ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2025

Student Name: Kimberly Joseph

ATI Scenario: ATI: MI

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: Myocardial Infarction

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

Anatomy and Physiology
Normal Structures

he Cardiovascular system consists of the heart which is a 4-chamber hollowed muscular organ that is about the size of a human fist. The heart is within the thoracic cavity within the mediastinal space that is known to separate the right and left pleural cavities. The heart has 3 layers known as the endocardium, which is the thin inner lining, the myocardium which is the muscle layer, and an outer layer known as the pericardium. The pericardium is a fibrous sac that covers the outside of the heart which lubricates the space between the pericardial layers and prevent friction every time the heart contracts. The two layers within the pericardium responsible includes the visceral layer which is the inner part of the epicardium and then the parietal layer which is outside. The septum is responsible for dividing the left and right side of the heart whereas the interatrial septum divides the left and right atrium. The intraventricular septum then divides the left and right-side ventricle. The wall thickness of the atrium vs the ventricular is different for the purpose of contractility. The atrial myocardium is thinner than the ventricles. Furthermore, the left ventricular wall is 2 to 3x greater because of the needed to pump out more blood for systemic circulation.

Blood Flow: Inferior/ Superior Vena Cava, Right Atrium, Tricuspid Valve, Right Ventricle, Pulmonary semilunar valve, Pulmonary arteries (deoxygenated blood), Lungs, Pulmonary veins(oxygenated), Left atrium, Bicuspid(mitral) valve, Left ventricle, Aortic semilunar valve, Aorta.

The Bicuspid(mitral) and tricuspid valves are attached to thin strands called chordae tendinae. The chordae are held up in the papillary muscles of the ventricles. The reason for this anchoring is so that the valve does not turn inwards when the ventricles contract. The pulmonary and aortic valves prevent blood from refluxing into the ventricles at every ventricular contraction.

Myocardium blood supply: The coronary circulation involves 2 major coronary arteries which occur during diastole which is when the myocardium relaxes during contraction. The left coronary artery divides into 2 branches, the left anterior descending artery and the left circumflex artery. These arteries are solely responsible then supply the left atrium, left ventricle the interventricular septum, and part of the right ventricle. The right coronary artery also does the same and supplies the right atrium, right ventricle, and the posterior side of the left ventricle. The coronary veins mimic the coronary arteries flow. The blood from this coronary system drains into the coronary sinus which is a large channel. This then empties in the right atrium near the entrance of the inferior vena cava.

Conduction system: The conduction system consists of specialized tissues that transport electrical impulses. These impulses start depolarization of the heart cells, leading to heart muscle contractions. The electrical impulses begin at the sinoatrial node then travel through the atrium pathways to depolarize the atria which results in a contraction. The impulse travels from the atria to the AV node through internodal pathways. The signal moves through the Bundle of His and the left and right bundle branches. The left bundle branches have 2 divisions, the anterior, and posterior which has electrical impulses that move through the ventricular walls through the Purkinje fibers. The ventricular conduction system delivers an electrical impulse within 12 seconds. This then triggers the left and right ventricle to contract together and pump out blood into the pulmonary and systemic circulation. Repolarization occurs when the contractile and conduction systems regain their polarized condition. The heart muscle cells have a unresponsive period that will restimulate during the action potential. During the ventricular contraction there is a period of time known as the refractory period where the heart muscle gradually reaches excitability, and a relative refractory period occurs by early diastole.

ECG: Electrodes record the electrical activity of the heart. There are the letters P, QRS, T, and U waveforms that are used on the electrocardiogram. The first waveform, the P, wave, records the firing of the SA node, which shows the depolarization of the atria. The QRS complex demonstrates the depolarization of the AV node throughout the ventricles. The delay of electrical impulse through the AV node is seen through the beginning of the P wave to the beginning of the QRS wave. The T wave represents the repolarization of the ventricles. The U wave, rarely seen represents repolarization of the Purkinje fibers. This can be sign during hypokalemia. Intervals between these waves demonstrate the time it takes for the electrical signal to travel from one area of the heart to another. If the ECG picks up certain changes it may point out a pathological condition.

