

### Medications

Cleocin/ clindamycin-

Pharmacological class: Lincosamide (Jones & Bartlett, 2020).

Therapeutic Class: Antibiotic (Jones & Bartlett, 2020).

The patient is taking this medication to treat pneumonia infection.

Key nursing intervention include monitoring liver enzymes and kidney enzymes for adequate function (Jones & Bartlett, 2020).

Solu-Medrol/ methylprednisolone-

Pharmacological class: Glucocorticoid (Jones & Bartlett, 2020).

Therapeutic class: Corticosteroid (Jones & Bartlett, 2020).

The patient is taking this medication to treats the pneumonia.

Key nursing interventions include monitoring blood sugar levels a thorough respiratory assessment (Jones & Bartlett, 2020).

Magnesium sulfate-

Pharmacological class: Mineral (Jones & Bartlett, 2020).

Therapeutic class: Electrolyte replacement (Jones & Bartlett, 2020).

The patient is on this medication to prevent seizure activity as the patient has a seizure disorder.

Key nursing assessments include vital signs (decrease in blood pressure, heart rate, oxygen saturation and respiratory rate) and a neurological assessment (Jones & Bartlett, 2020).

### Demographic Data

**Admitting diagnosis: Acute on chronic respiratory failure**

**Age of client: Five years-old**

**Sex: Female**

**Weight in kgs: 22.1 kilograms**

**Allergies: no known allergies**

**Date of admission: 10-9-22**

**Psychosocial Developmental Stage: Patient should be in the initiative vs guilt. Patient is in the trust vs mistrust.**

**Cognitive Development Stage: Patient should be in the preoperational stage but is in the sensorimotor stage.**

### Admission History

**The patient had three large emesis at the facility where the patient resides. The patient then had a drop in oxygen saturation to 88%. The staff was advised to send the patient to Carle for further care by ambulance.**

### Pathophysiology

Disease process: Acute and chronic respiratory failure can be a result of a malfunction in the transfer of oxygen across the alveoli, transport of oxygen to the tissues, or the removal of carbon dioxide from blood into the alveolus and then into the environment (Murat Kaynar, 2021). To classify as respiratory failure there is a reduction in ventilatory capacity or an increase in oxygen demand (or both) (Murat Kaynar, 2021). In this patient there is a reduction in the ventilatory capacity due to the pneumonia/fluid in the lungs.

S/S of disease: Hypoxemia, hypercapnia, restlessness, anxiety, confusion, seizures, coma, asterixis, tachycardia, arrhythmias, cyanosis, dyspnea, confusion, myoclonus, seizures, polycythemia, pulmonary hypertension, tachypnea, crackles, diminished lung sounds, and hypoxia (Murat Kaynar, 2021). This patient presents with tachypnea, hypoxia, and diminished lung sounds.

Method of Diagnosis: Chest radiography, arterial blood gas, CBC, and a BNP (Murat Kaynar, 2021). This patient received a chest radiography, ABG, and a CBC, BNP.

Treatment of disease: For the treatment of Acute on chronic respiratory failure the underling cause of the acute exacerbation. For this patient, the cause of the acute exacerbation is pneumonia. Treating the pneumonia and giving supplemental oxygen will treat the acute part of the acute on chronic respiratory failure. This patient has chronic respiratory failure with treatment by oxygen therapy and medications such as albuterol (Murat Kaynar, 2021).

### Relevant Lab Values/Diagnostics

Chest x-ray reveals a patchy right upper lobe airspace and opacities. This shows the pneumonia that the patient is being treated for.

Glucose: 129 mg/L (74-100 mg/L) patient is on a steroid that can increase glucose levels

WBC: 21.86  $10^3$  uL (4.27-11.4  $10^3$  uL) the patient has pneumonia resulting in an increase of WBC's.

Neutrophils: 18.46  $10^5$  uL (1.64-7.87  $10^5$  uL) The patient has pneumonia causing an increase of neutrophils.

CRP: 6.73 mg/dL (0-0.5 mg/dL) CRP elevation is due to inflammation.

Creatinine: 0.32 mg/dL (0.55-1.02 mg/dL) Creatinine is a result of impaired renal function.

BUN: 5 mg/dL (7-17 mg/dL) BUN is a result of an impaired renal function.

### Medical History

**Previous Medical History:** The patient has a past medical history of gastroesophageal reflux disease, hypoxic-ischemic encephalopathy, gastrointestinal tube, nonaccidental traumatic injury, cerebral palsy, pneumonia, retinal hemorrhage, congenital hip dysplasia, seizure disorder, and strabismus.

**Prior Hospitalizations:** respiratory failure, aspiration pneumonia, NAT, and seizures

**Past Surgical History:** cerebral spinal fluid shunt (1-16-18), hip surgery (5-21)

**Social needs:** Swann special care center, speech therapy, physical therapy, occupational therapy

### Active Orders

Bladder scan as needed to monitor renal function and urine output.

Turn every two hours to prevent bed sores from immobilization.

Continuous g-tube feeds for a balanced nutrition.

NPO due to an aspiration risk.

Seizure precaution because of a history of seizure and the magnesium sulfate.

Droplet precaution for the MRSA infection.

