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08

**Fall**

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| Screen Shot 2012-09-11 at 7.50.08 PM.png | Azusa Pacicfic University  School of Nursing  GNRS 588: Advanced nursing care for adults  Care Map # 1  *Care Map must be completed and submitted within one week of the date of care.* | Screen Shot 2012-09-11 at 7.50.08 PM.png |

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| **Student: Justine Gonzalez** |
| **Instructor: B. Richards/ M. Medema** |
| **Date of Care: Feb 4, 2015** |
| **Date of Submission: 2/18/15** |

**Admitting Data**

**Interview your patient or his/her family to obtain a complete health history. Do not just copy from the patient’s chart *unless the patient and family are not available.***

***Total 5.0 points (no point for initial, age, gender, or medical diagnoses).***

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| **Patient’s Initial** | DR | | | | **Code Status** | Modified Code (chemical only) | | | |
| **Age** | 68 | | | | | | | | |
| **Gender** | M | | | | | | | | |
| **Medical History**  (0.5) | Cardiovascular | HTN | | | | | Hema/Oncology |  |
| Respiratory | Pneumonia, COPD, Respiratory Failure | | | | | Infectious |  |
| Neurologic | Epilepsy | | | | | Integumentary | MRSA |
| Urinary |  | | | | | Reproductive |  |
| Digestive | GERD | | | | | Psychiatric | Anxiety |
| Other | Chronic Metabolic Encephalopathy;  Severe sepsis w/ acute organ dysfunction | | | | | Endocrine |  |
| **Surgical History**  (0.5) | 2 stents, hospital unable to obtain information about when placed. | | | | | | | | |
| **Allergies and Reactions (**0.5) | Lactose | | | | | | | | |
| **Psychosocial History**  (0.5) | Marital status | | Divorced | | | | | | |
| Education level | | Unable to obtain, family noncontributory, patient sedated and intubated | | | | | | |
| Social resources | | 2 children, Jason and Karen, noncontributory family information | | | | | | |
| Spiritual resources | | Unable to obtain, see above | | | | | | |
| Occupation | | Unable to obtain, see above | | | | | | |
| Employment | | Unable to obtain, see above | | | | | | |
| Smoking | | Former, quit 9/15/2005 | | | | | | |
| Alcohol | | No | | | | | | |
| Recreational Drugs | | No | | | | | | |
| **History of Present Illness** (1.0)  *Chronological account of patient’s current illness with pertinent +’s and –“s included and correct medical terminology used.* | DR is a 68 year old male who was transferred to Kaiser Permanente Fontana Emergency Department on 2/3/15 from a skilled nursing facility with altered mental status. Paramedics relayed from SNF staff that he was usually very verbal and shouted frequently, but was unusually quiet the morning of admission. Patient is normally on 2L of oxygen via NC. A CT of the head performed in the ED did not show any intracranial hemorrhaging. ABGs revealed hypercapneic respiratory acidosis (pCO2 99.4). Patient was started on BiPAP, but he became more agitated. He then desaturated to 80% on nasal cannula and was subsequently intubated and placed on assist control setting with FiO2 40%, rate at 26 breaths/min, VT at 400 mL, and PEEP at 5 cm H2O.  On 2/3/15: Patient was transferred to the ICU where he had a Foley Catheter and PICC line placed on the upper right arm for vasopressors. Patient started on Propofol 1000mg @ 1.39mL/hr for RASS goal of -3, and IV Vancomycin and Ceftazidime for recent history of MRSA.  On 2/4/15: Patient on ventilator A/C mode with FiO2 40%, rate at 18 BPM, VT at 400 mL, and PEEP at 5 cm H2O.Patient started on fentanyl drip, 10 mcg/mL @ 2.5 mL/hr titrated to RASS of -2, Propofol drip rate reduced to 1 mL/hr because BP was not tolerating Propofol well (per pt chart). | | | | | | | | |
| **OLDCART**  Initial Symptom(s) at the time of admission (in ED) (1.0) | Patient arrived to ED with altered mental status at which time his BP and HR were high, RR wnl, and SpO2 wnl. Patient then decompensated and went into respiratory failure. He was intubated and sent to ICU. | | | | | | | | |
| **Medical Diagnoses** | Respiratory Failure, altered mental status/metabolic encephalopathy, pneumonia, hypercapneic respiratory acidosis | | | | | | | | |
| **Findings that support/confirm the medical diagnosis at admission and during your care**  (1.0) | Physical Exam | | | Diagnostic Tests | | | | | | |
| Admission: Pt came into ED w/ altered mental status and metabolic encephalopathy, shortness of breath, diminished breath sounds bilaterally and across all lung fields, left upper lung crackles heard, no wheezing, tachycardic (per patient’s chart).  ABGs revealed hypercapnic respiratory acidosis. CXR and sputum culture returned positive for pneumonia. Head CT ruled out intracranial hemorrhage.  2/4/15: Diminished lung sounds across all lung fields bilaterally, no crackles heard; thick white secretions needing suction when repositioning; patient intubated and sedated to RASS -3; GCS 8; pupils 2/1mm bilaterally, round, sluggish, reactive to light and accommodation; Cardiac normal rate and rhythm with PVCs | | | Laboratory tests upon admission:  Hgb 10.4  HCT 36.7  WBC 15.1  BUN 19  CREAT 0.68  ABGs:  2/3/15: pH 7.28 PCO2 99.4 HCO3 45.0 PAO2 83.5 SaO2 95.5  CXR – linear densities seen bilaterally, most prominently in RUL; hyperinflation globally; ETT 4cm above carina; right PICC tip near cavoatrial junction  Head CT – negative for intracranial hemorrhage; pt hx of epilepsy, but no signs of seizure at this time.  Respiratory gram stain and culture – positive for bacterial pneumonia | | | | | |