Mechanical System: depolarization affects mechanical activity. Systole us when the heart contracts and pumps out blood from the ventricles. When the heart relaxes, the ventricles fill back up with blood which is known as diastole. Cardiac output is the amount of blood that is pumped every time the ventricles contract for 1 minute.

Cardiac reserve: This is the hearts ability to respond to the demands of stress, exercise, and electrolyte imbalances by increasing cardiac output is known as cardiac reserve.

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Myocardial infarction is when there is in interruption of blood flow or ischemia to the heart muscle/ myocardium. This eventually leads to necrosis. The coronary arteries which supply the heart with the oxygen that it needs, is deprived of nutrients mainly because of atherosclerotic plaques that rupture and occlude blood flow. This obstruction can damage heart tissue due to the lack of oxygen and nutrients.

Vascular system: In the Vascular system, there are 3 blood vessels which are the arteries, veins, and capillaries. The artery except the pulmonary artery carries oxygenated blood away from the heart. The veins except for pulmonary veins carry deoxygenated blood to the heart. The small branches of arteries and veins are known as arterioles and venules. Blood circulates from the left side of the heart into arteries, arterioles, capillaries, venules and veins into the right side of the heart. The arterial system is composed of the large arteries that have thick elastic wall tissue. This helps the impact of pressure from when the ventricles contract and allow recoiling that pushes blood into circulation. Arterioles have more smooth muscle that allow them to control BP in the arteries and distribution of blood. The are primarily responsible for responding to hypoxia and hypercapnia, by either dilating or constriction. The capillary walls are made of endothelial cells that has no elastic tissue. This is where there is an exchange of cellular nutrients and metabolic end products. The capillaries also connect the arterioles and venules. Venules are smaller veins that collect blood from the capillary and send it to larger veins. The venules have a “venule system” that maintain blood flow toward the heart and prevent backward blood flow. The largest veins are the superior and inferior vena cava. These are responsible from carrying blood from the lower part of the body. Regulation of CV system: The stimulation of the sympathetic nervous system causes the HR to increase, it controls the speed of electrical impulse conduction through the AV node and the force of atrial and ventricular contractions. This is through the beta- adrenergic receptors. These receptors are responsible for the release of the hormone epinephrine and norepinephrine. The parasympathetic nervous system slows the HR by decreasing electrical impulses from the SA node and the conductivity through the AV node. The sympathetic nervous system by way of alpha-adrenergic receptors stimulate the receptors to vasoconstrict. When these receptors are decreased vasodilation occurs. Baroreceptors: Located in the aortic arch and carotid sinus, the baroreceptors send information to the vasomotor center in the brainstem. This then causes a pause of the sympathetic nervous system. Additionally, the HR decreases, and vasodilation occurs peripherally. Chemoreceptors: Located in the aortic and carotid bodies and the medulla is responsible for changing respirator rate and BP due to response of hypercapnia. They also stimulate the medulla to increase BP. Blood Pressure: The arterial blood pressure is the force exerted by blood against the walls of the arterial system. The Systolic blood pressure is the peak pressure when the heart contracts. The diastolic blood pressure is the pressure in the arterial system when the ventricle relaxes or fills.		

To Be Completed Before the Simulation

Anticipated Patient Problem: Decreased Cardiac Output

Goal 1: will maintain BP WNL (SBP between 110-140 and DBP 70-90) during my time of care.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess heart rate and sounds (rhythm, rate, quality) q4h	Admin. 2 mg of Morphine, PRN, IVP
Assess Troponin lab values upon admission and qshift	Follow MONA protocol prn (morphine, oxygen, nitroglycerin, aspirin) prn
Assess for s/s of unstable angina such as (pain at rest, crushing feeling, indigestion) prn	Prep client for cath. Lab STAT
Assess urine output q4h and prn if client voids	Notify Provider of need for diuretic therapy if client doesn't void 30 mL/ hour prn
Assess lung sounds (effort of breathing, labored vs unlabored, symmetry, possible crackles) q4h	Elevate HOB 30* or higher continuously
Assess VS (BP, Peripheral pulses, SpO2, RR) q4h	Apply 2L O2 NC continuously if spO2 is <93%

