Date: 10/29/18 **Student Name:** [redacted] **Clinical Site:** Benedictine Health Care System

Clinical Site Instructor: Trinette McLainWesseh .

Room # 214 **Client Initials:** A.H. **Client age:** 46 **Gender:** Male

Allergies: Metoclopramide **Code Status:** Full Code

Diet/Nutrition: Tube feeding **Activity:** As Tolerated **Fall Risk:** Yes / No

Use of (type/amount/frequency): Alcohol: Not Applicable **Tobacco (pack years):** Not Applicable

Treatments: Foley Catheter, Vent Dependent. **IV/Tubes/Ostomies:** Tracheostomy

Dressings/Wounds: (type & location) GI tube draincare B.I.D. (GT, GJ) Abdomen Calmoseptine/viscopastes to area.

Oxygen: (delivery method & amount) Vent Dependent **Dialysis:** No

LAB RESULTS: (minimum of 2 labs) Why is this lab significant for this client's condition? Write down ABNORMAL lab results and include what the NURSE needs to monitor for or do related to the abnormal lab result under the significance column. ONLY USE ABNORMAL LAB RESULTS QSEN: Informatics, Safety SLO: 3, 8

Date	Test	Normal Value	Client Value	Significance
10/9/18	Creatinine	0.73-1.18 mg/dL	0.32 mg/dL	Low
10/9/18	Blood Urea Nitrogen	9-26	28	High
10/9/18	Potassium	3.5-5	3.4	Low
10/8/18	RDW	11.0-15.0	15.1	High

LABS

Look at the 2 labs you looked up for this week. For each of the labs look up what body system or system(s) it tells you about, what does an elevated level mean, and what does a low level mean. Also, are there any special considerations or client education regarding prepping the client for the test? (example: fasting for 6 hours, etc.) QSEN: Informatics, Safety SLO: 3, 8

Lab Test#1: Bood Urea Nitrogen **Systems affects:** The blood urea nitrogen test reveals important information about how well the renal and hepatic systems are functioning by measuring the amount of urea nitrogen in the blood. The liver produces ammonia, which contains nitrogen, after it breaks down proteins used by the body's cells. A BUN test is useful in diagnosing liver damage, malnutrition, poor circulation, dehydration, urinary tract obstruction, congestive heart failure, gastrointestinal bleeding. There is no special preparations or special considerations for this lab, but it is important to notify the physician about current medications being used, both over-the-counter and prescription, at the time of the test, as these can influence the results of the lab. Chloramphenicol, or streptomycin, can lower BUN levels. Other drugs such as certain antibiotics such as tetracyclines, diuretics such as spironolactone, and even certain cancer medications such as methotrexate can increase BUN levels.

Elevated level: Kidney disease or blockage of the flow of urine from the kidneys causes high BUN and creatinine values. A high BUN value can mean kidney injury or disease is present. Kidney damage can be

caused by diabetes or high blood pressure that directly affects the kidneys. High BUN levels can also be caused by heart failure.
Low level: Low BUN value may indicate severe liver disease, malnutrition, and over-hydration but a BUN test is not usually used to diagnose these conditions.

Lab Test #2: Potassium **Systems affects:** Potassium is an electrolyte that is vital to cell metabolism. It helps transport nutrients into cells and removes waste products out of cells. It is also important in muscle function, helping to transmit messages between nerves and muscles. Potassium, along with other electrolytes such as sodium, chloride, and bicarbonate, helps regulate the amount of fluid in the body and maintains a stable acid-base balance. Potassium is present intracellular, extracellular, and transcellular fluid, but it is mostly found in the intracellular fluid. Levels are mainly controlled by aldosterone, a hormone produced by the adrenal glands in the kidneys. Because the blood concentration of potassium is so small, minor changes can have significant consequences. If potassium levels are too low or too high, there can be serious health consequences; a person may be at risk for developing shock, respiratory failure, or heart rhythm disturbances. An abnormal potassium level can alter the function of the nerves and muscles; impairing cardiac contractibility. Potassium levels may be ordered when people undergo a routine medical exam or when they are being evaluated for a serious illness such as kidney disease, cardiac arrhythmia, a condition treated with diuretics or heart medications, hypertension, diabetic ketoacidosis, and when monitoring a patient receiving dialysis, diuretic therapy, or intravenous fluids. (Labtestsonline.com, 2016)

Elevated level: High potassium levels (hyperkalemia) may indicate Adrenal insufficiency, Kidney disease, Addison's disease, anorexia, muscle damage, consuming too much potassium containing food items, excessive IV potassium, Infection, Diabetes, Dehydration, and use of certain drugs can also cause high potassium such as non-steroidal anti-inflammatory drugs (NSAIDs), ACE inhibitors, beta blockers such as propanolol and atenolol), angiotensin-converting enzyme inhibitors such as captopril, enalapril, and lisinopril, and potassium-sparing diuretics such as triamterene, amiloride, and spironolactone. Treatment for high potassium may include the use of diuretics, kidney dialysis, or insulin injections, kayaxelehtfn. (Labtestsonline.com, 2016)
Low level: Low potassium levels (hypokalemia) may indicate Conn syndrome (hyperaldosteronism), use of potassium wasting diuretics, uncontrolled diabetes (the potassium level may fall after someone takes insulin), diarrhea and vomiting, acetaminophen overdose, use of certain drugs such as corticosteroids, beta-adrenergic agonists such as isoproterenol, alpha-adrenergic antagonists such as clonidine, antibiotics such as gentamicin and carbenicillin, and the antifungal agent amphotericin B can cause loss of potassium. Treatment for low potassium may include the use of potassium chloride supplements and increasing the amount of potassium-rich foods in the diet, such as bananas, beef or spinach. (Labtestsonline.com, 2016)

Lab Test#3: Creatinine **Systems affects:** Creatinine is a waste product produced by muscles from the breakdown of a compound called creatine. Creatinine is removed from the body by the kidneys, which filter almost all of it from the blood and release it into the urine. This test measures the amount of creatinine in the blood and urine. Creatine is part of the cycle that produces energy needed to contract muscles. Both creatine and creatinine are produced by the body at a relatively constant rate. Since almost all creatinine is filtered from the blood by the kidneys and released into the urine, blood levels are usually a good indicator of how well the kidneys are working. The quantity produced depends on the size of the person and their muscle mass. For this reason, creatinine concentrations will be slightly higher in men than in women and children. Instruction of overnight fasting or refrain from eating cooked meat, some studies have shown that eating cooked meat prior to testing can temporarily increase the level of creatinine, is typically how people prepare for this test. If a 24-hour urine sample is being collected, it is important to save all of the urine produced during that time period. (Labtestsonline.com, 2015)
Elevated level: Increased creatinine levels in the blood suggest kidney disease or other conditions that affect kidney function. These can include damage to or swelling of blood vessels in the kidneys called glomerulonephritis caused by infection or autoimmune diseases, bacterial infection of the kidneys called pyelonephritis, acute tubular necrosis caused by drugs or toxins, prostate disease, kidney stone, or other causes

of urinary tract obstruction, reduced blood flow to the kidney due to shock, dehydration, congestive heart failure, atherosclerosis, or complications of diabetes. (Labtestsonline.com, 2015)

Low level: Low blood levels of creatinine are not common, but they are also not usually a cause for concern. They can be seen with conditions that result in decreased muscle mass. (Labtestsonline.com, 2015)

Lab Test #4: RDW **Systems affects:** A Red Cell Distribution Width test accompanies the Complete Blood Count test. A Complete Blood Count is typically performed using an automated instrument that measures various parameters, including counts of the cells that are present in a person's sample of blood. The results of a Complete Blood Count can provide information about not only the number of cell types but also can give an indication of the physical characteristics of some of the cells. A standard Complete Blood Count includes evaluation of white blood cells, red blood cells, and evaluation of platelets. Significant abnormalities in one or more of the blood cell populations can indicate the presence of one or more conditions. Typically other tests are performed to help determine the cause of abnormal results. Often, this requires visual confirmation by examining a blood smear under a microscope. A trained laboratorian can evaluate the appearance and physical characteristics of the blood cells, such as size, shape and color, noting any abnormalities that may be present. Any additional information is noted and reported to the healthcare provider. (Labtestsonline.com, 2015)
Red blood cells, also called erythrocytes, are produced in the bone marrow and released into the bloodstream as they mature. They contain hemoglobin, a protein that transports oxygen throughout the body. The typical lifespan of a Red Blood Cell is 120 days; thus the bone marrow must continually produce new Red Blood Cells to replace those that age and disintegrate or are lost through bleeding. A number of conditions can affect the production of new RBCs and their lifespan, in addition to those conditions that may result in significant bleeding. (Labtestsonline.com, 2015)