**Head-to-Toe Assessment**

**Perform a head-to-toe assessment on your patient. *Total 7.0 points.***

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| General Status (0.5) | Patient intubated at sedated, making agitated movements. Patient restrained, HOB elevated to 30o. Has sequential compression devices on both lower extremities. | | | | | | | | | | | | | | | | | |
| VS & Hemodynamics (1.0) | Time | T | RR | | HR | NIBP | | MAP | SpO2 | | FiO2 | ETCO2 | | Glucose |  | |  |
| 0800 | 98.1 | 18 | | 84 | 141/69 | | 87 | 100% | | 40% | 33 | | 154 |  | |  |
| 1200 | 98.0 | 12 | | 67 | 123/60 | | 75 | 97% | | 30% | 45 | | 157 |  | |  |
| 1600 | 98.0 | 21 | | 104 | 136/74 | | 90 | 100% | | 30% | 54 | | 156 |  | |  |
| Neurologic & Pupils (0.5) | Patient on Propofol, GCS of 8 to 10, motor response: withdraws to pain and makes agitated movements with lowered sedation, nonverbal intubated; eye response: none; RASS -2; weak cough and gag reflex; Pupils: R 2/1mm L 2/1mm, sluggish, round and responsive to light. | | | | | | | | | | | | | | | | | |
| Head, Face, & Neck (0.5) | Unable to assess ROM of neck due to sedation; no edema, scars, or abrasions; ETT tube on the right, pt missing lower central incisor, teeth otherwise intact. | | | | | | | | | | | | | | | | | |
| ENT (0.5) | NG tube secured to bridge of nose. Oral mucosa pink and moist | | | | | | | | | | | | | | | | | |
| Cardiovascular (1.0) | NSR with PJCs; cap refill >3 s, peripheral pulses +1, S1 and S2 present but faint, no extra heart sounds heard, no JVD. Ectopy: PJCs. Patient’s BP, HR, & RR increase when repositioned. | | | | | | | | | | | | | | | | | |
| Pulmonary (1.0) | Regular rhythm and rate of respiration, unlabored on ventilator; productive cough; ETT size 7.5, 23 cm at right lip; lung sounds diminished bilaterally across all lung fields; no crackles heard. Small amounts of thick white secretions with need for suction occasionally. | | | | | | | | | | | | | | | | | |
| Ventilator Mode | | | TV | | | RR | | | FiO2 | | | PEEP | | | I: E Ratio | | |
| A/C | | | 400 | | | 12 | | | 40% | | | 5.0 | | | 1:2 | | |
| pH | | | PaO2 | | | PaCO2 | | | HCO3- | | | BE | | | SpO2 | | |
| 7.43 | | | 83.5 | | | 58.8 | | | 38.4 | | |  | | | 98 | | |
| Gastrointestinal (0.5) | Abdomen soft, nontender, round, nondistended; hypoactive bowel sounds. NG tube secure; Diet is NPO; last bowel movement unknown due to limited information from skilled nursing facility he was transferred from. 40 mL residual (medication). | | | | | | | | | | | | | | | | | |
| Genitourinary (0.5) | Foley placed 2/3/15, secured with stat lock; urine clear yellow; UO >30ml/hr | | | | | | | | | | | | | | | | | |
| Skin (wounds) (0.5) | Dry, slight pallor and cool to touch of hands and feet but rest of body warm to touch; good skin turgor; blanchable pinkness on both heels, some scabs on arms; left trochanter blister present on admission, covered with mepilex; skin color normal for race and ethnicity. | | | | | | | | | | | | | | | | | |
| Musculoskeletal (0.5) | Muscle wasting on extremities. Patient does not follow commands due to sedation; Passive ROM; unable to assess strength and reflexes due to sedation. | | | | | | | | | | | | | | | | | |
| Other | Left and right saphenous IV lines; PICC in RUA; dressings dry & intact. | | | | | | | | | | | | | | | | | |

