Patient #1

DIAGNOSIS: *Cellulitis*: Cellulitis is a skin infection caused by bacteria. Cellulitis is caused by bacteria (usually strep or staph). Some people can get cellulitis without having a break in the skin. These include older adults and people who have diabetes or a weak immune system. There are many ways to get cellulitis. You can get it if you have:

- An injury to your skin, such as a cut, surgical wound, burn, or animal or insect bite.
- Skin problems, such as ulcers, eczema, psoriasis, or a fungal infection like athlete's foot.
- Certain medical conditions. These include diabetes, peripheral arterial disease, or a weak immune system.
- Fluid buildup (edema) in the legs or arms.
- Had liposuction to remove excess fat.
- Injected illegal drugs under your skin.

CHF: Heart failure does not mean the heart has stopped working. Rather, it means that the heart's pumping power is weaker than normal. With heart failure, blood moves through the heart and body at a slower rate, and pressure in the heart increases. As a result, the heart cannot pump enough oxygen and nutrients to meet the body's needs. The chambers of the heart respond by stretching to hold more blood to pump through the body or by becoming more stiff and thickened. This helps to keep the blood moving for a short while, but in time, the heart muscle walls weaken and are unable to pump as strongly. As a result, the kidneys respond by causing the body to retain fluid (water) and sodium. If fluid builds up in the arms, legs, ankles, feet, lungs, or other organs, the body becomes congested. Heart failure is caused by many conditions that damage the heart muscle, including:

- **Coronary artery disease.** Coronary artery disease (CAD), a disease of the arteries that supply blood and oxygen to the heart, causes decreased blood flow to the heart muscle. If the arteries become blocked or severely narrowed, the heart becomes starved for oxygen and nutrients.
- **Heart attack.** A heart attack may occur when a coronary artery becomes suddenly blocked, stopping the flow of blood to the heart muscle and damaging it. All or part of the heart muscle becomes cut off from its supply of oxygen. A heart attack can damage the heart muscle, resulting in a scarred area that does not function properly.
- **Cardiomyopathy.** Damage to the heart muscle. Causes include artery or blood flow problems, infections, and alcohol and drug abuse.
- **Conditions that overwork the heart.** Conditions including high blood pressure, heart valve disease, thyroid disease, kidney disease, diabetes, or heart defects present at birth can all cause heart failure. In addition, heart failure can occur when several diseases or conditions are present at once.

Stage A

People at high risk of developing heart failure (pre-heart failure), including people with:

- High blood pressure
- Diabetes
- Coronary artery disease
- Metabolic syndrome
- History of cardiotoxic drug therapy
- History of alcohol abuse
- History of rheumatic fever
- Family history of cardiomyopathy

- Exercise regularly.
- Quit smoking.
- Treat high blood pressure.
- Treat lipid disorders.
- Discontinue alcohol or illegal drug use.
- An angiotensin converting enzyme inhibitor (ACE inhibitor) or an angiotensin II receptor blocker (ARB) is prescribed if you've had coronary artery disease or if you have diabetes, high blood pressure, or other vascular or cardiac conditions.
- Beta-blockers may be prescribed if you have high blood pressure or if you've had a previous heart attack.

Stage B

People diagnosed with systolic left ventricular dysfunction but who have never had symptoms of heart failure (pre-heart failure), including people with:

- Prior heart attack
- Valve disease
- Cardiomyopathy

The diagnosis is usually made when an ejection fraction of less than 40% is found during an echocardiogram test.

- Treatment methods above for Stage A apply.
- All patients should take an angiotensin converting enzyme inhibitor (ACE inhibitors) or angiotensin II receptor blocker (ARB).
- Beta-blockers should be prescribed for patients after a heart attack.
- An aldosterone inhibitor may be prescribed if the symptoms continue while on good doses of beta blockers and ACE/ARB medications.
- Surgery options for coronary artery repair and valve repair or replacement (as appropriate) should be discussed.
- If appropriate, surgery options should be discussed for patients who have had a heart attack.

Stage C

Patients with known systolic heart failure and current or prior symptoms. Most common symptoms include:

- Shortness of breath
- Fatigue
- Reduced ability to exercise
- Treatment methods above for Stage A apply.
- All patients should take an angiotensin converting enzyme inhibitor (ACE inhibitors) and beta-blockers.
- African-American patients may be prescribed a hydralazine/nitrate combination if symptoms persist.
- Diuretics (water pills) and digoxin may be prescribed if symptoms persist.
- An aldosterone inhibitor may be prescribed when symptoms remain severe with other therapies.
- Restrict dietary sodium (salt)
- Monitor weight
- Restrict fluids (as appropriate)
- Drugs that worsen the condition should be discontinued.
- As appropriate, cardiac resynchronization therapy (biventricular pacemaker) may be recommended.
- An implantable cardiac defibrillator (ICD) may be recommended.

