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*Complete and submit to the corresponding dropbox by 1600 on the assigned clinical day.

To Be Completed Before the Simulation

**** Blue boxes should be completed using textbook information. What do you expect to find? This information should be collected before you start the ATI simulation.

Medical Diagnosis/ Disease: _MI_____

NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation

Anatomy and Physiology
Normal Structures

The heart is a muscular organ about the size of a fist, located just behind and slightly left of the breastbone. The heart pumps blood through the network of arteries and veins called the cardiovascular system.

The heart has four chambers:
The right atrium receives blood from the veins and pumps it to the right ventricle.
The right ventricle receives blood from the right atrium and pumps it to the lungs, where it is loaded with oxygen.
The left atrium receives oxygenated blood from the lungs and pumps it to the left ventricle.
The left ventricle (the strongest chamber) pumps oxygen-rich blood to the rest of the body. The left ventricle's vigorous contractions create our blood pressure.

Left main coronary artery (LMCA). The left main coronary artery supplies blood to the left side of the heart muscle (the left ventricle and left atrium). The left main coronary divides into branches:

The left anterior descending artery branches off the left coronary artery and supplies blood to the front of the left side of the heart.

The circumflex artery branches off the left coronary artery and encircles the heart muscle. This artery supplies blood to the outer side and back of the heart.

Right coronary artery (RCA). The

Path Myocardial infarction (heart attack):

A coronary artery is suddenly blocked. Starved of oxygen, part of the heart muscle dies. Over the years, cholesterol plaques can narrow the arteries supplying blood to the heart.

Unstable Angina- plaque causes partial occlusion of coronary arteries. Angina occurs at rest or develops rapidly over a short period of time.

NSTEMI- plaque formation or thrombus causes partial occlusion of coronary arteries. Causes injury and infarction to subendocardial myocardium.

STEMI- Plaque formation or thrombus causes complete occlusion of coronary arteries. Resulting in transmural injury and infarction to the myocardium. Which is reflective in ECG changes of elevated ST segment and elevated troponins.

NCLEX IV *(7)*: Reduction of Risk

Anticipated Diagnostics
Labs

Serum cardiac Biomarkers- Troponin, Creatinine Kinase MB, Myoglobin.

BNP

D- Dimer

Additional Diagnostics
EKG-
ST elevation (injury)
T wave inversion (ischemia)
Q wave (necrosis)

Cardiac catheterization

Chest x-ray

ECHO – EF

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right coronary artery supplies blood to the right ventricle, the right atrium, and the SA (sinoatrial) and AV (atrioventricular) nodes, which regulate the heart rhythm. The right coronary artery divides into smaller branches, including the right posterior descending artery and the acute marginal artery. Together with the left anterior descending artery, the right coronary artery helps supply blood to the middle or septum of the heart.		

NCLEX II *(3)*: Health Promotion and Maintenance

NCLEX IV *(7)*: Reduction of Risk

Contributing Risk Factors	**Signs and Symptoms**	**Possible Therapeutic Procedures**	**Prevention of Complications**
Age, Gender, Ethnicity, Family Hx, Genetics, Smoking, Elevated lipids, Elevated BP, Obesity/inactivity, Diabetes, psychosocial illness, substance abuse. CAD.	Angina SNS stimulation-diaphoresis, vasoconstriction, skin is ashen, clammy, and cool to touch. N/V Initially increased HR and BP then decreased BP Crackles in the lungs, jugular venous distention, and abnormal heart sounds (S3, S4, new murmur) Fever.	**Non-surgical** Thrombolytic therapy O2 **Surgical** Cardiac Catheterization Atherectomy Cardiac Ablation Pacemaker Hemodynamic monitoring	(What are some potential complications associated with this disease process) Myocardium necrosis Dysrhythmias/abnormal heart sounds. HF Activity intolerance Decreased cardiac output. Cardiogenic shock

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management
Nitroglycerin IV Morphine Antiplatelet Anticoagulants Betablockers Ace inhibitors and ARBs Antidysrhythmic Lipid lowering drugs.