The Complete Blood Count determines the number of Red Blood Cells and amount of hemoglobin present, the proportion of blood made up of Red Blood Cells (hematocrit), and whether the population of Red Blood Cells appears to be normal. RBCs normally are uniform with minimal variations in size and shape; however, significant variations can occur with conditions such as vitamin B12 and folate deficiencies, iron deficiency, and with a variety of other conditions. If the concentration of red blood cells or the amount of hemoglobin in the blood drops below normal, a person is said to have anemia and may have symptoms such as fatigue and weakness. Much less frequently, there may be too many Red Blood Cells in the blood (erythrocytosis or polycythemia). In extreme cases, this can interfere with the flow of blood through the small veins and arteries. (Labtestsonline.com, 2015)

Elevated level: Known as polycythemia. Indicates dehydration, pulmonary disease, kidney or other tumor that produces excess erythropoietin, smoking, living at high altitude, genetic causes such as altered oxygen sensing or abnormality in hemoglobin oxygen release, and polycythemia vera—a rare disease. (Labtestsonline.com, 2015)
Low level: Known as anemia. Indicates acute or chronic bleeding, RBC destruction such as hemolytic anemia, nutritional deficiency such as iron deficiency, vitamin B12 or folate deficiency; bone marrow disorders or damage, chronic inflammatory disease, and chronic kidney disease. (Labtestsonline.com, 2015)

Date: 10/15/18 **Client Initials:** A.H. **Student Name:** [redacted]

Medical Diagnosis(s): (found in paper chart)

Admitting/Primary:
Autonomic Instability, Anoxic encephalopathy/ brain injury, and Pulseless Electrical Activity arrest with ROSC

Medical History (includes medical and surgical)

GERD with esophagitis	History of Gastric Dysmotility
Chronic Otitis Media	Hypomagnesia
Dysphagia	Cardiac Arrest
Dementia	Viral Encephalitis
Urinary Retention	Transaminitis
Severe Protein Calorie Malnutrition	Acute hypoxemic respiratory failure
Hyponatremia	Acute INR elevation with gum bleeding
Lactic Acidosis	Neuroleptic Malignant Syndrome
History of Seizure disorder and epilepsy	Benzodiazepine dependence

End of Shift Report or SBAR: QSEN: Informatics, Team-Work Collaboration SLO: 3

DATE	TIME	
10/15/18	**1300**	**S:** Hello, This is Shaneil from Floor 2, unit 3 at Benedictine Care Center. I'm caring for A.H. A.H. is a 46 year old male in room 214, I'm calling regarding his pain control and his excessive, thick, viscous secretions in his mouth.
10/15/18	**1300**	**B:** Patient has had NMS as a reaction to metoclopramide in the past. Patient observed with spontaneous irregular movements to signal pain. Patient has a history of epilepsy and seizure disorder, and has a diagnosis of autonomic instability.
10/15/18	**1300**	**A:** Patient has been in-line and deep suctioned multiple times in the last 4 hours, given his albuterol mask, given acetylcysteine to thin the secretions and was given his PRN and scheduled Acetaminophen for pain. He has been positioned 45 degrees in the bed. His current vitals are T: 99.6 tympanic, P: 118 apical, RR: 12, BP: 120/82 left arm supine, O2: 93% with a vent. Normal bowel sounds, 90 glucose, and bilateral crackles in lungs.
10/15/18	**1300**	**R:** I believe A.H. needs an increase in pain medication and increase in usage of bronchodilators to thin out secretions. I think he would benefit from some longer lasting medications. I would like your opinion on what we should do for A.H and your either your recommendation on a treatment or your approval of my suggestions for him.
11/5/18	**1600**	**D:** Vitals were taken when patient was in bed in room. Temperature and pulse were elevated, and there were audible course crackles in lower lobes of lungs bilaterally upon inspiration. Patient grimaced and jerked when his vitals were being taken, and he scored an 8/10 for pain on the nonverbal pain scale. Last prn pain medicine was given 8 hours ago.
		Shaneil Singleton, SN
11/5/18	**1605**	**A:** Patient was given 1 tab of acetaminophen to relieve mild pain via feeding tube. Patient is resting in bed at a 30 degree angle grimacing still with moderate

		spontaneous movements as the medicine takes its time to kick in.
		Shaneil Singleton, SN
11/5/18	**1635**	**R:** 30 minutes later, patient is no longer grimacing, has only mild spontaneous movement, and his temperature and pulse are within defined limits. Patient scores a 2/10 on the nonverbal pain scale. Medication is thought to be effective.
		Shaneil Singleton, SN
11/5/18	**1640**	**P:** Continue to monitor patient for increased or decreased pain response. Continue to perform nonpharmacological interventions PRN. Continue to give prescribed scheduled pain medicines. Notify provider
		Shaneil Singleton, SN

Date: _____ **Client Initials:** _____ **Student Name:** _____

ALL Medication List (found in paper chart) QSEN: Safety, Evidence Based Practice. SLO: 2, 4

Medication (Include dose, time, route, & Frequ	**Classification**	**Indication for use**
Magnesium Oxide 400mg by feeding tube, T.I.D.	Supplement/Vitamin (Epocrates.com, 2018)	Essential component and participant is physiologic systems and reactions **specifically for healthy muscles and bones** and **the relief of heartburn or indigestion.** (Epocrates.com, 2018)
Loperamide 2mg by feeding tube, B.I.D	Antidiarrheal	Opioid agonist for treating diarrhea. **Adjunctive therapy of acute diarrhea.** Chronic diarrhea associated with inflammatory bowel disease. Decreases the volume of ileostomy drainage. (Vallerand, 2016)
Propanolol 20mg Q 8hrs by feeding tube, Q.D PRN	Beta Blocker	Migraine prophylaxis, congestive heart failure, **hypertension**, angina (Epocrates.com, 2018)
Bromocriptine 2.5mg by feeding tube, B.I.D	Dopamine Agonist	Treatment of acromegaly, hyperprolactinemia, Parkinson's disease, and **neuroleptic malignant syndrome. (Vallerand, 2016)**
Acetaminophen 650mg Q 4hr by feeding tube, PRN	Analgesic	Treatment of: **Mild to moderate pain, fever.** PO: Treatment of: Inflammatory disorders including rheumatoid arthritis (including juvenile) and osteoarthritis, Dysmenorrhea. IV: Moderate to severe pain with opioid analgesics. (Vallerand, 2016)
Lacosamide 200mg by Feeding tube, B.I.D	Antiepileptic/Anticonvulsant	Treatment of **partial-onset seizures as either monotherapy or adjunctive therapy.** (Vallerand, 2016)
Acetylcysteine 2000mg/ml (20%) inhaled solution T.I.D, PRN	Mucolytic	Antidote for the management of potentially hepatotoxic overdose of acetaminophen. **Mucolytic in the management of conditions associated with thick viscid mucous secretions.** Prevention of radiocontrast-induced renal dysfunction (oral). (Vallerand, 2016)
Famotidine 20 mg by Feeding tube, B.I.D.	Histamine 2 Blockers	Peptic Ulcer Disease, duodenal ulcer prophylaxis, duodenal ulcer maintenance, **Gastroesophageal Reflux Disease**, intractable ulcer maintenance and prophylaxis, gastric ulcer prophylaxis and maintenance, **hypersecretory conditions of the gastrointestinal tract.**