Stage D

Patients with systolic heart failure and presence of advanced symptoms after receiving optimum medical care.

- Treatment methods for Stages A, B ,& C apply.
- Patient should be evaluated to determine if the following treatments are available options: heart transplant, ventricular assist devices, surgery options, research therapies, continuous infusion of intravenous inotropic drugs, and end-of-life (palliative or hospice) care.

Atrial Fibrillation: Atrial fibrillation is an irregular heartbeat. This can increase the risk of stroke and heart disease. Signs include dizziness, weakness, and fatigue. It is treated with medication and lifestyle
changes.

Hypothyroidism: Hypothyroidism means your thyroid is not making enough thyroid hormone. The thyroid is a butterfly-shaped gland in the front of your neck. It makes hormones that control the way your body uses energy. Having a low level of thyroid hormone affects your whole body. It can make you feel tired and weak. If hypothyroidism is not treated, it can raise your cholesterol levels and make you more likely to have a heart attack or stroke. During pregnancy, untreated hypothyroidism can harm your baby. Luckily, hypothyroidism is easy to treat. n the United States, the most common cause is Hashimoto's thyroiditis. It causes the body's immune system to attack thyroid tissue. As a result, the gland can't make enough thyroid hormone. Other things that can lead to low levels of thyroid hormone include surgery to remove the thyroid gland and radiation therapy for cancer. Less common causes include viral infections and some drugs, such as lithium. Hypothyroidism can cause many different symptoms, such as:

- Feeling tired, weak, or depressed.
- Dry skin and brittle nails.
- Not being able to stand the cold.
- Constipation.
- Memory problems or having trouble thinking clearly.
- Heavy or irregular menstrual periods.

MEDS: **Medication (Generic/or Trade)**	**Classification & Action**	**Nursing Implications**	**Side Effects/ Adverse Effects**
Furosemide (Lasix)	-Inhibits the re-absorption of sodium and chloride from the loop of Henle and distal renal tubule -**Therapeutic:** Diuresis and subsequent mobilization of excess fluid. Decreases blood pressure	-Assess fluid status. Monitor daily weights, intake and output ratios, amount and location of edema, lung sounds, skin turgor, and mucous membranes. Notify physician or other health care professional if thirst, dry mouth, lethargy, weakness, hypotension, or oliguria occurs -Monitor blood pressure and pulse before and during therapy. Monitor frequency of prescription refills to determine compliance in patients treated for hypotension -GERI: diuretic use is associated with increased risk for falls in the older adults. Assess falls risk and implement fall prevention strategies - assess patients receiving digoxin for anorexia, nausea, vomiting, muscle cramps, paresthesia, and confusion. Patients taking digoxin are at increased risk of digoxin toxicity because of the potassium depleting effect of the diuretic. Potassium supplements or potassium–sparing diuretics may be used concurrently to prevent hypokalemia -Assess patient for tinnitus and hearing loss. Audiometry is recommended for patients receiving prolonged high-dose therapy. Hearing loss is most common after rapid or high-dose IV administration in patients with decreased renal function or those taking other ototoxic drugs - Assess for allergy to sulfonamides - **lab tests:** monitor electrolytes,renal and hepatic function, serum glucose, and uric acid levels before and periodically throughout. Commonly decreases serum potassium. May cause decrease serum sodium, calcium, and magnesium concentrations. May also cause increase BUN, serum glucose, creatinine, and uric acid levels.	CNS: blurred vision, dizziness, headache, vertigo EENT: hearing loss, tinnitus CV: hypotension GI: anorexia, constipation, diarrhea, dry mouth, dyspepsia, nausea, pancreatitis, vomiting GU: excessive urination DERM: photosensitivity, pruritis, rash F and E: dehydration, hypocalcemia, hypochloremia, hypokalmeia, hypomagnesemia, hypoatremia, hypovolemia, metabolic alkalosis HEMAT: APLASTIC ANEMIA, AGRANULOCTOSIS, hemolytic anemia, leucopenia, thrombocytopenia MS: muscle cramps NEURO: paresthesia MISC: fever, increased BUN, nephrocalcinosis
Darvocet N 100 (Propoxyphene Napsylate)	- Binds to opiate recpetors in the CNS. Alters the perception of an response to painful stimuli, while producing generalized CNS depression - **Therapeutic:** decrease in mild to chronic pain - Opioid analgesics	- Assess type, location, and intensity of pain prior to and 2 hr following administration. - use an equianalgesic chart when changing routes or when changing from one opioid to another - prolonged, high-dose therapy may lead to physical dependence and tolerance. This should not prevent patient from receiving adequate analgesia. Most patients who receive propoxyphene for pain do not develop psychological dependence. Progressively higher dose or change to a stronger opioid may be required to relieve pain with long-term therapy -assess blood pressure, pulse, and respirations before and during therapy. If respiration rate is <10/min, assess level of sedation -assess bowel function routinely. Prevention of constipation should be instituted with increased intake of fluids and bulk, and laxatives to minimize constipating effects	CNS: dizziness, weakness, dysphoria , euphoria, headache, insomnia, paradoxical excitement, sedation EENT: blurred vision CV: hypotension GI: nausea, abdominal pain, constipation, vomiting DERM: rashes MISC: physical dependence, psychological dependence, tolerance