**Pathophysiology**

**On your worn words, describe the: (*Total 6.0 points)***

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| **Pathophysiology of the admitting diagnosis** (4.0 points):  DR was transferred to Kaiser Fontana ED from a SNF due to altered mental status. While in the ED, he became very agitated and began to desaturate to 80% and was subsequently intubated and sedated. Prior to this hospitalization he was admitted for pneumonia and severe sepsis with acute organ dysfunction. Patient’s acute respiratory failure may likely be associated with the *Streptococcus pneumoniae* pneumonia from the previous hospitalization. Metabolic encephalopathy may possibly be due to the pneumonia infection and COPD exacerbation.  Smoking leads to Chronic Obstructive Pulmonary Disease (COPD) which causes inflammation of the bronchial mucosa and the breakdown of elasticity of lung tissue. This in turn leads to serious ventilation problems such as chronic bronchitis and emphysema, leading to airway obstruction, air trapping, impaired gas exchange, and frequent exacerbations. These exacerbations can be brought on by infections or irritation of any sort. Typically acute exacerbations of COPD lead to hypercapnia. If left untreated, this could lead to hypercapnic respiratory acidosis and respiratory failure (Huether, 2012).  Hypercapnic respiratory failure results from an imbalance between ventilatory supply and ventilatory demand. Normally, ventilatory supply far exceeds demand, but patients with preexisting lung diseases such as severe COPD cannot effectively increase lung ventilation in response to metabolic demand or exercise. Hypercapnic respiratory failure is sometimes called ventilatory failure because the primary problem is the inability of the respiratory system to ventilate out sufficient CO2 to maintain a normal PaCO2. Respiratory diseases such as COPD and pneumonia can cause a limitation in ventilatory supply (Lewis, 2010).  Pneumonia in an infection of the lower respiratory tract most commonly caused by bacteria. The immune system triggers an inflammatory response which attract neutrophils, macrophages and other mediators to the site of infection (alveoli) to combat the microorganisms. The inflammation damages mucous membranes within the lungs causing the alveoli to fill with debri and exudate. The microorganisms may also secrete toxins that can cause further damage to the alveolar mucous membranes. The accumulation of debris and mucous leads to dyspnea, hypoxemia, and V/Q mismatching which, if severe enough, can lead to acute respiratory failure (Huether, 2012, pg. 695). | |
| **Correlation between medical/surgical history and admitting diagnosis** (2.0 point):  DR has a past medical history of COPD due to smoking, hypertension, epilepsy, pneumonia and sepsis which all contribute to his current diagnoses of hypercapnic respiratory acidosis, pneumonia, respiratory failure, altered mental status. COPD leads to hyperinflation of the lungs, airway obstruction, impaired gas exchange, and impaired immune defenses. Combined with DR’s recent history of sepsis and pneumonia (12/15/14), gas exchange was significantly impaired possibly leading to reduced cerebral perfusion manifested as altered mental status, confusion, agitation, and metabolic encephalopathy (per patient’s chart). Since his immune system was already impaired, pneumonia set in once again and possibly contributed to the metabolic encephalopathy and worsening hypercapnia. An acute exacerbation of COPD while in the ED led to respiratory muscle overload which eventually led to an inability to ventilate off CO2, further contributing to hypercapnia and hypoxemia. The worsening hypoxemia and hypercapnea eventually causes hypercapnic respiratory acidosis if the body can no longer compensate, and in the case of DR, his disease state did not facilitate compensation which eventually caused the acute respiratory failure. | |
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**Diagnostic Tests**

Include **all** diagnostic tests and **ECG** strip.

Remember, a diagnostic test is any kind of medical test performed to aid in the diagnosis or detection of disease (i.e. laboratory tests, radiology tests, biopsies, endoscopies, etc.).