		(Vallerand, 2016)
Lorazepam 2mg by Feeding tube, T.I.D.	Benzodiazepine	**Anxiety disorder** (oral). Preoperative sedation (injection). Decreases preoperative anxiety and provides amnesia. Unlabeled Use: IV: Antiemetic prior to chemotherapy. Insomn panic disorder, as an adjunct with acute mania or acute psychosis. (Vallerand, 2016)
Chlorohexidine 0.12% 15 ml topically by mouth B.I.D	Bacteriostatic	**Gingivitis and periodontitis.** (Epocrates.com, 2018)
Carboxymethylcellulose 0.5% ophthalmic drops, 2 drops both eyes B.I.D.	Ocular Demulcent	Used in treatment of **dry eye and irritation.** (Epocrates.com,
Levetiracetam 2000mg by Feeding tube, B.I.D	Anticonvulsant	**Partial onset seizures. Primary generalized tonic-clonic seizures.** Myoclonic seizures in patients with juvenile myoclonic **epilepsy**. (Vallerand, 2016)
Albuterol 2.5 mg/3ml solution Inhaled, T.I.D.	Beta-2 Agonists	Used as a **bronchodilator to control and prevent reversible airway obstruction** caused by asthma or COPD. **Used as a quick-relief agent for acute bronchospasm** and for prevention of exercise-induced bronchospasm. Used as a long -term control agent in patients with chronic/persistent bronchospasm. (Vallerand, 2016)
Lamotrigine 250 mg by feeding tube, T.I.D.	Anticonvulsant	Partial seizures, maintenance of bipolar 1 disorder, **Primary generalized tonic-clonic seizures.** Lennox-Gastaut Disorder, migraine headache with aura prophlyaxis. (Vallerand, 2016)
Levalbuterol 0.63 mg/3ml solution Inhaled T.	Beta 2 Agonists	**Bronchospasm due to reversible airway disease** (short-term control agent). (Vallerand, 2016)
Nystatin 100,000 unit/5ml oral solution	Antifungal	Binds to fungal cell membrane, allowing leakage of cellular contents. **Fungistatic or fungicidal action. Spectrum: Active against most pathogenic Candida species, including C. albicans.** (Vallerand, 2016)
Phenytoin 4 mg by Feeding Tube, B.I.D	Hydantoins	**Treatment/prevention of tonic-clonic** (grand mal) **seizures and complex partial seizures.** Unlabeled Use: As an antiarrhythmic, particularly for ventricular arrhythmias associated with digoxin toxicity, prolonged QT interval, and surgical repair of congenital heart diseases in children. Management of neuropathic pain, including trigeminal neuralgia. (Vallerand, 2016)
Polyethylene Glycol 17 gram by Feeding tube PRN	Osmotic Laxative	Treatment of **occasional constipation.** (Epocrates.com)

Medication Data Sheet

(Scheduled medications to be given to your client during your clinical shift) QSEN: Safety, Evidence Based Practice. SLO: 2, 4

Name, Dose, & Schedule	Drug Classification, Expected action & indication for use	Side Effects/ Adverse Reactions (List 3-5)	Medication/Food Interactions (List 3-5)	Nursing Administration Considerations & Assessments (List 3-5)	Client education & Evaluation of Medication Effectiveness (List 3-5)
Name: ylcysteine/ adcte, omyst ng/ml)) t : ed ule:), PRN	**Classification:** Mucolytic **Mechanism of Action:** Decreases the buildup of a hepatotoxic metabolite in acetaminophen overdosage. IV: Decreases the buildup of a hepatotoxic metabolite in acetaminophen overdosage. Inhaln: Degrades mucus, allowing easier mobilization and expectoration. Therapeutic Effects: PO: Prevention or lessening of liver damage following acetaminophen overdose. Inhaln: Lowers the viscosity of mucus. **Indication for use:** Antidote for the management of potentially hepatotoxic overdose of acetaminophen (administer within 8–10 hours [IV] or 24 hours [PO] of ingestion). Inhaln: Mucolytic in the management of conditions associated with thick viscid mucous secretions. Unlabeled Use: Prevention of	Drowsiness, vasodilation, **tachycardia**, hypotension, rhinorrhea, **bronchospasm, bronchial/tracheal irritation, chest tightness, increased secretions, nausea, vomiting, stomatitis,** flushing, rash, clamminess, pruritus, urticarial (rash with welting). Misc: allergic reactions (primarily with IV), including Anaphylaxis, Angioedema, chills, **fever**. (Vallerand, 2016)	Activated charcoal may adsorb orally administered acetylcysteine and decreased its effectiveness as an antidote. (Vallerand, 2016)	Antidote in Acetaminophen Overdose: Assess type, amount, and time of acetaminophen ingestion. Assess plasma acetaminophen levels. Initial levels are drawn at least 4 hr after ingestion of acetaminophen. Plasma level determinations may be difficult to interpret following ingestion of extended-release preparations. Do not wait for results to administer dose. • IV: Assess for anaphylaxis. Erythema and flushing are common, usually occurring 30–60 min after initiating infusion, and may resolve with continued administration. If rash, hypotension, wheezing, or dyspnea occur, initiate treatment for anaphylaxis (antihistamine and epinephrine). Interrupt acetylcysteine infusion until symptoms resolve and restart carefully. If anaphylaxsis recurs, discontinue acetylcysteine and use alternative form of treatment. • Assess patient for nausea, vomiting, and urticaria. Notify health care professional if these occur. • Mucolytic: Assess respiratory function (lung sounds, dyspnea) and color, amount, and consistency of secretions before and immediately following treatment to determine effectiveness of therapy. • Lab Test Considerations: Monitor AST, ALT, and bilirubin levels along with prothrombin time every 24 hr for 96 hr in patients with plasma acetaminophen levels indicating potential hepatotoxicity. • Monitor cardiac and renal function (creatinine,	**Client Education:** Acetaminophen Overdose: Explain purpose of medicatio to patient. • Inhaln: Instruct patient to clear airway by coughing deeply before takin aerosol treatment. • Inform patient that unpleasant odor c this drug becomes less noticeable as treatment progresses and medicine dissipates. **Evaluation of Medication Effectiveness:** • Decreased acetaminophen levels. • No further increase in hepat damage during acetaminophe overdose therapy. • Decreased dyspnea and clearing of lung sounds when used as a mucolytic. • Prevention of radiocontrast-induced renal dysfunction. (Vallerand, 2016)

			ofloxacin, olanzapine, orphenadrine, oxacillin, oxazepam, oxcarbazepine, paliperidone, paroxetine, passionflower, penicillin G, penicillin V, pentobarbital, perampanel, phendimetrazine, phenelzine, pheniramine, phenobarbital, phentermine, **phenytoin**, physostigmine, pimozide, piperacillin, pramipexole pregabalin, primidone, procarbazine, prochlorperazine, protriptyline, pyridostigmine, pyrilamine, pyrimethamine, quetiapine, quinine, ramelteon, risperidone, rivastigmine, ropinirole, rotigotine transdermal, rufinamide, scopolamine, secobarbital, selegiline transdermal, sertraline, sevoflurane, tacrolimus, tasimelteon, temazepam, tetrabenazine, theophylline, tiagabine, ticarcillin, tizanidine, tolcapone, topiramate, tranylcypromine, trazodone, triamcinolone, triazolam, trifluoperazine, trimipramine, triprolidine, triptorelin, valbenazine, valerian, valproic acid, venlafaxine, vigabatrin, vilazodone, ziprasidone, and zonisamide. (Epocrates.com, 2018)		

			lauroxil asenapine, baclofen, baclofen intrathecal, benzphetamine, betamethasone, brexpiprazole, brimonidine ophthalmic brivaracetam, bromocriptine, brompheniramine, bupropion, buspirone, busulfan, butabarbital, butalbital, calendula, cannabidiol, carbamazepine, carbinoxamine, cariprazine, carisoprodol, cetirizine, chamomile, German chlordiazepoxide chloroquine, chlorpheniramine, chlorzoxazone, ciprofloxacin, citalopram, clemastine, clobazam, clomipramine, clonazepam, clonidine, clorazepate, clozapine, cortisone, cyclizine, cyclobenzaprine, cyclosporine, cyproheptadine, dantrolene, deflazacort, delafloxacin, desipramine, desvenlafaxine, deutetrabenazine, dexamethasone, dexmethylphenidate, dextroamphetamine, dichloralphenazone, dichlorphenamide, dicloxacillin, diethylpropion, difenoxin, dimenhydrinate, diphenhydramine, diphenoxylate, donepezil, doripenem, doxepin, dronabinol, duloxetine, edrophonium, efavirenz, enflurane, enzalutamide,		irritability; acting aggressive; being angry or violent; acting on dangerous impulses; an extreme increase in activity and talking; other unusual changes in behavior or mood or if skin rash occur. • Advise patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult wi health care professional befor taking other medications. • Instruct patient to notify health care professional of medication regimen prior to treatment or surgery. • Rep: Advise female patients to notify health care professional if pregnancy is planned or suspected or if breast feeding. Encourage pregnant patients to enroll in the North American Antiepileptic Drug (NAAED) Pregnancy Registry by callin 1-888-233-2334; information is available at www.aedpregnancyregistry.o . • Advise patient to carry identification describing disease process and medicati regimen at all times. **Evaluation of Medication Effectiveness:** Decrease in th frequency of or cessation of seizures. (Vallerand, 2016)