NCLEX IV *(5)*: Basic Care and Comfort

Non-Pharmacologic Care Measures
Education - Lifestyle changes - Medications - Patho calming environment Increase comfort/non-pharm pain relief. Relieve anxiety. Cardiac Diet

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?
Pain, staying in the hospital, long term complications, missing work, cost of healthcare, lifestyle changes.

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Client/Family Education	**NCLEX I *(1)*: Safe and Effective Care Environment**
List 3 potential teaching topics/areas • Patho of CAD/MI •Lifestyle changes •Medications and treatments	**Multidisciplinary Team Involvement** (Which other disciplines do you expect to share in the care of this patient) RN, CNA, Cardiologist, Pharm, Radiologist, Dietician, Lab tech. Cardiac rehab. Rapid response team.

Anticipated Patient Problems, Goals, & Interventions Based on Medical Diagnosis

** This worksheet should be completed before you begin the ATI simulation.

Problem #1: Decreased Cardiac Output

Patient Goals:

1. Pt will maintain adequate cardiac output, as evidenced by strong peripheral pulses, capillary refill less than 3 seconds, systolic BP within 20 mm Hg of baseline and HR within 60-100 beats/min with regular rhythm throughout my time of care.

2. Pt will be able to verbalize understanding of cardiac medications, post MI complications, cardiac diet and cardiac rehabilitation using teach back by the end of my care.

Assessments:

- VS (HR, BP, RR, T, SPO2) q 4 hrs. and PRN for symptoms and medications administration. PQRST of pain PRN for chest pain. Continuous cardiac monitoring. Level of knowledge PRN for new diagnosis and treatment regimen. Heart sounds, extremity pulses, and capillary refill q day and PRN for change in condition.

Interventions (In priority order):

1. Place pt on cardiac monitoring continuously throughout my care.
2. Administer Vasodilators (Nitro and Morphine) PRN for decreased coronary blood flow and increased cardiac workload.
3. Administer blood thinners PRN for increased risk of blood clot formation.
4. Administer beta blockers daily and PRN for increased pre/after load and increased HR.
5. Administer ACE inhibitors and ARBS daily and PRN for remodeling and ventricular dilation.
6. Administer Antidysrhythmic medications PRN for dysrhythmias.

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7. Educate pt on cardiac medications and potential post MI complications, and heart healthy cardiac diet PRN for deficient knowledge.

Problem #2: Acute Pain: Chest.

Patient Goals:

1. Pt will not report having chest pain during my time of care.
2. Pt will exhibit increased comfort by vitals being in within normal limits (HR 60-100 bpm, BP 120/80, RR 12-20, SPO2 >95%) or within pts baseline while in my care.

Assessments:

- VS (HR, BP, RR, T, SPO2) PRN for pain. Characteristics of pain (Quality, location, severity, duration, onset, precipitating factors and relieving factors) PRN for new onset of pain. Cardiac telemetry monitoring PRN for chest pain. Cardiac Cath PRN for unrelieved chest pain.

Interventions (In priority order):

1. Place pt on cardiac monitoring continuously throughout my care.
2. Administer morphine sulfate intravenously PRN for angina.
3. Place pt on 2L O2 through nasal cannula and titrate to desired effect PRN for angina and decreased SPO2.
4. Administer Nitroglycerin and titrate dose until pain is relieved if systolic BP is greater than 90 mm Hg PRN for angina.
5. Administer aspirin as ordered for angina.
6. Educate pt to report the first sign of chest pain PRN for new onset of pain.

At this time, complete assigned ATI Real Life Simulation

Actual Patient Problems & Goals

** The following should be completed after the ATI simulation.

Problem #1: Acute pain: Chest pain.

Patient Goals:

1. Mr. D will not develop new onset of chest pain during my time of care Met ☐ Unmet ☐

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2. Mr. D will exhibit increased comfort by vitals being in within normal limits (HR 60-100 bpm, BP 120/80, RR 12-20, SPO2 >95%) or within pts baseline by the end of my care. Met ☐ Unmet ☐

Problem #2: Impaired gas exchange

Patient Goals:

1. Mr. D's SPO2 maintain a SPO2 above 95% and respiration rate between 12-20 20 with no evidence of advantageous breath sounds during my time of care Met ☐ Unmet ☐
2. Mr. D will display no signs of hypoxemia (altered mental status, ashen skin, dusky nail beds) during my time of care. Met ☐ Unmet ☐

Additional Problems:
Decreased cardiac output- damaged heart, cardiogenic shock 3 days after MI.