		- GERI: geriatric patients may be more sensitive to CNS effects; monitor closely and assess falls risk -**lab tests:** may cause increase serum amylase and lipase levels -may cause increase AST, ALT, serum alkaline phosphatase , LDH, and bilirubin concentrations - TOXICITY: if an opioid antagonist is required to reverse respiratory depression or coma, naloxone (NARCAN) is the antidote	
Colace (Docusate Sodium)	- Promotes incorporation of water into stool, resulting in softer fecal mass -**Therapeutic:** softening and passage of stool	- Assess for abdominal distention, presence of bowel sounds, and usual patterns of bowel function. - Assess color, consistency, and amount of stool produced	EENT: throat irritation GI: mild cramps DERM: rashes
Coreg (Carvedilol)	- Blocks stimulation of beta1 and beta2-adrenergic sites -**Therapeutic:** Antihypertensives - decreased heart rate and blood pressure. Improved cardiac output, slowing progression of CHF, and decreased risk of death	- Monitor blood pressure and pulse frequently during dose adjustment period and periodically during therapy. Assess for orthostatic hypotension when assisting patient up from supine postion. - monitor intake and output ratios and daily weights. Assess patient routinely for evidence of fluid overload. Patients may experience worsening of symptoms during initiation of therapy for CHF - **hypertension:** check frequency of refills to determine adherence -**lab tests:** may cause increase BUN, serum lipoprotein, potassium, triglycerides, and uric acid levels -may cause increase ANA titers - May increase in blood glucose levels -Toxicity: Monitor patients receiving beta blockers for signs of overdose. Notify physician immediately if these signs occur	CNS: dizziness, fatigue, weakness, anxiety, depression, drowsiness, insomnia, memory loss, mental status change, nervousness, nightmares EENT: blurred vision, dry eyes, nasal stuffiness RESP: bronchospasm, wheezing CV: BRADYCARDIA, CHF, PULMONARY EDEMA GI: erectile dysfunction, decreased libido DERM: itching, rashes ENDO: hyperglycemia, hypoglycemia MS: arthralgia, back pain, muscle cramps NEURO: paresthesia MISC: drug-induced lupus syndrome
Pepcid (Famotidine)	- Inhibits the action of histamine at the H2 receptor site located primarily in gastric parietal cells, resulting in inhibition of gastric acid secretions - **Therapeutic:** healing and prevention of ulcers. Decreased symptoms of gastroesophageal reflux. Decreased	- assess for epigastric or abdominal pain and frank or occult blood in the stool, emesis, or gastric aspirate - GERI: assess geriatric and debilitated patients routinely for confusion. Report promptly - **lab tests:** Monitor CBC with differential periodically during therapy - Antagonize effects of pentagastrin and histamine during gastric acid secretion testing. Avoid administration for 24hr before the test - may cause false negative results in skin tests using allergenic extracts. Histamine H2 antagonists should be discontinued 24 hr before test - may cause increase in serum transaminases and serum creatinine - Serum prolactin concentration may be increased after IV bolus of cimetidine. May also cause decrease parathyroid concentrations	CNS: confusion, dizziness, drowsiness, hallucinations, headaches CV: ARRHYTHMIAS GI: constipation, diarrhea, drug-induced hepatitis, nausea GU: decreased sperm count, erectile dysfunction ENDO: gynecomastia HEMAT: AGRANULOCYTOSIS, APLASTIC ANEMIA, anemia, neutropenia, thrombocytopenia LOCAL: pain at IM site MISC: hypersensitivity reactions, vasculitis