	radiocontrast-induced renal dysfunction (oral). (Vallerand, 2016)			BUN), serum glucose, and electrolytes. Maintain fluid and electrolyte balance, correct hypoglycemia, and administer vitamin K or fresh frozen plasma or clotting factor concentrate if prothrombin time ratio exceeds 1.5 or 3, respectively. (Vallerand, 2016)	
Drug Name: Levetiracetam/ Keppra Dose: 2000 mg Route: Feeding Tube Schedule: B.I.D	**Classification:** Pyrrolidines/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. Therapeutic Effects: Decreased incidence and severity of seizures. **Indication for use:** Partial onset seizures (adjunct). Primary generalized tonic-clonic seizures (adjunct) (immediate-release and injection only). Myoclonic seizures in patients with juvenile myoclonic epilepsy (adjunct) (immediate-release and injection only). (Vallerand, 2016)	Suicidal thoughts, aggression, **agitation**, anger, **anxiety**, apathy, depersonalization, depression, dizziness, drowsiness, fatigue, hostility, **irritability**, personality disorder, psychosis, weakness, drowsiness, **fatigue**, **hyperkinesisa**, **hypertension**, coordination difficulties (adults only), **Stevens-Johnson Syndrome**, Toxic Epidermal Necrolysis, Agranulocytosis, **anemia**, eosinophilia, neutropenia, Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS). (Vallerand, 2016)	**Avoid/Use Alternative** Codeine, doxylamine, ethanol, ginkgo, hydrocodone, kava, sodium oxybate, thalidomide, and trimethobenzamide. **Monitor/Modify Tx** Aldesleukin, alfentanil, buprenorphine, butorphanol, chlorpromazine, desflurane, dexmedetomidine, diazepam, dihydrocodeine, droperidol eszopiclone, fentanyl, fluphenazine, flurazepam, hydromorphone, hydroxyzine, levorphanol, lorazepam, meperidine, methadone, midazolam, mirtazapine, morphine, nalbuphine, nelarabine, opium rectal, oxybutynin, oxycodone, oxymorphone, pentazocine, perphenazine, propofol, quazepam, remifentanil, sufentanil, suvorexant, tapentadol, thioridazine, thiothixene, tramadol, zaleplon, ziconotide, zolpidem **Caution Advised:** acrivastine, alprazolam, aminophylline, amitriptyline, amoxapine, amoxicillin, amphetamine, ampicillin, apalutamide, apomorphine, aripiprazole, aripiprazole	Assess location, duration, and characteristics of seizure activity. • Assess patient for CNS adverse effects throughout therapy. These adverse effects are categorized as somnolence and fatigue (asthenia), coordination difficulties (ataxia, abnormal gait, or incoordination), and behavioral abnormalities (agitation, hostility, anxiety, apathy, emotional lability, depersonalization, depression) and usually occur during the first 4 wk of therapy. • Monitor mood changes. Assess for suicidal tendencies, especially during early therapy. Restrict amount of drug available to patient. • Assess for rash periodically during therapy. May cause Stevens-Johnson syndrome. Discontinue therapy if severe or if accompanied with fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and/or eosinophilia. • Pedi: Monitor patients 1 month to <4 years of age for increases in diastolic BP. • Lab Test Considerations: May cause ↓ RBC and WBC and abnormal liver function tests. (Vallerand, 2016)	Client Education: • Instruct patient to take medication as directed. Pedi: Explain to parents the importance of using calibrate measuring device for accurat dosing. Take missed doses as soon as possible unless almos time for next dose. Do not double doses. Do not discontinue abruptly; may cause increase in frequency o seizures. Advise patient to re the Medication Guide prior t starting therapy and with eac Rx refill in case of changes. • May cause dizziness and somnolence. Caution patient avoid driving or activities requiring alertness until response to medication is known. Do not resume drivin until physician gives clearanc based on control of seizure disorder. • Advise patient and family t notify health care professiona if thoughts about suicide or dying, attempts to commit suicide; new or worse depression; new or worse anxiety; feeling very agitated or restless; panic attacks; trouble sleeping; new or wors

Drug Name: Albuterol Dose: 2.5 mg/3ml solution Route: Inhaled Schedule: T.I.D	**Classification:** Beta-2 Adrenergic/Beta 2 Agonist **Mechanism of Action:** Binds to beta2-adrenergic receptors in airway smooth muscle, leading to activation of adenyl cyclase and increased levels of cyclic-3', 5'-adenosine monophosphate (cAMP). Increases in cAMP activate kinases, which inhibit the phosphorylation of myosin and decrease intracellular calcium. Decreased intracellular calcium relaxes smooth muscle airways. Relaxation of airway smooth muscle with subsequent bronchodilation. Relatively selective for beta2 (pulmonary) receptors. Indication for use: Used as a bronchodilator to control and prevent reversible airway obstruction caused by asthma or COPD. Inhaln: Used as a quick-relief agent for acute bronchospasm and for prevention of exercise-induced bronchospasm. PO: Used as a long-term control agent in patients with chronic/persistent bronchospasm.	**Nervousness, restlessness, tremor,** headache, **insomnia** (Pedi: occurs more frequently in young children than adults), hyperactivity in children, **Paradoxical Bronchospasm** (excessive use of inhalers), chest pain, **palpitations,** angina, arrhythmias, **hypertension, nausea, vomiting,** hyperglycemia, **hypokalemia.** (Vallerand, 2016)	Concurrent use with other adrenergic agents will have ↑ adrenergic side effects. Use with MAO inhibitors may lead to hypertensive crisis. Beta blockers may negate therapeutic effect. May ↓ serum digoxin levels. Cardiovascular effects are potentiated in patients receiving tricyclic antidepressants. Risk of hypokalemia ↑ concurrent use of potassium-losing diuretics. Hypokalemia ↑ the risk of digoxin toxicity. Use with caffeine-containing herbs (cola nut, guarana, tea, coffee) ↑ stimulant effect. (Vallerand, 2016)	• Assess lung sounds, pulse, and BP before administration and during peak of medication. Note amount, color, and character of sputum produced. • Monitor pulmonary function tests before initiating therapy and periodically during therapy. • Observe for paradoxical bronchospasm (wheezing). If condition occurs, withhold medication and notify health care professional immediately. • Lab Test Considerations: May cause transient ↓ in serum potassium concentrations with nebulization or higher-than-recommended doses. (Vallerand, 2016)	**Client Education:** Instruct patient to take albuterol as directed. If on a scheduled dosing regimen, take missed dose as soon as remembered, spacing remaining doses at regular intervals. Do not double doses or increase the dose or frequency of doses. Caution patient not to exceed recommended dose; may cau adverse effects, paradoxical bronchospasm (more likely with first dose from new canister), or loss of effectiveness of medication. • Instruct patient to contact health care professional immediately if shortness of breath is not relieved by medication or is accompanie by diaphoresis, dizziness, palpitations, or chest pain. • Instruct patient to prime uni with 4 sprays before using an to discard canister after 200 sprays. Actuators should not changed among products. • Inform patient that these products contain hydrofluoralkane (HFA) and the propellant and are described as non-CFC or CF free (contain no chlorofluorocarbons). • Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products