**Total 6.0 points**

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| Test | Results | Normal Range | Patient-Specific Etiology | Nursing Implications |
| ABGs | 2/3/15:  pH 7.28  PCO2 99.4  HCO3 45.0  PAO2 83.5  SaO2 95.5  2/4/15:  pH 7.43  PCO2 58.8  HCO3 38.4  PAO2 146  SaO2 98 | pH 7.35–7.45  PCO2 35–45  HCO3 22–26  PAO2 80–100  SaO2 >94% | Hypercapnic Respiratory Acidosis | * Monitor puncture site for bleeding or bruising * Proper infection control precautions to prevent infection at puncture site * Teach patient about side effects: feeling faint * Monitor SaO2, maintain >94% * Monitor respirations and breath sounds * Monitor LOC * Monitor ECG for changes * Position patient in high fowler’s |
| CXR | linear densities seen bilaterally, mostly RUL; hyperinflation | No abnormal findings | Patient has recent history of pneumonia and severe sepsis with acute organ dysfunction, and history of COPD. Daily CXRs ordered to monitor for possible development of pneumonia and complications of COPD. | * Confirms bilateral densities * Educate patient about procedure |
| CBC w/ differential | WBCs 15.1  RBC 4.39  HGB 11.1  HCT 36.7  PLT 505 | WBC 4 – 11 x1000/mcL  RBC 4.7 – 6.1 Mill/mcL  HGB 14 – 18 g/dL  HCT 42 – 52 %  PLT 130 – 400 x1000/mcL |  | * Monitor for signs and symptoms of infection (fever, elevated WBCs) * Monitor O2 saturation since RBC and Hgb are low; adjust oxygen as needed * Monitor for DVT and PE since platelets are elevated |
| BMP | Chloride 87  CO2 44  BUN 19 | Cl 101 – 111 mEq/L  CO2 21 – 31 mEq/L  BUN <=18 mg/dL |  | * Monitor O2 saturation * Listen to lung sounds * Monitor respiration rate and rhythm * Get ABGs to monitor CO2 status * Monitor urine output |
| Magnesium/ Phosphate | Mg 1.7  Phos 2.1 | Mg 1.7 – 2.8 mg/dL  Phos 2.7 – 4.5 mg/dL | Patient has lost 88 lb (per patient’s chart) since last hospitalization (12/15/14); nutrition status may be altered; patient is on propofol, Zofran, reglan, lactulose, solumedrol, insulin; estimated BMI 16.51 kg/m2, current wt 99.3 lbs, ideal body wt is 143 lbs. severely underweight, currently NPO status, inadequate to meet nutritional needs. | * Monitor nutrition status (phosphate levels) * Daily weights * Ask doctor when we can start patient on tube feedings * Monitor patient’s wounds (delayed healing without proper nutrition) |
| Troponin I | 0.01 ng/mL | <=0.03 ng/mL | To rule out MI (ECG showed ST and T wave changes, sinus tachycardia, and rate 118 at admission) | * Monitor ECG for changes (ST elevations or T wave inversions, HR changes) * Monitor patient for signs and symptoms of MI * Be ready to treat patient with MONA if MI occurs |
| CT head | Negative | Negative | Altered mental status at admission; to rule out intracranial hemorrhage. | * Confirms no ICH * Continue to monitor for altered mental status * Neuro checks |
| Blood glucose levels | 2/3/15: 195  2/4/15: 157 | 70 – 140 mg/dL | Altered mental status at admission; patient also receiving steroids for respiratory failure and has antibiotics mixed with dextrose. | * Alternate testing sites * Administer insulin as needed per orders * Monitor patient’s wounds (delayed healing) |
| Urinalysis (toxicology + EtOH) | Negative | Negative | Altered mental status at admission | * See interventions for “blood glucose levels” above. |

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| ECG Strip | | | | | | | | | |
| HR | Rhythm | P wave | PR | QRS | P:Q ratio | ST segment | T-wave | Q-T | Ectopy |
| 71 | regular | normal;  1 inverted on early beat | 0.10 s | 0.05 s | 1:1 | Normal (no elevation or depression) | normal | 0.38 s | PJCs |
| **Interpretation**: Normal sinus rhythm with PJCs  **Side note:** I tried my hardest to get lead II to come down on the strip and even asked the “famous” Frank to help me, but even he couldn’t figure it out! Sorry ☹ | | | | | | | | | |

**Six Schelued medications and IV Fluids**

Include **all** **scheduled** medications and the **PRN** if administered. **Total 6.0 points.**

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| Medication (Name, Dose, And Route): Propofol (Diprivan) 1000 mg/100mL IV, start rate 1.39 mL/hr titrated to RASS -3 | |
| **Classification** | Sedative |
| **Mechanism of Action** | Short-acting hypnotic. Mechanism of action is unknown. Produces amnesia. Has no analgesic properties |
| **Patient-Specific Indication** | Sedation. |
| **Side Effects and Adverse Effects** | Dizziness, headache, apnea, cough, bradycardia, hypotension, hypertension, abd cramping, hiccups, nausea, vomiting, dermal flushing, local burning pain or stinging, involuntary muscle movements, perioperative myoclonia, green urine, fever. |
| **Nursing Implications** | Assess respiratory status, pulse and BP throughout therapy; monitor for apnea; maintain patent airway and adequate ventilation; assess LOC and level of sedation throughout and following administration and titrate to sedation goal according to orders; sedation vacation; |
| **Patient/family Education** | “Your loved one is on this medication so that he will be more comfortable while he has the tube in his throat because that can be uncomfortable. If he was awake, the tube would feel awful, he would be agitated and uncomfortable, may want to pull it out, and if he does, his health could be in danger. So the medicine really helps to facilitate healing by allowing him to rest comfortably.” |