	secretion of gastric acid	-Nizatidine: may cause increase alkaline phosphatase concentrations - Ranitidine and Famotidine: may cause false positive results for urine protein; test with sulfosalicylic acid	
Klor Con (Potassium Bicarbonate)	-Maintain acid-base balance , isotonicity, and electrophysiologic balance of the cell - **Therapeutic:** Replacement. Prevention of deficiency Mineral and electrolyte replacement/supplements	- Assess for signs and symptoms of hypokalemia and hyperkalemia - Monitor pulse, blood pressure, and ECG periodically during IV therapy - **lab tests:** monitor serum potassium before and periodically during therapy. Monitor renal function, serum bicarbonate, and pH. Determine serum magnesium level if patient has refractory hypokalcemia; hypomagnesemia should be corrected to facilitate effectiveness of potassium replacement . monitor serum chloride because hypochloremia may occur if replacing potassium without concurrent chloride - TOXICITY: symptoms of toxicity are those of hyperkalemia. Treatment includes discontinuation of potassium, administration of sodium bicarbonate to correct acidosis, dextrose and insulin to facilitate passage potassium into cells, calcium salts to reverse ECG effects, sodium polystyrene used as an exchange resin, and/or dialysis for patient with impaired renal function	CNS: confusion, restlessness, weakness CV: ARRYTHMIAS, ECG change GI: abdominal pain, diarrhea, flatulence, nausea, vomiting; *tablets, capsules only*—GI ulcerations, stenotic lesions LOCAL: irritation at IV site NEURO: paralysis, paresthesia

Patient #2

DIAGNOSIS: *Diabetes Mellitus*: There are 3 different types of diabetes mellitus: type 1 juvenile diabetes, type 2 diabetes, and gestational diabetes. All 3 types of diabetes have the same thing in common: your body cannot take glucose and use it effectively because insulin is not produced, not enough is produced, or both. People with diabetes can also develop hypertension and renal problems. Also, neuropathy is very common. Arteriosclerotic Heart Disease: Arteriosclerotic Heart Disease is also known as coronary artery disease (CAD). It is considered ischemic and it is a disease in which blood supply to the heart from one or both coronary arteries is diminished due to an accumulation of fatty substance on the inner lining of the arterialwall.

Hypertension: Hypertension is also known as high blood pressure. The normal for blood pressure should be around 120/80. Blood pressure is known the go up and down throughout the day because of
ADL's but if it is always elevated you have hypertension. Hypertension is usually classified if you blood pressure is 140/90.

Atrial Fibrillation: Atrial fibrillation is an irregular heartbeat. This can increase the risk of stroke and heart disease. Signs include dizziness, weakness, and fatigue. It is treated with medication and lifestyle
changes.

Hemiplegia: Severe or complete loss of motor function on one side of the body. This condition is usually caused by BRAIN DISEASES that are localized to the cerebral hemisphere opposite to the side of weakness. Less frequently, BRAIN STEM lesions; cervical SPINAL CORD DISEASES; PERIPHERAL NERVOUS SYSTEM DISEASES; and other conditions may manifest as hemiplegia. The term hemiparesis (see PARESIS) refers to mild to moderate weakness involving one side of the body. Severe or complete loss of motor function on one side of the body; this condition is usually caused by brain diseases that are localized to the cerebral hemisphere opposite to the side of weakness; less frequently, brain stem lesions; cervical spinal cord diseases, peripheral nervous system diseases, and other conditions may manifest as hemiplegia.

Depression: According to the DSM-IV, a manual used to diagnose mental disorders, depression occurs when you have at least five of the following nine symptoms at the same time:

- a depressed mood during most of the day, particularly in the morning
- fatigue or loss of energy almost every day
- feelings of worthlessness or guilt almost every day
- impaired concentration, indecisiveness
- insomnia or hypersomnia (excessive sleeping) almost every day
- markedly diminished interest or pleasure in almost all activities nearly every day
- recurring thoughts of death or suicide (not just fearing death)
- a sense of restlessness -- known as psychomotor agitation -- or being slowed down -- retardation
- significant weight loss or gain (a change of more than 5% of body weight in a month)

According to the National Institute of Mental Health, people with depressive illnesses do not all experience the same symptoms. How severe they are, how frequent, and how long they last will vary. It depends on the individual and his or her particular illness. Here are common symptoms people with depression experience:

- difficulty concentrating, remembering details, and making decisions
- fatigue and decreased energy
- feelings of guilt, worthlessness, and/or helplessness
- feelings of hopelessness and/or pessimism
- insomnia, early morning wakefulness, or excessive sleeping
- irritability, restlessness
- loss of interest in activities or hobbies once pleasurable, including sex
- no pleasure left in life any more
- overeating or appetite loss
- persistent aches or pains, headaches, cramps, or digestive problems that do not ease even with treatment
- persistent sad, anxious, or "empty" feelings
- thoughts of suicide, suicide attempts

Peg Tube: A **P**ercutaneous **E**ndoscopic **G**astrostomy tube, or PEG tube, is also called a feeding tube. One end of this flexible silicone tube sits inside the stomach and is held in place with a balloon like tip, and the other end is taped to the skin outside. The PEG tube may be used to feed you, or to give you medicine or liquids for a period of time. It does not always have to be permanent or the only source of nutrition.

Medication (Generic/or Trade)	Classification & Action	Nursing Implications	Side Effects/ Adverse Effects
Reglan (metoclopramide)	- Blocks dopamine receptors in chemoreceptor trigger zone of the CNS -Antiemetics - **Therapeutic:** Decreased nausea and vomiting. Decreased symptoms of gastric stasis. Easier passage of nasogastric tube into small bowel	- Assess patient for nausea, vomiting, abdominal distention, and bowel sounds before and after administration - assess patient for extrapyramidal side effects periodically throughout course of therapy. May occur weeks to months after initiation of therapy and are reversible on discontinuation. - Monitor for tardive dyskinesia. Usually occurs after a year or more of continued therapy. Report immediately; may be irreversible -Monitor for neuroleptic malignant syndrome - Assess patient for signs of depression periodically throughout therapy -**lab test:** may alter hepatic function test results -may cause decrease serum prolactin and aldosterone concentrations	CNS: drowsiness, extrapyramidal reactions, restlessness, NEUROLEPTIC MALIGNANT SYNDROME, anxiety, depression, irritability, tardive dyskinesia, CV: arrhythmias, hypertension, hypotension GI: constipation, diarrhea, dry mouth, nausea ENDO: gynecomastia HEMATO: methemoglobinemia, neutropenia, leukopenia, agranulocytosis
Atropine (AtroPen)	-Inhibits the action of acetylcholine at postganglionic sites located in: smooth muscle, secretory glands, CNS. - Antiarrhythmics - **Therapeutic:** Increased heart rate. Decreased GI and respiratory secretions. Reversal of muscarinic effect. May have a spasmolytic action on the biliary and genitourinary tract	- Assess vital signs and ECG tracings frequently during IV therapy. Report any significant changes in heart rate or blood pressure, or increased ventricular ectopy or angina to physician promptly - Monitor intake and output ratios in the elderly or surgical patients because atropine may cause urinary retention - Assess patients routinely for abdominal distention and auscultate for bowel sounds. If constipation becomes a problem, increasing fluids and adding bulk to the diet may help alleviate constipation - TOXICITY: if overdose occurs, physostigmine is the antidote	CNS: drowsiness, confusion, hyperpyrexia EENT: blurred vision, cycloplegia, photophobia, dry eyes, mydriasis CV: tachycardia, palpitations, arrhythmias GI: dry mouth, constipation, impaired GI motility GU: urinary hesitancy, retention, impotency RESP: tachypnea, pulmonary edema MISC: flushing, decreased sweating
Guaifenesin (Robitussin)	- Reduces viscosity of tenacious secretions by increasing respiratory tract fluid - allergy, cold, and cough remedies, expectorants -**Therapeutic:** Mobilization and subsequent	-Assess lung sounds, frequency and type of cough, and character of bronchial secretions periodically during therapy. Maintain fluid intake of 1500-2000 mL/day to decrease viscosity of secretions	CNS: dizziness, headache GI: Nausea, diarrhea, stomach pain, vomiting DERM: rashes, urticaria

	expectoration of mucus		
Alupent (Metaproterenol)	- Treatment/ prevention of bronchospasm due to reversible airway disease	- None in drug book	CNS: nervousness, restlessness, tremor, headache, insomnia RESP: PARADOXICAL BRONCHOSPASM CV: angina, arrhythmias, hypertension, tachycardia GI: Nausea, vomiting ENDO: hyperglycemia
Glytrol	Tube Feeding		