	(Vallerand, 2016)				being taken and to consult health care professional befo taking any OTC medications alcoholic beverages concurrently with this therap Caution patient also to avoid smoking and other respirator irritants. • Inform patient that albutero may cause an unusual or bad taste. • Inhaln: Instruct patient in th proper use of the metered-do inhaler or nebulizer (See Appendix D). • Advise patients to use albuterol first if using other inhalation medications and allow 5 min to elapse before administering other inhalant medications unless otherwise directed. • Advise patient to rinse mou with water after each inhalation dose to minimize dry mouth and clean the mouthpiece with water at lea once a week. • Instruct patient to notify health care professional if the is no response to the usual do or if contents of one canister are used in less than 2 wk. Asthma and treatment regime should be re-evaluated and corticosteroids should be considered. Need for increas use to treat symptoms indicat

					decrease in asthma control an need to re-evaluate patient's therapy. **Evaluation of Medication Effectiveness:** • Prevention o relief of bronchospasm. (Vallerand, 2016)
Drug Name: LamoTRigine/ LaMIctal Dose: 250 mg Route: Feeding Tube Schedule: T.I.D	Classification: **Mechanism of Action**: Stabilizes neuronal membranes by inhibiting sodium transport. **Therapeutic Effects:** Decreased incidence of seizures. Delayed time to recurrence of mood episodes in bipolar disorder. Indication for use: Adjunct treatment of partial seizures in adults and children with epilepsy (immediate-release, extended-release, chewable, and orally disintegrating tablets). Lennox-Gastaut syndrome (immediate-release, chewable, and orally disintegrating tablets only). Adjunct treatment of primary generalized tonic-clonic seizures in adults and children (immediate-release, extended-release, chewable, and orally disintegrating tablets). Conversion to monotherapy in adults with partial seizures receiving carbamazepine,	**Aseptic Meningitis,** suicidal thoughts, ataxia, dizziness, headache, **behavior changes,** depression, drowsiness, **insomnia, tremor,** blurred vision, double vision, **rhinitis, hepatic failure, nausea, vomiting,** dyspepsia, abdominal pain, vaginitis, **photosensitivity rash,** (higher incidence in children, patients taking valproic acid, high initial doses, or rapid dose increases), arthralgia, hemophagocytic lymphohistiocytosis, blood dyscrasias, **status epilepticus, withdrawal seizures, Multi-organ hypersensitivity reactions, Stevens-Johnson Syndrome.** (Vallerand, 2016)	Concurrent use with carbamazepine may ↑ levels of an active metabolite of carbamazepine. Concurrent use with drugs that induce glucuronidation, including phenobarbital, phenytoin, primidone, carbamazepine, estrogen-containing oral contraceptives rifampin, lopinavir/ritonavir, or atazanavir/ritonavir may ↓ levels; lamotrigine dose adjustments may be necessary when starting and stopping oral contraceptive or atazanavir/ritonavir therapy. Concurrent use with drugs that inhibit glucuronidation, including valproic acid, may ↑ levels and ↑ incidence of rash; may also ↓ valproic acid levels (↓ lamotrigine dose by at least 50%). (Vallerand, 2016)	• Monitor closely for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior or depression. • Assess patient for skin rash frequently during therapy. Discontinue lamotrigine at first sign of rash; may be life-threatening. Stevens-Johnson syndrome or toxic epidermal necrolysis may develop. Rash usually occurs during the initial 2–8 wk of therapy and is more frequent in patients taking multiple antiepileptic agents, especially valproic acid, and much more frequent in patients < 16 yr. • Monitor for signs and symptoms of multiorgan hypersensitivity reactions—DRESS (rash, fever, lymphadenopathy). May be associated with other organ involvement (hepatitis, hepatic failure, blood dyscrasias, acute multiorgan failure). If cause cannot be determined, discontinue lamotrigine immediately. • Seizures: Assess location, duration, and characteristics of seizure activity. • Bipolar disorders: Assess mood, ideation, and behaviors frequently. Initiate suicide precautions if indicated. • Lab Test Considerations: Lamotrigine plasma concentrations may be	**Client Education:** • Instruct patient to take medication exactly as directed. Take missed doses as soon as possible unless almost time f next dose. Do not double doses. Do not discontinue abruptly; may cause increase frequency of seizures. Instruc patient to read the Medicatio Guide before starting and wit each Rx refill, changes may occur. • Advise patient to notify health care professional immediately if skin rash, feve or swollen lymph glands occ or if frequency of seizures increases. • May cause dizziness, drowsiness, and blurred visio Caution patient to avoid driving or activities requiring alertness until response to medication is known. Do not resume driving until physicia gives clearance based on control of seizure disorder. • Caution patient to wear sunscreen and protective clothing to prevent photosensitivity reactions.

	phenytoin, phenobarbital, primidone, or valproate as the single antiepileptic drug (immediate-release, extended-release, chewable, and orally disintegrating tablets only). Maintenance treatment of bipolar disorder (immediate-release, chewable, and orally disintegrating tablets only). (Vallerand, 2016)			monitored periodically during therapy, especially in patients concurrently taking other anticonvulsants. Therapeutic plasma concentration range has not been established, proposed therapeutic range: 1–5 mcg/mL. • May cause false-positive results for phencyclidine (PCP) in some rapid urine drug screens. Use a more specific analytical method to confirm results. (Vallerand, 2016)	• Advise patient and family t notify health care professiona if thoughts about suicide or dying, attempts to commit suicide; new or worse depression; new or worse anxiety; feeling very agitated or restless; panic attacks; trouble sleeping; new or wor irritability; acting aggressive; being angry or violent; acting on dangerous impulses; an extreme increase in activity and talking; other unusual changes in behavior or mood or if symptoms of aseptic meningitis (headache, fever, nausea, vomiting, and nuchal rigidity, rash, photophobia, myalgia, chills, altered consciousness, somnolence) occur. • Advise patient to notify health care professional if pregnancy is planned or suspected or if breast feeding • Instruct patient to notify health care professional of medication regimen prior to treatment or surgery. • Rep: Advise female patient to use a nonhormonal form o contraception while taking lamotrigine, to avoid breast feeding, and to notify health care professional if pregnanc is planned or suspected or if breast feeding. Encourage patients who become pregnar to enroll in the North

					American Antiepileptic Drug Pregnancy Registry. Must be done by patients themselves l calling 1-888-233-2334 or on the website http://www.aedpregnancyreg ry.org. • Advise patient to carry identification at all times describing disease process an medication regimen. **Evaluation of Medication Effectiveness:** • Decrease in the frequency o or cessation of seizures. • Delay in time to occurrence c mood episodes (depression, mania, hypomania, mixed episodes) in patients with Bipolar I disorder. (Valleranc 2016)
Drug Name: Lacosamide/ Vimpat Dose: 200 mg Route: Feeding Tube Schedule: B.I.D	Classification: **Mechanism of Action:** Mechanism is not known, but may involve enhancement of slow inactivation of sodium channels with resultant membrane stabilization. Therapeutic Effects: Decreased incidence and severity of partial-onset seizures. **Indication for use:** Treatment of partial-onset seizures as either monotherapy or adjunctive therapy. (Vallerand, 2016)	Suicidal thoughts, dizziness, headache, hallucinations, **syncope,** vertigo, diplopia, **atrial fibrillation/flutter, bradycardia, PR prolongation, heart block**, Stevens-Johnson Syndrome, Toxic Epidermal Necrolysis, Agranulocytosis, rash, **nausea, vomiting, withdrawal seizures, tremor**, ataxia, **physical dependence, psychological dependence, multi-organ hypersensitivity reactions**, Drug Reaction with Eosinophilia and	Use cautiously with other drugs that affect cardiac conduction. (Vallerand, 2016)	• Assess location, duration, and characteristics of seizure activity. Institute seizure precautions. • Monitor closely for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior or depression. • Assess patient for skin rash frequently during therapy. Discontinue at first sign of rash; may be life-threatening. Stevens-Johnson syndrome may develop. Treat symptomatically; may recur once treatment is stopped. • IV: Assess ECG prior to therapy in patients with pre-existing cardiac disease. Monitor patients with cardiac conduction problems, on medications that prolong PR interval, or with severe	**Client Education:** • Instruct patient to take lacosamide around the clock, as directed. Medication should be gradually discontinued over a least 1 wk to prevent seizures Advise patient to read the Medication Guide before starting therapy and with eacl Rx refill. • May cause dizziness, ataxia and syncope. Caution patient to avoid driving or other activities requiring alertness until response to medication i known. Tell patient not to resume driving until physicia gives clearance based on control of seizure disorder. If syncope occurs, advise patier