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SOAP Notes Based on Priority Problems

Priority Patient Problem #1: Acute Pain: chest pain.

Subjective: *This section explains the client symptoms. Include a narrative of the patient's complaints/concerns and/or information obtained from secondary sources.*	**Chief Complaint: Tightness in the chest after shoveling snow. Pain not relieved by Nitroglycerin alone. Pain level of 8/10.** **PMH: hypertension, CAD with angina, Asthma, quit smoking 1 month ago and occasionally chews tobacco.** **Allergies: Penicillin, Peanuts, sulf.** **Current Medications: Nitroglycerin sublingual, lisinopril, albuterol inhaler.**
Objective: *This section is your clinical observations. Include, pertinent vital signs, pertinent labs and diagnostics related to priority problem.*	**Vital Signs:** **17:15 BP 110/82, HR 96, RR 28, SPO2 92%** **17:18 BP 104/78, HR 98, RR 24, SPO2 94%** **17:20 BP 100/68, HR 104, RR 24, SPO2 95%** **17:35 BP 102/68, HR 104, RR 22, SPO2 97% on 4L NC, Pain 8/10.** **21:00 BP 112/66, HR 96, RR 14, SPO2 98% on 2L NC, T 36 degrees Celsius.** **Labs:** **Creatinine Kinase 0 mEg/L** **Troponin T 0.2 ng/mL** **Troponin I 0.06 ng/mL** **Lactic Acid Venous 0.6 mmol/L** **aPTT 34 seconds** **PT 12 seconds** **INR 0.9** **Diagnostics:** **EKG- Prolonged P wave, Premature ventricular contractions, ST elevation.** **Chest Xray- no fluid or pneumothorax. Heart is situated in the anterior chest under the sternum with no enlarged heart shadows. No rib fractures or tumors. The aorta and aortic arch has calcification and appears intact with no dilation.**

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Assessment: *Focused assessment on your priority problem.*	**Pain started after shoveling snow in his yard. The pain is described as a tightness in his chest and rated 8/10. Pain is unrelieved by nitroglycerin sublingual tablets. Pts respiratory rate is elevated and pt states that the pain is making it hard to breath. BP 110/82, HR 96, RR 28, SPO2 92%.**
Plan ***Based on priority problem only** *Include what your plan is for the client. What treatments or medications are needed. You can include procedures, consults, labs/diagnostics, etc. What nursing interventions are being performed?*	**Plan: pt will need to be assessed using EKG to determine if he is having a STEMI. From there he will then need to be taken to the Cath Lab in an appropriate amount of time to save as much cardiac tissue as possible and relieve chest pain.** **Orders:** **Titrate O2 delivery to maintain O2 saturation at or above 96%.** **Continuous telemetry monitoring.** **BP, HR, and RR q 5 min.** **NS 1,000 ml. 300 ml bolus, then 100 ml/hr.** **Maintain IV access.** **Morphine 2 mg IV q 10 minutes for moderate to severe chest pain.** **Notify primary Provider stat.** **17:15- Given nitroglycerin 0.4 mg every 5 minutes X3 and aspirin 325 mg orally. Pain is unrelieved.** **17:25- Gave Morphine 2 mg for chest pain. Placed on 4L O2 NC.** **17:30- Prepped for cardiac catheterization with angioplasty and stent placement. Nurse and provider providing education at bedside to pt and his wife. EKG- Prolonged P wave, Premature ventricular contractions, ST elevation. Chest Xray- no fluid or pneumothorax. The heart is situated in the anterior chest under the sternum with no enlarged heart shadows. No rib fractures or tumors. The aorta and aortic**

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	arch have calcification and appears intact with no dilation. **17:35- Given Morphine 2 mg for chest pain.** **17:55- Percutaneous transluminal coronary angioplasty with stent placement in left anterior descending coronary artery.** **Taken to ICU after Cath lab and pt states that pain in chest is gone. Tele monitor shows normal sinus with PVCs. BP 112/66, HR 96, RR 14, SPO2 98% on 2L NC, T 36 degrees Celsius. Pt educated to tell nursing staff when experiencing any kind of chest pain. No further chest pain reported.** **Teaching/Resources: Education on cardiac catheterization. Education on cardiac diet and lifestyle changes. Education on cardiac meds. Pt resource that could be beneficial is cardiac rehab.**