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| Medication (Name, Dose, And Route): Fentanyl 10mcg/mL IV, rate 2.5 mL/hr DNT | |
| **Classification** | Opioid analgesic |
| **Mechanism of Action** | Binds to opiate receptors in the CNS, altering the response to and perception of pain. Produces CNS depression. |
| **Patient-Specific Indication** | Pain and sedation |
| **Side Effects and Adverse Effects** | Confusion, paradoxical excitation/delirium, postoperative depression, postoperative drowsiness, blurred double vision, apnea, laryngospasm, allergic bronchospasm, respiratory depression, arrhythmias, bradycardia, circulatory depression, hypotension, biliary spasm, nausea, vomiting, facial itching, skeletal and thoracic muscle rigidity (with rapid IV infusion) |
| **Nursing Implications** | Monitor RR and BP frequently throughout therapy; report significant changes immediately; Monitor respiratory status since respiratory depression may last longer than analgesic effects. Reduce initial doses of other opioids by 25-33% of usually recommended dose; monitor closely. Have Narcan on hand. Monitor for symptoms of toxicity and overdose. |
| **Patient/family Education** | “This medication helps to put your loved one to sleep and also to take away any pain he may be feeling while he is in the hospital. It will make him more comfortable while he has the tube going into his throat. |

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| Medication (Name, Dose, And Route): Methylprednisolone (Solumedrol) 60 mg IV Q6hrs | |
| **Classification** | Corticosteroid, immunosuppressant agent |
| **Mechanism of Action** | Suppresses inflammation and the normal immune response. Has numerous intense metabolic effects. Suppresses adrenal function at chronic doses of 4mg/day. Has negligible mineralocorticoid activity. |
| **Patient-Specific Indication** | Diagnosis of Respiratory Failure |
| **Side Effects and Adverse Effects** | CNS depression, euphoria, HA, ↑ICP (children only), personality changes, psychoses, restlessness, cataracts, ↑IOP, HTN, peptic ulceration, anorexia, nausea, vomiting, acne, ↓ wound healing, ecchymosis, fragility, hirsutism, petichiae, adrenal suppression, hyperglycemia, fluid retention (long term high doses), hypokalemia, hypokalemic alkalosis, thromboembolism, thrombophlebitis, wt gain, wt loss, muscle wasting, osteoporosis, avascular necrosis of joints, muscle pain, Cushingoid appearance (moon face, buffalo hump), ↑ susceptibility to infection. |
| **Nursing Implications** | Assess lung sounds periodically throughout therapy; monitor for signs of adrenal insufficiency (hypotension, wt loss, weakness, anorexia, lethargy, confusion, restlessness); monitor intake and output and get daily weights; monitor for peripheral edema, steady wt gain, crackles, or dyspnea. |
| **Patient/family Education** | “This medication will make your loved one’s immune system be less effective at fighting infection, so we want to make sure he avoids people with known illnesses. It will, however, help to stop inflammation throughout his body which can cause a lot of internal damage.” |

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| Medication (Name, Dose, And Route): Albuterol (Proair HFA/Proventil HFA) 90 mcg/actuation 1 puff Inhaln Q4hrs; Q1hr PRN | |
| **Classification** | Bronchodilator |
| **Mechanism of Action** | Binds to β2 adrenergic receptors in the lungs and sets off a cascade of reactions that leads to a decrease of calcium entering the cell. Decreased intracellular calcium relaxes smooth muscle of airways with subsequent bronchodilation. |
| **Patient-Specific Indication** | Diagnosis of Respiratory Failure |
| **Side Effects and Adverse Effects** | Nervousness, restlessness, tremors, headache, insomnia, chest pain, palpitations, angina, arrhythmias, HTN, N/V, hyperglycemia, hypokalemia. |
| **Nursing Implications** | Assess lung sounds, pulse, and BP before administering and during peak of medication. Note amount, character, and color of sputum produced. Monitor pulmonary function tests before starting therapy. Observe for wheezing (paradoxical bronchospasm); if condition occurs, withhold med and contact RT or MD. Monitor serum potassium levels. Provide frequent oral care to mechanically ventilated patients. Monitor ECG for changes. |
| **Patient/family Education** | “Since your loved one had some serious breathing problems, this medication will help his lungs to open up and take in the oxygen so that he can breathe better.” |