		Systemic Symptoms (DRESS). (Vallerand, 2016)		cardiac disease (myocardial ischemia, heart failure) closely, as IV lacosamide may cause bradycardia or AV block. • Lab Test Considerations: May cause ↑ALT, which may return to normal without treatment. • Monitor CBC and platelets periodically during therapy. (Vallerand, 2016)	to lay down with legs raised until recovered and notify health care professional. • Inform patients and families of risk of suicidal thoughts ar behavior and advise that behavioral changes, emergen or worsening signs and symptoms of depression, unusual changes in mood, or emergence of suicidal thoughts, behavior, or though of self-harm should be report to health care professional immediately. • Instruct patient to notify health care professional if signs of multiorgan hypersensitivity reactions (fever, rash, fatigue, jaundice dark urine) occur. • Advise patient to consult health care professional befo taking other Rx, OTC, or herbal preparation and to avo taking alcohol or other CNS depressants concurrently wit lacosamide. • Rep: Advise female patients to notify health care professional if pregnancy is planned or suspected or if breast feeding. Encourage pregnant patients to enroll in the pregnancy registry by calling 1-888-233--2334, call must be made by patient. Information on registry can b found at the website

					http://www.aedpregnancyregistry.org/. **Evaluation of Medication Effectiveness:** Decreased seizure activity. (Vallerand, 2016)
Drug Name: Loperamide/ Imodium Dose: 2 mg Route: Feeding Tube Schedule: T.I.D	Classification: Antidiarrheal **Mechanism of Action:** Inhibits peristalsis and prolongs transit time by a direct effect on nerves in the intestinal muscle wall. Reduces fecal volume, increases fecal viscosity and bulk while diminishing loss of fluid and electrolytes. Therapeutic Effects: Relief of diarrhea. **Indication for use:** Adjunctive therapy of acute diarrhea. Chronic diarrhea associated with inflammatory bowel disease. Decreases the volume of ileostomy drainage. (Vallerand, 2016)	Drowsiness, dizziness, **constipation, abdominal pain/distention/discomfort, dry mouth, nausea, vomiting,** toxic megacolon **paralytic ileus,** hypersensitivity rxn, angioedema, anaphylaxis/anaphylactoid rxn, toxic epidermal necrolysis, Stevens-Johnson syndrome, erythema multiforme, **urinary retention,** heat stroke, allergic reactions. (Epocrates.com, 2018)	↑ CNS depression with other CNS depressants, including alcohol, antihistamines, opioid analgesics, and sedative/hypnotics. ↑ anticholinergic properties with other drugs having anticholinergic properties, including antidepressants and antihistamines. Drug-Natural Products: Kava-kava, valerian, skullcap, chamomile, or hops can ↑ CNS depression. (Vallerand, 2016)	• Assess frequency and consistency of stools and bowel sounds prior to and during therapy. • Assess fluid and electrolyte balance and skin turgor for dehydration. (Vallerand, 2016)	**Client Education:** Instruct patient to take medication as directed. Do not take missed doses, and do not double doses. In acute diarrhea, medication may be ordered after each unformed stool. Advise patient not to exceed the maximum number of doses. • May cause drowsiness. Advise patient to avoid drivir or other activities requiring alertness until response to dr is known. • Advise patient that frequent mouth rinses, good oral hygiene, and sugarless gum o candy may relieve dry mouth • Caution patient to avoid using alcohol and other CNS depressants concurrently with this medication. • Instruct patient to notify health care professional if diarrhea persists or if fever, abdominal pain, or distention occurs. **Evaluation of Medication Effectiveness:** • Decrease in diarrhea. • In acute diarrhea, treatment

					should be discontinued if no improvement is seen in 48 hr • In chronic diarrhea, if no improvement has occurred after at least 10 days of treatment with maximum dos loperamide is unlikely to be effective. (Vallerand, 2016)
Drug Name: Phenytoin/ Dilantin Dose: 4 mg Route: Feeding Tube Schedule: B.I.D	**Classification:** Hydantoins **Mechanism of Action:** Limits seizure propagation by altering ion transport. May also decrease synaptic transmission. Antiarrhythmic properties as a result of shortening the action potential and decreasing automaticity. Therapeutic Effects: Diminished seizure activity. Termination of ventricular arrhythmias. **Indication for use:** Treatment/prevention of tonic-clonic (grand mal) seizures and complex partial seizures. Unlabeled Use: As an antiarrhythmic, particularly for ventricular arrhythmias associated with digoxin toxicity, prolonged QT interval, and surgical repair of congenital heart diseases in children. Management of neuropathic pain,	Most reactions are with chronic use of drug: Suicidal thoughts, ataxia, **agitation, confusion,** dizziness, drowsiness, dysarthria, **dyskinesia, extrapyramidal syndrome,** headache, **insomnia,** vertigo, **weakness,** diplopia, **nystagmus,** hypotension (↑ with IV phenytoin), **tachycardia, cardiovascular collapse, ventricular fibrillation, AV conduction disturbance, Acute Hepatic Failure, gingival hyperplasia, nausea, constipation, drug-induced hepatitis, vomiting,** Stevens-Johnson Syndrome, Toxic Epidermal Necrolysis, hypertrichosis, rash, exfoliative dermatitis, pruritus, purple glove syndrome, Agranulocytosis, Aplastic Anemia, leukopenia,	May ↓ the effects of delavirdine, resulting in loss of virologic response and potential resistant (concurrent use contraindicated). Acute ingestion of alcohol, amiodarone, benzodiazepines, capecitabine, chloramphenicol, chlordiazepoxide, cimetidine, disulfiram estrogens, ethosuximide, felbamate, fluconazole, fluorouracil, fluoxetine, fluvastatin, fluvoxamine, halothane, isoniazid, itraconazole, ketoconazole, methylphenidate, miconazole, oxcarbazepine, omeprazole, phenothiazines, salicylates, sertraline, succinamides, sulfonamides, tolbutamide, trazodone, voriconazole and warfarin may ↑ levels. Chronic ingestion of alcohol, barbiturates, carbamazepine, diazepam, diazoxide, fosamprenavir, nelfinavir, reserpine, rifampin, ritonavir, sucralfate, theophylline, and vigabatrin may ↓ levels. May	• Monitor closely for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior or depression. • Assess oral hygiene. Vigorous cleaning beginning within 10 days of initiation of phenytoin therapy may help control gingival hyperplasia. • Assess patient for phenytoin hypersensitivity syndrome (fever, skin rash, lymphadenopathy). Rash usually occurs within the first 2 wk of therapy. Hypersensitivity syndrome usually occurs at 3–8 wk but may occur up to 12 wk after initiation of therapy. May lead to renal failure, rhabdomyolysis, or hepatic necrosis; may be fatal. • Observe patient for development of rash. Discontinue phenytoin at the first sign of skin reactions. Serious adverse reactions such as exfoliative, purpuric, or bullous rashes or the development of lupus erythematosus, Stevens-Johnson syndrome, or toxic epidermal necrolysis preclude further use of phenytoin or fosphenytoin. Stevens-Johnson syndrome and toxic epidermal necrolysis are significantly more common in patients with a particular human leukocyte antigen (HLA) allele, HLA-B*1502 (occurs almost exclusively in patients with Asian ancestry, including Han Chinese,	**Client Education:** • Instruct patient to take medication as directed, at the same time eac day. If a dose is missed from once-a-day schedule, take as soon as possible and return tc regular dosing schedule. If taking several doses a day, ta missed dose as soon as possible within 4 hr of next scheduled dose; do not doubl doses. Consult health care professional if doses are missed for 2 consecutive day: Abrupt withdrawal may lead status epilepticus. • May cause drowsiness or dizziness. Caution patient to avoid driving or other activiti requiring alertness until response to medication is known. Do not resume drivin until physician gives clearanc based on control of seizure disorder. • Caution patient to avoid alcohol and CNS depressants Advise patient to notify healt care professional of all Rx or OTC medications, vitamins, herbal products being taken

