (NDH, 2023).

Key nursing assessment: Use cautiously when treating an elderly patient with cardiovascular disease because overtreatment of levothyroxine can lead to angina or arrhythmias (NDH, 2023).

**Losartan:** 50mg oral daily to manage the patient's hypertension (NDH, 2023).

Pharmacological class: Angiotensin II receptor blocker (ARB) (NDH, 2023).

Therapeutic class: Antihypertensive (NDH, 2023).

Key nursing assessment: Monitor the patient's blood pressure (NDH, 2023).

**Pramipexole:** 0.25mg oral nightly is used to treat Parkinson's disease (NDH, 2023).

Pharmacological class: Nonergoline dopamine agonist (NDH, 2023).

Therapeutic class: Antiparkinsonian (NDH, 2023).

Key nursing assessment: Use cautiously in patients with retinal problems (NDH, 2023).

**Prednisone (deltasone):** 40mg oral daily w/ breakfast to treat the patient's inflammatory diseases such as asthma, allergies, and arthritis (NDH, 2023).

Pharmacological class: Glucocorticoid (NDH, 2023).

Therapeutic class: Immunosuppressant (NDH, 2023).

Key nursing assessment: Monitor the patient for hypertension adverse effects (NDH, 2023).

## Physical Exam/Assessment

**General:** A&Ox4, well groomed, and no acute distress.

**Integument:** Skin warm and dry upon palpation. No rashes or lesions noted. Bruise present on right lower arm. Normal quantity, distribution, and hair texture. 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, trachea is midline without deviation. Thyroid is non palpable, no nodules present. Bilateral carotid pulses are palpable and 2+. No lymphadenopathy noted. Bilateral sclera white, bilateral conjunctiva pink, no visible drainage present. Bilateral lids are moist and pink without lesions. PERRLA bilaterally, red light reflex present bilaterally, and EOMS intact. Bilateral auricles no visible or palpable lesions. Septum is midline, no visible bleeding, bilateral frontal sinuses are nontender to palpation. Posterior pharynx and tonsils are moist and pink bilaterally without exudate noted. Tonsils 2+ bilaterally. Uvula is midline; soft palate rises and falls symmetrically. Hard palate intact. **Patient missing three frontal teeth** (The patient lost several teeth two months ago, and the pulmonologist suspected the bacteria from that accident could have caused the pneumonia that led to pleural infusion). Oral mucosa overall is moist and pink.

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

**Respiratory:** **Respiration pattern is irregular and lung sounds are diminished throughout anterior/ posterior bilaterally** (Due to pleural effusion). No wheezes, crackles, or rhonchi noted. Respirations are non-labored, but **not symmetrical. Lung aeration in the left lung is greater than the right** (Due to pleural effusion).

**Genitourinary:** No urinary pain frequency change noted. Last urination was yellow and clear. No catheter present.

**Gastrointestinal:** Abdomen is soft, non-tender, or masses noted upon palpation of all four quadrants. Bowel sounds are normative in all four quadrants. No CVA tenderness noted bilaterally. No wounds, rashes, or lesions noted. Patient is on a **cardiac diet** (due to hypertension).

**Musculoskeletal:** Hand grips, pedal pushes and pulls demonstrate normal and equal strength 5+. (**Gait and ROM not tested due to ambulation exhausting patient's breathing**). All extremities pink, warm, dry, and symmetrical. Pules 2+ throughout bilaterally. Capillary refill less than 3 seconds fingers and toes bilaterally. No edema palpated in all extremities. Epitrochlear lymph nodes non-palpable bilaterally. Homan's sign and deep tendon reflexes N/A.

**Neurological:** Patient A&Ox4, normal cognition, and clear speech. Cranial nerves assessment N/A.

**Most recent VS (include date/time and highlight if abnormal):** 8/28/23 @ 4pm; BP: 110/62; Temp: 97.6°F, HR: 83bpm; SpO2: 95% room air

**Pain and pain scale used:** **Pain rated 5 out of 10** according to the numeric rating scale (NRS) (due to chest tightness from pleural effusion)

<p align="center"><b>Nursing Diagnosis 1</b></p> <p align="center"><b>At risk for unstable glucose level as evidence by abnormal blood sugar level 300&lt; by the patients POC glucose reading (Phelps, 2020).</b></p>	<p align="center"><b>Nursing Diagnosis 2</b></p> <p align="center"><b>Impaired dentition related to difficulty accessing dental care as evidence by absence of several teeth (Phelps, 2020).</b></p>	<p align="center"><b>Nursing Diagnosis 3</b></p> <p align="center"><b>Ineffective airway clearance related to excessive fluid in lungs as evidence by diminished lungs sounds (Phelps, 2020).</b></p>
<p align="center"><b>Rationale</b></p> <p align="center"><b>Patient has had several 300&lt; blood sugar readings upon admission.</b></p>	<p align="center"><b>Rationale</b></p> <p align="center"><b>Patient is extremely self-conscious about her missing teeth and mentions she cannot wait to get her dentures on multiple occasions.</b></p>	<p align="center"><b>Rationale</b></p> <p align="center"><b>Patient gets winded by simple mobilization</b></p>
<p align="center"><b>Interventions</b></p> <p><b>Intervention 1: Diabetic diet</b>  <b>Intervention 2: Assess patient's knowledge on self-management of hypoglycemia (Phelps, 2020).</b></p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1: Collaborate on the texture of the meal she should order</b>  <b>Intervention 2: Ask the patient if she has a scheduled or projected visit with her dentist (Phelps, 2020).</b></p>	<p align="center"><b>Interventions</b></p> <p><b>Intervention 1: Assess respiratory status according to established standards (Phelps, 2020).</b>  <b>Intervention 2: Encourage adequate water intake to ensure optimal hydration and loosening of secretions (Phelps, 2020).</b></p>
<p align="center"><b>Evaluation of Interventions</b></p> <p><b>The patient ordered a meal that would not spike her blood sugar significantly. The patient states she monitor's her blood sugar on a consistent schedule at home.</b></p>	<p align="center"><b>Evaluation of Interventions</b></p> <p><b>The patient ordered soft textured foods that would not hurt her gums. The patient states she is getting dentures within the next two months.</b></p>	<p align="center"><b>Evaluation of Interventions</b></p> <p><b>The patient's SpO2 vitals were assessed routinely and were at a normal level. The patient was provided 8oz cups of water throughout shift.</b></p>

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

Jany, B., & Welte, T. (2019). *Pleural effusion in adults—Etiology, diagnosis, and treatment*. National Library of Medicine *116*(21), 377-386. <https://10.3238/arztebl.2019.0377>. PMID: 31315808; PMCID:PMC6647819

Martin, P. (2023). *Normal laboratory values for nurses: A guide for nurses*. Nurses Labs. <https://nurseslabs.com/normal-lab-values-nclex-nursing/>

*Nurse's drug handbook*. (2023). Burlington, MA: Jones & Bartlett Learning.

Penn Medicine. (2022, July 31). *Pleural effusion—Symptoms and causes*. *Penn Medicine*. <https://www.pennmedicine.org/for-patients-and-visitors/patient-information/conditions-treated-a-to-z/pleural-effusion>

Phelps, L. (2020). *Nursing diagnosis reference manual* (11<sup>th</sup> ed.). Lippincott Williams & Wilkins.