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| Medication (Name, Dose, And Route): Vancomycin 1g/200mL 0.9%NS IV Q12hrs | |
| **Classification** | Anti-infective |
| **Mechanism of Action** | Binds to bacterial cell wall, resulting in cell death. |
| **Patient-Specific Indication** | High white blood cell count (15.6x1000/mcL), recent history of pneumonia and severe sepsis with acute organ dysfunction |
| **Side Effects and Adverse Effects** | Ototoxicity, hypotension, nausea, vomiting, nephrotoxicity, rashes, eosinophilia, leukopenia, phlebitis, back and neck pain, anaphylaxis, chills, fever, “red man” syndrome (rapid infusion), superinfection. |
| **Nursing Implications** | Assess patient for signs and symptoms of infection; take vitals, especially BP. Note appearance of sputum, urine and stool for s/s infection. Monitor IV closely (irritant can cause necrosis and severe pain w/ extravasation). Evaluate hearing function and serum vancomycin levels prior to and throughout therapy, especially with patients with renal dysfunction or those older than 60. Assess for signs of superinfection (black furry tongue, loose/foul-smelling stool). Monitor labs for albumin, casts or cells in urine or decreased specific gravity, CBC, renal function (↑BUN). |
| **Patient/family Education** | “Since your loved one’s blood showed evidence of infection, this medication will help kill any infection in his body.” |

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| Medication (Name, Dose, And Route): Levetiracetam (Keppra) 500mg IV BID | |
| **Classification** | Anticonvulsant |
| **Mechanism of Action** | Appears to inhibit burst firing without affecting normal neuronal excitability and may selectively prevent hypersynchronization of epileptiform burst firing and propagation of seizure activity. |
| **Patient-Specific Indication** | Altered mental status; history of epilepsy |
| **Side Effects and Adverse Effects** | Dizziness, fatigue, weakness, behavioral abnormalities (agitation, hostility, anxiety, apathy, emotional lability, depersonalization, depression), coordination difficulties. |
| **Nursing Implications** | Assess location, duration, and characteristic of seizure activity. Assess for CNS adverse effects. Monitor RBC and WBC (may cause decrease) and liver function tests. |
| **Patient/family Education** | “This medication is helping your loved one to control his seizure disorder of epilepsy. It is important that he continues taking it while he is in the hospital.” |

**Additional Medications**

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| Medication: (name, dose, route) | Classification & Pt-specific indication: |
| Acetaminophen (Tylenol) 650 mg PO Q 4 hrs PRN | Antipyretic & pain reliever; as needed for pain rated 1-3 on scale of 1-10 |
| Ceftazedime (fortaz) in D5W 2 g Q8hrs IV | Anti-infective agent; WBC 15.6x1000/mcL; recent history of pneumonia and severe sepsis with acute organ dysfunction |
| D50W Inj Syringe 12.5 g IV PRN | If blood glucose is low |
| Enoxaparin (lovenox) 40 mg SQ every 24 hours | Blood thinner for DVT or PE prophylaxis |
| Insulin Regular Human Sliding Scale (Humlin R/Novalin R) Q4hrs SubQ | To control blood glucose levels |
| Ipratropium (Atrovent HFA) 17 mcg/actuation MDI 6 puff Q4hrs into ventilator | Diagnosis of Respiratory Failure |
| Lactulose 20g PO TID PRN | Prophylaxis for constipation and patient history of constipation |
| Metoclopramide (Reglan) 10 mg IV Q6 hrs | Antiemetic; Nausea and vomiting prophylaxis |
| Norepinephrine in D5W 8mg/250mL IV PRN to be started at 3.75mL/hr if needed (patient did not receive any) | Vasopressor; to bring up BP if needed |
| Ondansetron (Zofran) 4mg IV Q6hrs | Antiemetic; nausea and vomiting prophylactic; patient has history of GERD |
| Oseltamivir (Tamiflu) 75 mg PO BID | Antiviral; to treat flu symptoms |
| Pantoprazole (Protonix) 40 mg IV daily | Reflux prophylaxis; patient has history of GERD |
| Potassium Phosphate IVPB 15mmol IV one time | Electrolyte for replacement |
| REFRESH PM 57.3-42.5% Ophthalmic ointment Q8hrs both eyes | Eye moistener |
| Sorbitol 70% Solution 30 mL PO TID | Constipation |