	including trigeminal neuralgia. (Vallerand, 2016)	megaloblastic anemia, thrombocytopenia, **osteomalacia, osteoporosis,** Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS), **fever,** lymphadenopathy. (Vallerand, 2016)	↓ the effects of albendazole, amiodarone, atorvastatin, benzodiazepines, carbamazepine, chlorpropamide, clozapine, cyclosporine, digoxin, efavirenz, estrogens, felbamate fluvastatin, indinavir, lamotrigine, lopinavir/ritonavir, methadone, mexiletine, nelfinavir, nifedipine, nimodipine, nisoldipine, oxcarbazepine, oral contraceptives, quetiapine, quinidine, rifampin, ritonavir, saquinavir, simvastatin, tacrolimus, theophylline, topiramate, verapamil, and warfarin. IV phenytoin and dopamine may cause additive hypotension. Additive CNS depression with other CNS depressants, including alcohol, antihistamines, antidepressants, opioids, and sedative/hypnotics. Antacids may ↓ absorption of orally administered phenytoin. ↑ systemic clearance of antileukemic drugs teniposide and methotrexate which has been associated with a worse event free survival, phenytoin use is not recommended in children undergoing chemotherapy for acute lymphocytic leukemia. Drug-Natural Products: St. John's wort may ↓ levels. Drug-Food: Phenytoin may ↓	Filipinos, Malaysians, South Asian Indians, and Thais). Avoid using phenytoin or fosphenytoin as alternatives to carbamazepine for patients who test positive. If less serious skin eruptions (measles-like or scarlatiniform) occur, phenytoin may be resumed after complete clearing of the rash. If rash reappears, further use of fosphenytoin or phenytoin should be avoided. • Assess mental status (orientation, mood, behavior) before and periodically during therapy. Monitor closely for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior or depression. • Seizures: Assess location, duration, frequency, and characteristics of seizure activity. EEG may be monitored periodically throughout therapy. • Monitor BP, ECG, and respiratory function continuously during administration of IV phenytoin and throughout period when peak serum phenytoin levels occur (15–30 min after administration). • Arrhythmias: Monitor ECG continuously during treatment of arrhythmias. • Lab Test Considerations: Monitor CBC, serum calcium, albumin, and hepatic function tests prior to and monthly for the first several months, then periodically during therapy. • May cause ↑ serum alkaline phosphatase, GGT, and glucose levels. • Monitor serum folate concentrations periodically during prolonged therapy. Toxicity and Overdose: Monitor serum phenytoin levels routinely. Therapeutic blood levels are 10–20 mcg/mL (8–15 mcg/mL in neonates) in patients with normal serum albumin and renal	and to consult with health car professional before taking other medications and alcoho • Instruct patient on importan of maintaining good dental hygiene and seeing dentist frequently for teeth cleaning t prevent tenderness, bleeding, and gingival hyperplasia. Institution of oral hygiene program within 10 days of initiation of phenytoin therap may minimize growth rate an severity of gingival enlargement. Patients under 2 yr of age and those taking doses >500 mg/day are at increased risk for gingival hyperplasia. • Advise patient that brands o phenytoin may not be equivalent. Check with healtl care professional if brand or dose form is changed. • Advise diabetic patients to monitor blood glucose carefully and to notify health care professional of significa changes. • Instruct patient to notify health care professional of medication regimen prior to treatment or surgery. • Advise patient not to take phenytoin within 2–3 hr of antacids. • Advise patient to carry

			absorption of folic acid. Concurrent administration of enteral tube feedings may ↓ phenytoin absorption. Folic acid may ↓levels. (Vallerand, 2016)	function. In patients with altered protein binding (neonates, patients with renal failure, hypoalbuminemia, acute trauma), free phenytoin serum concentrations should be monitored. Therapeutic serum free phenytoin levels are 1--2 mcg/mL. • Progressive signs and symptoms of phenytoin toxicity include nystagmus, ataxia, confusion, nausea, slurred speech, and dizziness. (Vallerand, 2016)	identification describing disease process and medicati regimen at all times. • Instruct patients that behavioral changes, skin rash fever, sore throat, mouth ulcers, easy bruising, petechiae, unusual bleeding, abdominal pain, chills, pale stools, dark urine, jaundice, severe nausea or vomiting, drowsiness, slurred speech, unsteady gait. swollen glands or persistent headache should be reported to health care professional immediately. Advise patient and family to notify health care professiona if thoughts about suicide or dying, attempts to commit suicide; new or worse depression; new or worse anxiety; feeling very agitated or restless; panic attacks; trouble sleeping; new or wors irritability; acting aggressive; being angry or violent; acting on dangerous impulses; an extreme increase in activity and talking, other unusual changes in behavior or mood occur. • Rep: Advise female patients to use an additional nonhormonal method of contraception during therapy and until next menstrual period. Instruct patient to notify health care professiona if pregnancy is planned or suspected. Encourage patient

					who become pregnant to enrc in the North American Antiepileptic Drug (NAAED) Pregnancy Registry by callin 1-888-233-2334 or on the we at www.aedpregnancyregistry.o . Enrollment must be done by patients themselves. • Emphasize the importance c routine exams to monitor progress. Patient should have routine physical exams, especially monitoring skin an lymph nodes, and EEG testin **Evaluation of Medication Effectiveness:** • Decrease or cessation of seizures without excessive sedation. • Suppression of arrhythmias. • Relief of neuropathic pain. (Vallerand, 2016)

Date: 10/15/2018 **Client Initials:** A.H. **Student Name:** Shaneil Singleton

Vitals Signs	BP: 118/84 HR 113 bpm RR 12 Temp 100.1 °F tympanic O2 Sat 96% RA/**LPM**
Pain	Client is nonverbal and does not communicate in other various ways. Client was noted to grimace and stiffen up when head of bed is elevated more than 50 degrees, during range of motion on his hips, and prolonged exposure to room temperature without blankets.
Neurological	Client is awake and lethargic. Client is not alert. Client responds to touch and sound. Client is not oriented to person, place, situation, or time. Client is nonverbal and cannot verbally communicate their needs, cannot write down their needs. Client is nonverbal and could not communicate in other ways except grimacing, jerking, and irregular, involuntary movement. Client was not able to perform hand grips, or foot pushes. Client has unaided sight. Client's pupils were equal and round, but did not react to light and did not accommodate.
Cardiac	Apical pulse 115 bpm, regular. Client's mucous membranes are pink. Radial and peripheral pulses are palpable. Jugular vein is not distended or visible. Client has no edema. Heart rhythm is regular. Client showed no calf tenderness.
Respiratory	Client has a tracheostomy and is vent-dependent, and their O2 stats are 96%. Client cannot cough or deep breathe on their own. Client's respirations were regular and even. Crackles bilaterally anteriorly and posteriorly. Client needs ongoing suctioning due to excessive respiratory secretions, both deep and superficial suctioning.
Gastrointestinal	Client has dysphagia, has their own teeth, and their mucous membranes are intact and moist. Client is not able to orally intake food at this time. Client has a feeding tube, it is a J-tube; Client is on continuous feeding 3 hours on 1 hour off at a rate of 4o ml/hour; 200ml a day. Client's abdomen is firm and there is no tenderness noted. Client is incontinent of bowel and bladder. Bowel sounds are present in all four quadrants and are hyperactive. Client's last bowel movement was on 10/15/18, loose/putty medium.
Genitourinary	Client is incontinent of bowel and bladder and has had urinary retention issues in the past. Client currently has a Foley catheter. Catheter tube is patent. Urine color is clear with no sediment or cloudiness.
Integument	Client's skin is intact, the color is regular, and their skin is warm to the touch. Clien's slin on abdomen is discolored and excoriated around feeding tube site. Client scores a 5 on the Braden Scale Risk for pressure ulcers.
Musculoskeletal	Client is not able to perform any activities of daily living. Client is nonambulatory. Client is a total assist of two with a Hoyer lift for a transfer. Client has irregular, extremity movements. Client has PROM exercises done three times a day for their upper and lower extremities.

Trach:

Times Suctioned: **Type of Trach suction:** **In-Line** / **Sterile**

Vent Settings:

RR	12	TV	500	HA	46	LA	10	PEEP	5	Mode	High Pressure
LMV		Sensitivity		3	Insp Time	0.9		FiO2	24%	O2	1 L
Keep O2 above		90	%								

Treatments Done? Yes.
Foot care Done? Yes.

PATHOPHYSIOLOGY: For each diagnosis below, **provide a 3-5 sentence** explanation of the pathophysiology of the problem. (**we count sentences**) QSEN: Evidence Based Practice, Informatics, Client Centered Care. SLO: 1, 2, 4

1. **Primary Diagnosis:**

(3-5 sentences)

PEA arrest with ROSC

A PEA cardiac arrest is a pulseless electrical activity myocardial infarction. Pulseless electrical activity (PEA), also known as electromechanical dissociation, refers to cardiac arrest in which the electrocardiogram shows a heart rhythm that should produce a pulse, but does not. Pulseless electrical activity is found initially in about 55% of people in cardiac arrest. In PEA, there is electrical activity, but the heart either does not contract or there are other reasons this results in an insufficient cardiac output to generate a pulse and supply blood to the organs. While PEA is classified as a form of cardiac arrest, significant cardiac output may still be present which may be determined and best visualized by bedside ultrasound. During the cardiac arrest the EKG will show electrical activity but the individual will not have a palpable pulse. In this situation there is decreased vascular resistance or stroke volume of the heart. The decreased left ventricular stroke volume or decreased vascular resistance is too weak to create a pulse that can be felt by medical staff. (Baldzizhar, Manuylova, Marchenko, Kryvalap & Carey, 2016)
Cardiopulmonary resuscitation is the first treatment for PEA, usually with epinephrine, while potential underlying causes are identified and treated. Survival is about 20%. Pressure effects associated with artificial ventilation may also contribute to significant reduction in cardiac output, resulting in a clinical diagnosis of PEA. PEA may be caused by Hypovolemia, Hypoxia which leads to insufficient blood perfusion to tissues in the body, Acidosis, Hyperkalemia and Hypokalemia which results in cardiac tissue damage, Hypoglycemia, Hypothermia, Drug overdose, Cardiac Tamponade, Tension pneumothorax, Thrombosis like myocardial infarction, pulmonary embolism, Tachycardia, Trauma such as hypovolemia from blood loss, and death. (Rebar, Ignatavicius & Workman, 2018)