Priority Patient Problem #2: Impaired gas exchange

Subjective: *This section explains the client symptoms. Include a narrative of the patient's complaints/concerns and/or information obtained from secondary sources.*	**Chief Complaint: Tingles and itchiness on upper extremities and chest following cardiac catheterization. Pt complains of not being able to catch his breath and states that he feels like he is coming down with a cold.**
Objective: *This section is your clinical observations. Include vital signs, pertinent labs and diagnostics related to priority problem.*	**Vital Signs:** **21:00- BP 112/66, HR 96, RR 14, SPO2 98% on 2L NC, T 36 degrees Celsius.** **21:10- BP 118/70, HR 98, RR 20, SPO2 96% on 2L NC.**

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	21:20- BP 155/98, HR 116, RR 32, SPO2 87% on 15L non-rebreather. **21:40- BP 148/92, HR 120, RR 32, SPO2 94% on 15L non-rebreather.** **22:00- BP 108/74, HR 88, RR 14, SPO2 100% on 15L non-rebreather.** **Labs: no new labs** **Diagnostics: no new diagnostics**
Assessment: *Focused assessment on your priority problem.*	**Tingles and itchiness on upper extremities and chest following cardiac catheterization. Pt complains of not being able to catch his breath Lungs sounds heard are wheezing and intermittent stridor. O2 titrated to 15L non-rebreather. BP 155/98, HR 116, RR 32, SPO2 87% on 15L non-rebreather. Skin is ashen and nail beds dusky.**
Plan ***Based on priority problem only** *Include what your plan is for the client. What treatments or medications are needed. You can include procedures, consults, labs/diagnostics, etc. What nursing interventions are being performed?*	**Plan: pt will need to be assessed for impaired gas exchanged due to allergic reaction to dye during cardiac catheterization. From there he will need to be treated with diphenhydramine and Epinephrine with titrated O2.** **Orders:** **Titrate O2 delivery to maintain O2 saturation at or above 96%.** **Diphenhydramine 25 mg IV bolus PRN q 4 hrs. for itching or restlessness.** **21:10 administered 25mg of diphenhydramine via VI Bolus for itching.** **21:20 pt complaints of SOB. Lungs sounds heard are wheezing and intermittent stridor. O2 titrated to 15L non-rebreather. BP 155/98, HR 116, RR 32, SPO2 87% on 15L non-rebreather. Skin is ashen and nail beds dusky. Rapid**

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	response and provider called. **21:25 Administered Epinephrine 0.3 mg IM.** **Pt states that he is feeling much better. Lung sounds have returned to normal and SPO2 is at 100% on non-rebreather. O2 is being weaned down. Still has a slight cough. Educated to report shellfish allergy to all healthcare providers in the future to prevent another anaphylactic reaction.** **Teaching/Resources: Educated to report shellfish allergy to all healthcare providers in the future to prevent another anaphylactic reaction**

Reflection:

1. Go back to your Preconference Template:
    a. Indicate (circle, star, highlight, etc.) the components of your preconference template that you saw applied to the care of this virtual patient.

2. What was your biggest "take-away" from participating in the care of this patient? How did this impact your nursing practice?

I felt like this virtual ATI helped reinforce what we have learned in class about coronary artery disease, myocardial infarction, and myocardial infarction complications by showing symptoms, diagnostics, nursing interventions, and several different complications that can happen after a myocardial infarction and cardiac catheterization. My biggest take away from this ATI is to always be assessing your patient for potential complications because they can happen at any time and for things that might not even be on the radar like a shellfish allergy that was not reported to the provider or healthcare team. In the future I will remember this simulation and always be checking my patient for possible complications following an MI and cardiac cath. I will also remember to ask my patients about all allergies before administering medications and doing procedures. I think this Simulation was very helpful in promoting my education on Myocardial infarctions and Myocardial Infarction complications.

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Time Allocation: 8 hours