**Synthesis, Critical Thinking, and Priritizing**

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| Provide a synopsis of your patient’s hospitalization story. Briefly highlight the acute physiological and psychological alterations and the needs of your patient, as well as how the patient improved (if any). *Total 3.0 Points.* |
| Acute physiological alterations:  DR was transferred to Kaiser Fontana ED from a SNF due to altered mental status. Physical exam upon admission revealed shortness of breath, diminished breath sounds bilaterally left upper lung crackles, and tachycardia. He became very agitated, decompensated, and was intubated, sedated, and transferred to ICU. Admitting ABGs revealed hypercapnic respiratory acidosis upon admission upon which he was placed on continual mechanical ventilatory support, bronchodilators such as albuterol and atrovent, corticosteroids such as solumedrol to reduce inflammation, chest physiotherapy and respiratory therapy. Repeat ABGs revealed decreasing trend for CO2. Although lung sounds still diminished bilaterally on day of care, no crackles heard, no tachycardia, no shortness of breath, and O2 saturation >94%.  A head CT done in ED for Altered mental status at admission came back negative for ICH. Other tests pending.  Patient’s acute respiratory failure, positive sputum culture for pneumonia, and high WBC (15.1 x1000/mcL) was treated with anti-infectives vancomycin and ceftazidime. Repeat CBC revealed decreasing WBC count. Sputum appearance improved from thick yellow/green to thick white sputum.  Acute psychological alterations:  DR may have fear and anxiety related to his diagnosis and being hooked up to several machines. DR is currently intubated and on mechanical ventilation, sedated to a RASS score of -3, moderate sedation. |

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| Based on your analysis, list the needs of your patient in each of the following areas. *Total 7.0 Points (1 point per area).* | |
| Basic Care and Comfort | Repositioning and cleaning for skin integrity, keeping noise at a minimum, monitoring sedation to a RASS of -3, continuing pain control with medication, suction ETT and mouth as needed, frequent oral care, daily bed baths, NG tube care, cleansing for skin integrity around all catheters, tubes, and dressings, foley care, hand hygiene, elevate HOB 30o |
| Health Promotion and Education | Proper hand washing techniques to prevent nosocomial infection, turning patient every 2 hours, elevate heels off of the bed, prophylactic SCDs for DVT prevention, elevate HOB 30o, contact precautions |
| Physiological Needs (high priority) | Monitor SaO2, ABGs, and ventilation, suction ETT as needed; continue breathing treatments, antibiotics, sedation, and pain control medications accordingly; nutrition consult for tube feeding |
| Physiological Needs (low priority) | Oral care, skin care, DVT prophylaxis, contact precautions for suspected MRSA |
| Psychological Needs | Possibility for fear and anxiety; get in contact with children for family support; patient is divorced; pt needs long term nursing facility care due to COPD and need for O2 NC. |
| Pharmacological Considerations | Sedation vacation daily, wean off sedation (propofol and fentanyl) once extubated, continue antibiotics as needed for infection, lovenox for DVT/embolism prophylaxis, monitor corticosteroid effects: blood glucose, cushingoid appearance, delayed wound healing, infection vulnerability. Continue O2 via NC per orders, continue Keppra for epilepsy as ordered. |
| Safety and Infection Control | Bed rails x 4, restraints removed and skin checked frequently to prevent skin breakdown, maintain airway, proper hand hygiene, ophthalmic eye ointment, alarms set and working on cardiac monitor, SaO2, HR, and BP. |

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| Synthesize the patient needs and generate nursing diagnoses. *Total 5.0 Points (1 point per diagnosis).* | |
| Two High Priority Nursing Diagnoses: | |
|  | Impaired gas exchange r/t alveolar capillary membrane changes secondary to COPD aeb ABGs (pH 7.43, PCO2 58.8, HCO3 38.4, PAO2 146, SaO2 98). |
|  | Ineffective airway clearance r/t bronchoconstriction, mucous secretion, ineffective cough, and infection aeb weak cough reflex, sputum culture positive for strep pneumonia, high WBCs (15.1x100/mcL), thick white sputum. |
| Two Medium Priority Nursing Diagnoses (at least one of them should be spiritual or psychosocial diagnosis): | |
|  | Imbalanced nutrition: less than body requirements r/t NPO status and disease processes aeb wt loss of 88 lb since 12/2014, current wt 99 lbs, ideal body weight 146 lbs, BMI 16.1. |
|  | Interrupted family processes r/t patient’s chronic disease process and family dynamics |
| One Low Priority Nursing Diagnosis: | |
|  | Risk for skin breakdown r/t sedation aeb RASS -3 and arm restraints |