2. **Diagnosis:**

(3-5 sentences)

Autonomic Instability

Autonomic instability is also known as autonomic dysreflexia and formerly known as autonomic hyperreflexia, and it is a lack of communication from the central nervous system to the autonomic nervous system and it can affect a small portion of the autonomic nervous system or the entire autonomic nervous system. This condition inhibits the communication of the brain to the involuntary actions of the body. This is a life-threatening, uninhibited sympathetic response of nervous system to noxious stimuli, resulting in sympathetic stimulation and hyperactivity. The most common causes of autonomic instability include bladder or bowel over-distension, from urinary retention and fecal compaction. The resulting sympathetic surge transmits through intact peripheral nerves, resulting in systemic vasoconstriction below the level of the spinal cord lesion usually caused by spinal cord injuries with lesions at or above the T6 spinal cord level, although it has been reported in patients with lesions as low as T10. The peripheral arterial vasoconstriction and hypertension activates the baroreceptors, resulting in a parasympathetic surge originating in the central nervous system to inhibit the sympathetic outflow; however, the parasympathetic signal is unable to transmit below the level of the spinal cord lesion. This results in bradycardia, vasodilation, flushing, pupillary constriction and nasal stuffiness above the spinal lesion, while there's piloerection, pale and cool skin below the lesion due to the prevailing sympathetic outflow. Autonomic dysreflexia can become chronic and recurrent in response to soft tissue pressure injuries or hemorrhoids. (Eldahan & Rabchevsky, 2018)

Initial treatment involves sitting the patient upright, removing any constrictive clothing rechecking blood pressure frequently, and then checking for and removing the inciting issue, which may require urinary catheterization or bowel dis-impaction and decompression. If systolic blood pressure remains elevated over 150 mm Hg after initial steps, fast-acting short-duration antihypertensives are considered. Long term therapy may include alpha blockers or calcium channel blockers. (Rebar, Ignatavicius & Workman, 2018)

Complications of severe acute hypertension from Autonomic Instability can include seizures, pulmonary edema, myocardial infarction, cerebral hemorrhage and injury, kidney injury, retinal eye-detachment, respiratory dysfunction, decreased intestinal motility, and cardiac dysrhythmias.
Symptoms include dizziness and orthostatic hypotension. inability to alter heart rate with exercise, or exercise intolerance, sweating above the lesion level, goosebumps, blurred vision, and headache. (Rebar, Ignatavicius & Workman, 2018)

3. **Diagnosis**

(3-5 sentences)

Anoxic encephalopathy/brain injury

Anoxic encephalopathy is a brain injury as a result of oxygen deprivation. Anoxic brain injury occurs when the entire brain is deprived of an adequate oxygen supply that usually starts out as hypoxia. Hypoxia induces neuronal cell death via apoptosis, leading to hypoxic brain injury and then to anoxic brain injury. Anoxic encephalopathy is largely a complication of cardiac arrest and is typically associated in oxygen deprivation in the neonate due to birth asphyxia. Severe cerebral hypoxia and anoxia is usually caused by traumatic events such as choking, drowning, strangulation, smoke inhalation, drug overdoses, crushing of the trachea, status asthmaticus, seizures, and shock. Symptoms of brain injury have various signs depending on the severity and areas affected in the brain, including altered level of consciousness, pupillary abnormalities, altered or absent gag reflex or corneal reflex, neurologic deficits, change in vital signs such as with respiration pattern, hypertension, bradycardia; hyperthermia or hypothermia, and sensory, vision or hearing impairment, headache, dizziness, anxiety, irritability, papillary signs, hemiparesis, coma, and lethargy. (Sekhon, Ainslie & Griesdale, 2017)
Treatment for anoxic encephalopathy includes mechanical ventilation, CPR, defibrilation, epinephrine, and atropine and various anti-convulsant drugs may need to be administered before treatment. (Rebar, Ignatavicius & Workman, 2018)

TOP 3 Nursing Diagnoses:

1. Ineffective airway clearance related to neuromuscular impairment as evidenced by adventitious breath sounds, excessive sputum, and vent dependence.
2. Ineffective gas exchange related to autonomic as evidenced by vent dependence.
3. Ineffective cardiac tissue perfusion related to lack of oxygenation to and from heart as evidenced by tachycardia and adventitious breathing sounds such as crackles. (Phelps, Ralph & Taylor, 2016)

Interventions for each Nursing Diagnosis:

Nursing interventions include monitoring intake and output, monitoring vitals, ABGs, and placing patient in a fowler's or semi-fowler's position in bed to facilitate venous flow. Suctioning patient as ordered and as needed to keep airway clear and stimulate to cough and clear airway, Monitoring sputum amount, color, consistency, and odor for hydration status and effectiveness of therapy. Nursing interventions for this event include cardiac monitoring every 4 hours for irregularities in heart rate, crackles in lungs and conducting a thorough pain assessment; turning and repositioning patient every 2 hours to improve lung expansion and prevent skin breakdown. (Phelps, Ralph & Taylor, 2016)

Student evaluation of clinical performance:

On my first day, I suctioned my patient at least 5 times using the in-line method. My instructor showed me how to do it the first time and instilled confidence in me during the procedure. The next clinical day, my patient was doing much better and did not need to be suctioned as frequently. I have overall gained confidence in passing and dispensing medication, as well as performing head to toe assessments and documenting my findings under the supervision of my clinical instructor. I feel a lot more confident in creating and implementing nursing diagnoses, as well as understanding them as they relate to the patients. Every day I spent at this clinical site was very informative, and I learned either a new method, fact, or a new way to view certain nursing aspects after each day was completed. I genuinely feel like this clinical experience helped me to grow as a student nurse and as a future nurse and I hope my next clinical experience is similar. I am very grateful to have had this opportunity.

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System Disorder

YOU MAY BEGIN

NAME _____

CONTENT System Disorder **REVIEW MODULE CHAPTER** 57

TOPIC DESCRIPTOR Encaphalopathy

Alteration in Health (Diagnosis)

Client Problem Related to Alteration in Health

Related to Autonomic dysreflexia and PEA cardiac arrest with ROSC

Pathophysiology Related to Client Problem

Safety Considerations

Mechanical ventilation can lead to ventilator-associated pneumonia, keep an eye over expansion or under expansion of lungs with mechanical ventilation. Be sure to clean patient's mouth with mouth wash and toothettes to avoid proliferation of bacteria that can lead to ventilator-associated pneumonia. Keep patient hydrated with fluids to avoid thick, congealed secretions

Assessment

Past Medical History

Medications

Risk Factors

Autonomic dysfunction, Cardiac Arrest, Hypoxemia, Viral Encephalitis, Seizure disorder and epilepsy

Laboratory Data

Serum electrolyte levels such as hypernatremia or hyponatremia, monitoring other ABG levels

Objective and Subjective Data

Diagnostic Procedures/Surgical Interventions

Teamwork and Collaboration

Discharge Planning

Break down choices in simple "yes" or "no" answers as to not overwhelm the patient. Switch to clothing with Velcro to make dressing

Interprofessional Care

The interprofessional care team consists of neurosurgeons, doctors, nurses, nutritionists, physical

Coordination of Client Care

Coordination of care will be delegated from doctors, nurses, nutritionists, physical therapy, and occupational

Nursing Interventions (Evidence-Based)

Monitoring intake and output, monitoring vitals, ABGs, and placing patient in a fowler's or semi-fowler's position in bed to facilitate venous flow. Suctioning patient as ordered and as

Outcomes/Evaluations

Client will be able to have some functional status. Recovery can take many months and even years, and in many cases the person never regains his or her prior level of functioning.

Client Education

Treatment for anoxic encephalopathy includes mechanical ventilation, CPR, defibrilation, epinephrine, and atropine and various anti-convulsant drugs may need to be administered before treatment.