

Medications	
-	Acetaminophen (Tylenol) 160 mg/5 mL oral liquid 15 mg/kg (9.5 mL) every 4 hours as needed for mild pain (rate 1-3) or a temperature 100.4° or greater <ul style="list-style-type: none"> o Pharmacologic class: Nonsalicylate (Jones & Bartlett Learning, 2023). o Therapeutic class: Antipyretic, nonopioid analgesic (Jones & Bartlett Learning, 2023). o Key nursing assessment prior: Ensure that the patient has not reached maximum daily dosage (Jones & Bartlett Learning, 2023). o Safe dose
-	Ibuprofen oral suspension 10 mg/kg (10.2 mL) every 6 hours as needed for mild pain (rate 1-3) or a temperature 100.4° or greater <ul style="list-style-type: none"> o Pharmacologic class: NSAID (Jones & Bartlett Learning, 2023). o Therapeutic class: Analgesic, anti-inflammatory, antipyretic (Jones & Bartlett Learning, 2023). o Key nursing assessment prior: Assess pain and correct dosage (Jones & Bartlett Learning, 2023). o Safe dose
-	Ceftriaxone 1000 mg in 0.9% Sodium Chloride 35 mL IVPB every 24 hours 70 mL/hr infused over 30 minutes <ul style="list-style-type: none"> o Pharmacologic class: Third-generation cephalosporin (Jones & Bartlett Learning, 2023). o Therapeutic class: Antibiotic (Jones & Bartlett Learning, 2023). o Reason: Community acquired pneumonia o Key nursing assessment prior: Allergies and patent IV (Jones & Bartlett Learning, 2023). o Safe dose
-	Azithromycin 200 mg/5 mL oral suspension 5 mg/kg (2.5 mL) daily for 4 days <ul style="list-style-type: none"> o Pharmacologic class: Macrolide (Jones & Bartlett Learning, 2023). o Therapeutic class: Antibiotic (Jones & Bartlett Learning, 2023). o Reason: Community acquired pneumonia o Key nursing assessment prior: Allergies and potassium/magnesium levels, bradycardia (Jones & Bartlett Learning, 2023). o Safe dose

Demographic Data
Admitting diagnosis: Hypoxia due to community-acquired pneumonia (“walking pneumonia”)
Age of client: 6 years old
Sex: Female
Weight in kgs: 20.3 kg
Allergies: No known allergies
Date of admission: 09/25/2024

Admission History
The patient presented to the emergency department on 09/25/2024 for a worsening cough and fever of 103.4°. The patient’s parents state she had an intermittent cough and low-grade fever for the last 5-6 days. Her fever spiked over the weekend. Both have since progressively worsened and the discomfort is constant. The patient stated, “It’s hard to breathe.” The parents state that the coughing has also caused her to vomit. The parents tried Tylenol to help lower her fever and blow-by albuterol for her cough over the weekend, but neither helped. The patient has 4 sisters who were also experiencing coughing and the mother states she suspected one of them may have had walking pneumonia. The patient’s parents have not sought treatment previously for this complaint.

Pathophysiology
Disease process: Mycoplasma pneumoniae, also known as walking pneumonia, is a bacterial infection of the lungs caused by inhaling the <i>M. pneumoniae</i> bacteria (Capriotti, 2020). The droplets enter the airway and into the lung tissue, where they adhere to the tissue, causing an inflammatory response (Capriotti, 2020). This inflammation then spreads to the lower respiratory tract and the alveoli (Capriotti, 2020). At the sites of inflammation, neutrophils phagocytize the microbes, and respiratory goblet cells are overstimulated (Capriotti, 2020). These two cause an excess of exudate and mucus (Capriotti, 2020). The alveoli attempt to open and close; however, some cannot, and this causes crackles to be heard in the lungs (Capriotti, 2020). The inflammation and exudate then begin to decrease gas exchange, causing the patient to become hypoxic (Capriotti, 2020). Walking pneumonia is a community-acquired pneumonia common in school-age children (Capriotti, 2020).
S/S of disease: Walking pneumonia symptoms initially present as a mild cough, fever, and chills and appear over the course of 1 to 3 weeks (Capriotti, 2020). In this patient, she had developed an intermittent cough and low-grade fever the past week. Dyspnea and chest pain begin to present as the infection progresses (Capriotti, 2020). The patient then became dyspneic as her coughing and fever progressively worsened. Upon assessment, the patient may be tachypneic or tachycardic, use accessory muscles, and have a low oxygen saturation (Capriotti, 2020). This patient presented with tachypnea, tachycardia, and a very low oxygen saturation level.
Method of Diagnosis: A chest X-ray is the most important diagnostic tool for diagnosing pneumonia (Capriotti, 2020). The chest X-ray will show infiltrates and consolidation (Capriotti, 2020). In this patient’s case, a chest X-ray showed bilateral peripheral and basilar infiltrates with consolidation. A CBC with differential is also done to tell whether the infection is viral or bacterial (Capriotti, 2020). A C-reactive protein lab test can also be done and will be elevated in bacterial infection (Capriotti, 2020), which this patient’s was. Blood and sputum cultures may also be done to identify the causative agent and choose the most effective antibiotics (Capriotti, 2020). This patient had a blood culture done; however, her results had not returned yet.
Treatment of disease: Antibiotic therapy and oxygenation are the main treatments for pneumonia (Capriotti, 2020). Antipyretics, anti-inflammatories, and analgesics are also needed (Capriotti, 2020). This patient received Ceftriaxone and Azithromycin, two of the antibiotics of choice for treating walking pneumonia. She was also receiving acetaminophen and ibuprofen for pain as needed or if her temperature increased. She was also placed on 2-3L of oxygen to maintain her oxygen saturation above 92%.