**NURSING DIAGNOSIS**

***Total 25.0 Points***

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| **Nursing Diagnosis I:** Impaired gas exchange r/t alveolar capillary membrane changes secondary to COPD and pneumonia aeb ABGs (pH 7.59, PCO2 38.4, HCO3 37.6, PAO2 124, SaO2 97.3), altered mental status on admission, serum CO2 (38 mmol/L), bilateral densities on CXR, sputum culture positive for strep pneumonia infection. |
| * **Relevant Assessment:**   Ventilator-dependent for breathing, cold extremities, productive cough, thick white sputum, hypercapnia (in ABGs), restlessness and agitation when sedation lowered |
| * **Relevant Diagnostic Tests:**   Frequent arterial blood gases (severe hypercapnia), chest xray (bilateral densities), Head CT (negative for ICH) |
| * **Relevant Medications and Therapies:**   Breathing treatments: solumedrol, albuterol, atrovent; Chest physiotherapy; Mechanical ventilation/oxygen therapy; Antibiotics: vancomycin and ceftazedime; Sedation & pain management: propofol and fentanyl |
| * **Expected Outcomes:**   Patient will demonstrate improved ventilation and decreased CO2 levels (aeb ABGs), maintain clear lung sounds and remain free of respiratory distress by end of shift. |
| * **Nursing Interventions with *Rationales*:**   \* Monitor ABGs, assess LOC during sedation vacations, monitor skin color for pallor and cap refill, monitor CBC and SaO2, administer O2 as ordered, suction ETT as needed and ensure adequate humidification, reposition patient every 2 hours, administer antibiotics as ordered.  \* Auscultate lung sounds every 1 to 2 hours. Listen for diminished breath sounds, crackles, and wheezes. *The presence of crackles and wheezes may alert the nurse to airway obstruction, which may lead to exacerbation of existing hypoxia. In severe exacerbations of COPD, lung sounds may be diminished or distant with air trapping* (Ackley & Ladwig, 2014).  \* Monitor oxygen saturation continuously using pulse oximetry. Correlate arterial oxygen saturation blood gas results with pulse oximetry. *An O2 sat of <90% or a partial pressure of oxygen of <80 mm Hg indicates significant oxygenation problems. Pulse oximetry is useful for tracking and/or adjusting supplemental oxygen therapy for clients with COPD* (Ackley & Ladwig, 2014).  \* Position the patient in a semirecumbent position with HOB elevated 30 to 45o angle. *Evidence shows that mechanically ventilated patients have a decreased incidence of VAP if the client is placed in a 30o to 45o semirecumbent position as opposed to a supine position* (Ackley & Ladwig, 2014)*.* |
| * **Evaluation**   Goal partially met. Patient showed no improvement of ventilation, CO2 levels increased (ABGs: 7.43, 58.8, 38.4, 146, 98.4), lung sounds diminished but clear, and did not exhibit any signs or symptoms of respiratory distress. |

***Total 25.0 Points***

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| **Nursing Diagnosis II:**  Ineffective airway clearance r/t bronchoconstriction, mucous secretion, ineffective cough and pneumonia infection aeb weak cough reflex, sputum culture positive for strep pneumonia, high WBCs (15.1x100/mcL), thick white sputum, CXR revealing bilateral densities, diminished breath sounds, and ventilator dependence. |
| * **Relevant Assessment:**   Weak cough reflex, diminished breath sounds (air trapping), productive cough (thick white sputum), agitation, ventilator-dependent, sedated, |
| * **Relevant Diagnostic Tests:**   CBC: high WBCs  Sputum culture: positive strep pneumonia  CXR: bilateral densities |
| * **Relevant Medications and Therapies:**   Breathing treatments: solumedrol, albuterol, atrovent; Chest physiotherapy to break up secretions; Mechanical ventilation/oxygen therapy with humidification; Antibiotics: vancomycin and ceftazedime; Sedation & pain management: propofol and fentanyl |
| * **Expected Outcomes:**   Patient will maintain patent airway at all times, exhibit clear lung sounds and remain free of worsening signs and symptoms of infection by end of shift. |
| * **Nursing Interventions with Rationales:**   \* elevate HOB at least 30o, suction ETT Qhr and note color, amount, and characteristics of sputum, oral care Qhr, recommend breathing treatments (albuterol), recommend bronchoscopy with NS lavage, O2 therapy as ordered, monitor O2 saturation continuously, reposition Q2hrs.  \* If the client is intubated, consider the use of kinetic therapy, using a kinetic bed that slowly moves the client with 40o turns. *Rotational therapy may decrease the incidence of pulmonary complications in high risk clients with increasing ventilator support requirements, at risk for VAPs, and clinical indications for acute lung injury or ARDS with worsening PaO2, FiO2 ratio, presence of fluffy infiltrates via CXR concomitant with pulmonary edema, and refractory hypoxemia.* (Ackley & Ladwig, 2014).  \* Reposition the client as needed. Use rotational therapy or kinetic bed therapy as above for clients in which side to side turning is contraindicated or difficult. *Changing the position frequently decreases the incidence of atelectasis, pooling of secretions, and resultant pneumonia.* ***EBP:*** *Continuous lateral rotational therapy has been shown to improve oxygenation and decrease the incidence of VAP.* (Ackley & Ladwig, 2014).  \* When suctioning, avoid saline instillation before suctioning. ***EBP:*** *Repeated studies have demonstrated that saline instillation before suctioning has an adverse effect on oxygen saturation in both adults and children* (Ackley & Ladwig, 2014). |
| * **Evaluation:**   Goal met, patient maintained patent airway throughout shift, exhibited clear lung sounds, and remained free of worsening S/S of infection. |

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