**Assessment**

<b>General</b>	The patient is alert and oriented times zero due to mental disabilities. The patient shows no signs of distress, and the overall appearance is appropriate for her age. The patient is calm and cooperative.
<b>Integument</b>	The patient shows signs of bilateral erythema in the inner elbows, axilla, around the g-tube, and behind the neck. The skin is warm, dry, and intact with a skin turgor of elastic.
<b>HEENT</b>	The patient has dysphagia and is NPO. The oral mucosa is dry. The ears are symmetrical with no signs of drainage present. The pupils are equal and reactive to light. PERLA and EOM intact. The nares are patent with no signs of deviated septum. The teeth show no signs of dental caries. No masses or lesions noted by the thyroid.
<b>Cardiovascular</b>	The patient's heart sounds reveal no murmurs present. S1 and S2 with normal sinus rhythm. +2 radial and pedal pulses noted bilaterally. The capillary refill less than three seconds noted in all extremities. No signs of neck vein distention.
<b>Respiratory</b>	The patient shows no signs of accessory muscle use. Anterior and posterior breath sounds auscultated clear and diminished bilaterally.
<b>Genitourinary</b>	The patient's urine is pale yellow and clear. The quantity of urine is 300 mL during shift. The patient shows no signs of no pain with urination. The client is not receiving dialysis. The genitalia are clean, dry, and intact. No catheter is present.
<b>Gastrointestinal</b>	The patient's diet at home and the current diet is nothing by mouth and pediasure with fiber through the G-tube. T patient has active bowel sounds in all four quadrants and the last bowel movement has not been noted. The client's abdomen is soft and nontender with no masses noted. No ostomy is present. G- tube is placed with erythema noted around the g-tube.
<b>Musculoskeletal</b>	The range of motion is not intact active. Passive range of motion is performed with slight resistance in the left upper extremity. The patient is immobile and is dependent on wheelchair/caregiver. The patient has strength 1/5 in all extremities. The client does need activities of daily living assistance and is a fall risk. The patient does perform purposeful and localized movement at times.
<b>Neurological</b>	The patient does have rigidity in all extremities and PERLA is intact. The strength is 1/5 in all extremities. The client is alert and oriented times zero. The client's speech is grunting at times. The patient does have a noted motor and developmental delay.
<b>Most recent VS (highlight if abnormal)</b>	<p><b>Time: 0819</b></p> <p><b>Temperature: 97.4 °F</b></p> <p><b>Route: axillary</b></p> <p><b>RR: 35 breaths per minute</b></p> <p><b>HR: 118 beats per minute</b></p> <p><b>BP and MAP: 116/67 mmHg (84)</b></p> <p><b>Oxygen saturation: 99%</b></p> <p><b>Oxygen needs: optiflow 12L at 30%</b></p>

<b>Pain and Pain Scale Used</b>	FLACC no pain zero
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<b>Nursing Diagnosis 1 Impaired gas exchange related to pneumonia as evidenced by an increase in respiratory rate (Phelps, 2020).</b>	<b>Nursing Diagnosis 2 Impaired physical mobility related to decrease in muscle control as evidenced by jerky movements (Phelps, 2020).</b>	<b>Nursing Diagnosis 3 Risk for aspiration related to enteral feeding as evidenced by continuous g-tube feedings (Phelps, 2020).</b>
<b>Rationale</b> The patient has an increased respiratory rate and required oxygen for adequate oxygen saturation.	<b>Rationale</b> The patient has jerky movements and is unable to preform active range of motion.	<b>Rationale</b> The patient has a history of aspiration pneumonia and has a continuous g-tube feeding.
<b>Interventions</b> Intervention 1: Monitor oxygen therapy as ordered (Phelps, 2020). Intervention 2: Monitor oxygen saturation continuously (Phelps, 2020).	<b>Interventions</b> Intervention 1: Preform passive range of motion (Phelps, 2020). Intervention 2: Turn the patient every two hours (Phelps, 2020).	<b>Interventions</b> Intervention 1: The patient will have the head of the bed elevated at all times (Phelps, 2020). Intervention 2: Assess the respiratory status every four hours (Phelps, 2020).
<b>Evaluation of Interventions</b> Goal met. Oxygen therapy is monitored throughout the shift. Goal met. The continuous pulse/ox is working well, and oxygen saturation is monitored frequently during shift.	<b>Evaluation of Interventions</b> Goal met. Passive range of motion was provided during shift when patient could tolerate/cooperate movement. Goal met. Patient is turned every two hours during the shift.	<b>Evaluation of Interventions</b> Goal met. The patient's head of the bed is elevated during the shift. Goal met. The patient received a respiratory assessment every four hours during shift.

**References (3):**

**Jones & Bartlett. (2020). *Nurse's drug handbook* (12th ed.). Jones & Bartlett Learning.**

**Phelps, L. L. (2020). *Sparks & Taylor's nursing diagnosis reference manual* (11th ed.). Wolters Kluwer.**

**Murat Kaynar, A. (2021, October 17). *Respiratory Failure Differential Diagnoses*. Medscape. Retrieved October 15, 2022, from <https://emedicine.medscape.com/article/167981-overview>**