Assessment	
General	Appears alert and oriented x person, place, and time, well groomed, no acute distress
Integument	Skin color white/pink/appropriate for ethnicity. Skin is dry however patient has a fever, skin is hot upon palpation. No rashes, lesions, or bruising. Normal hair distribution and nails are not cyanotic. Skin turgor normal.
	Head and neck are symmetrical, trachea is midline without deviation, thyroid and lymph nodes are nonpalpable. Bilateral carotid pulses are palpable and 2+. No neck vein distention. Bilateral sclera white, bilateral cornea clear, bilateral conjunctiva pink, no visible lesions or
Relevant Lab Values/Diagnostics	Medical History
<ul style="list-style-type: none"> - Chest X-ray <ul style="list-style-type: none"> o Bilateral peripheral and basilar infiltrates with consolidation <ul style="list-style-type: none"> ▪ Chest X-rays provide images of the pulmonary and cardiac systems (Pagana et al., 2023). They can provide different information and identify various conditions (Pagana et al., 2023). In this patient's case, the chest X-ray was used to help diagnose pneumonia. In pneumonia, the X-ray will show infiltrates and consolidation in the lungs (Pagana et al., 2023). - Complete blood count with differential <ul style="list-style-type: none"> o RBC 3.72 x 10⁶/uL (Normal: 4-5.5 x 10⁶/uL) (Pagana et al., 2023). <ul style="list-style-type: none"> ▪ Slightly decreased due to anemia caused by the pneumonia (Pagana et al., 2023). o HCT 31.2% (Normal: 32-44%) (Pagana et al., 2023). <ul style="list-style-type: none"> ▪ Slightly decreased due to anemia caused by pneumonia (Pagana et al., 2023). o MPV 12.1 fL (Normal: 7.4-10.4 fL) (Pagana et al., 2023). o Absolute monocytes 0.84 x 10³/uL (Normal: 100-700/mm³) (Pagana et al., 2023). <ul style="list-style-type: none"> ▪ Increased due to inflammation (Pagana et al., 2023). o Absolute monocytes 0.84 x 10³/uL (Normal: 100-700/mm³) (Pagana et al., 2023). <ul style="list-style-type: none"> ▪ Increased due to the presence of bacterial infection (Pagana et al., 2023). - C-reactive protein 4.11 mg/dL (Normal: <1.0 mg/dL) (Pagana et al., 2023). <ul style="list-style-type: none"> o Increased due to bacterial infection (Pagana et al., 2023). 	<p>Previous Medical History: Failure to thrive, febrile seizure, atopic eczema, and speech delay</p> <p>Prior Hospitalizations: N/A</p> <p>Past Surgical History: N/A</p> <p>Social needs: N/A</p>
	Active Orders
	<ul style="list-style-type: none"> - Regular diet - Incentive spirometer every hour 1-3 times – improve breathing - Vital signs every 4 hours, temperature every 2 hours – monitoring for improvement of fever and oxygen saturation - Strict intake and output – monitor fluid intake to prevent overload - Notify provider: For all previous afebrile patients: temperature 101° or greater; heart rate, respiratory rate, and blood pressure out of normal parameters – will let the provider know that prescribed antipyretics may not be working, or the patient may be developing something else - Continuous pulse ox – ensure the patient is getting an adequate amount of oxygen; the patient had difficulty keeping it above 92% while on 2-3L of oxygen - Oxygen per respiratory protocol with humidity via nasal cannula or face mask - to keep oxygen saturation above 92%
Most recent VS (highlight if abnormal)	<p>Temperature: 102.4° F (39.1°C)</p> <p>Route: Axillary</p> <p>RR: 52</p> <p>HR: 124</p> <p>BP and MAP: 98/57 & 71</p> <p>Oxygen saturation: 93%</p> <p>Oxygen needs: On 3L oxygen through a nasal cannula</p>
Pain and Pain Scale Used	0; rFLACC

<p align="center">Nursing Diagnosis 1 Nursing Diagnosis</p> <p>Impaired gas exchange related to inflammation and fluid/mucus in the alveoli as evidenced by dyspnea and need for 2-3L of oxygen (Phelps, 2023).</p>	<p align="center">Nursing Diagnosis 2 Nursing Diagnosis</p> <p>Ineffective airway clearance related to excessive mucus or secretions in bronchi or alveoli as evidenced by crackles in the right upper lobe (Phelps, 2023).</p>	<p align="center">Nursing Diagnosis 3 Nursing Diagnosis</p> <p>Risk for hyperthermia related to pneumonia as evidenced by increases in temperature as high as 103.4 (Phelps, 2023).</p>
<p align="center">Rationale</p> <p>I chose this nursing diagnosis because it is part of the ABCs and should be the top priority when treating a patient with pneumonia.</p>	<p align="center">Rationale</p> <p>I chose this nursing diagnosis because it is one reason that the patient is having difficulty time breathing, causing her to be tachypneic.</p>	<p align="center">Rationale</p> <p>I chose this nursing diagnosis because it can cause harm to the organs if not treated promptly.</p>
<p align="center">Interventions</p> <p>Intervention 1: Administer oxygen as ordered (Phelps, 2023). Intervention 2: Position patient in semi-Fowler's or high-Fowler's (Phelps, 2023).</p>	<p align="center">Interventions</p> <p>Intervention 1: Suction secretions as needed (Phelps, 2023). Intervention 2: Encourage movement and changes in positioning (Phelps, 2023).</p>	<p align="center">Interventions</p> <p>Intervention 1: Assess temperature every 1-4 hours (Phelps, 2023). Intervention 2: Administer antipyretics as prescribed (Phelps, 2023).</p>
<p align="center">Evaluation of Interventions</p> <p>The patient was placed on 2-3L of oxygen, which helped maintain her oxygenation at 92% or higher. She was also sitting in a semi-Fowler's position on her recliner, which helped facilitate her breathing.</p>	<p align="center">Evaluation of Interventions</p> <p>Normal saline and a suction device were used in each patient's nares to help remove some of the secretions. The patient was also up and walking around the unit.</p>	<p align="center">Evaluation of Interventions</p> <p>The patient had an order placed to measure her temperature every 2 hours. This was extremely helpful because her temperature suddenly increased in the middle of the day from 98.8 to 100.4 to 103. Tylenol and ibuprofen were administered to help lower her temperature, and they were effective.</p>

		What do you expect?	What did you observe?
Erickson’s Psychosocial Developmental Stage	Industry vs inferiority (Rudd & Kocisko, 2023)	The child develops interests and pride in their accomplishments (Rudd & Kocisko, 2023). They enjoy working in groups and following rules and orders (Rudd & Kocisko, 2023).	The patient followed the directions and orders that the nurses and I gave her, such as keeping her oxygen nasal cannula on.
Piaget’s Cognitive Developmental Stage	Preoperational stage (Rudd & Kocisko, 2023)	The child applies language and uses symbols to represent objects (Rudd & Kocisko, 2023). They are oriented to the present time and have difficulty conceptualizing time (Rudd & Kocisko, 2023). They are influenced by fantasy thinking (Rudd & Kocisko, 2023).	The patient understood what I told her and the care that was happening in the present. However, she did have a speech delay and would talk in 3 to 4-word sentences that were sometimes not structurally correct.
Age-Appropriate Growth & Development Milestones	<ol style="list-style-type: none"> 1. Dresses independently (Rudd & Kocisko, 2023) 2. Ride a bike (Rudd & Kocisko, 2023) 3. Speak clearly in sentences of five or more words (Rudd & Kocisko, 2023) 		
Age-Appropriate Diversional Activities	<ol style="list-style-type: none"> 1. Riding a bike or scooter (Rudd & Kocisko, 2023) 2. Swimming (Rudd & Kocisko, 2023) 3. Reading or watching a show but having screen time for only 2 hours (Rudd & Kocisko, 2023) 		

References

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.). F.A. Davis.

Jones & Bartlett Learning. (2023). *NDH: Nurse's drug handbook*. Jones & Bartlett Learning.

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2023). *Mosby's diagnostic and laboratory test reference* (16th ed.). Elsevier

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