Goal 2: will maintain SpO2 of 93% or greater during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain: Substernal/ epigastric region

Goal 1: will have a pain level of 0 by the end of my care.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess pain level and characteristics (duration, frequency, what relieves) prn and q4h	Admin of Morphine IVP as prescribed, prn for pain level greater than 5
Assess VS (HR, BP, RR, SPO2)	admin. Aspirin as prescribed, PRN, PO, for mild pain less than 4
Assess EKG for ST elevation q4h and prn	Prep client for cath. Lab if ST is elevated STAT, prn
Assess overall appearance for s/s of discomfort (grimacing, moaning, grabbing of chest) continuously	Educate on using relaxing techniques when experiencing pain q4h
Assess effectiveness of PRN analgesics (morphine, nitro) q45min-1h after admin.	Notify provider of need for stronger analgesics prn if ordered analgesics fail to relieve pain
Evaluate what the pain means to client qshift	Educate client on medication effective timing during peak periods qshift

Goal 2: will demonstrate signs of relieved discomfort by HR being between 60-100 and RR between 12-20, with overall relaxed body language by the end of my care.

To Be Completed During the Simulation:

Actual Patient Problem:1.Decreased Cardiac Output

Clinical Reasoning: hx of CAD w/ angina, hx of HTN, CP 8/10 unresolved after 3 nitro doses
Goal: R.D. will maintain BP WNL (SBP between 110-140 and DBP 70-90) during my time of care. Met: ☐ Unmet: ☐

Goal: R.D will maintain SpO2 of 93% or greater during my time of care. Met: ☐ Unmet: ☐

Actual Patient Problem:2. Acute Pain: substernal/ epigastric pain

Clinical Reasoning: CP 8/10 unresolved after 3 nitro doses, grabbing chest, c/o chest tightness, tachypneic, nausea
Goal: R.D. will have a pain level of 0 by the end of my care. Met: ☐ Unmet: ☐

Goal: R.D. will demonstrate signs of relieved discomfort by HR being between 60-100 and RR between 12-20, with overall relaxed body language by the end of my care. Met: ☐ Unmet: ☐

Additional Patient Problems: 3. Impaired Skin Integrity, 4. Risk for bleeding 5. Risk for adverse reaction to iodinated contrast media 6. Risk for shock: cardiogenic 7. Risk for electrolyte imbalances: Potassium 8. Readiness for Enhanced Health Management

Below will be your notes, add more lines as needed. **Relevant Assessments:** Indicate pertinent assessment findings. **Multidisciplinary Team Intervention:** What interventions were done in response to your abnormal assessments? **Reassessment/Evaluation:** What was your patient's response to the intervention?

Patient Problem	Time	Relevant Assessments	Time	Multidisciplinary Team Intervention	Time	Reassessment/ Evaluation
1,2	1655	Stated "I've been outside shoveling snow, and I don't feel well", grasping chest, dyspneic. C/o chest tightness even after sitting down	1655	Takes 3 doses of PO Nitroglycerin tablet, 325 mg of PO Aspirin	1705	CP unresolved after PO Nitroglycerine and PO Aspirin tablet
1,2	1720	CP unresolved after nitroglycerine tablet, wife calls 911, dyspneic, RR-26, BP: 96/56, HR-104, SPO2- 94% upon EMS arrival Pain level: 8/10,	1722	EMS arrives at scene, inserts Peripheral IV access line, & applies 4L O2 NC	1725	8/10 CP, SPO2-96% on 4L O2 NC, RR- 24, HR- 24, BP: 100/66., on way to ER
1,2	1727	Arrives in ER, stated "feels like my chest is being	1728	Nurse Christine switch lead wires from EMS leads to	1729	EKG reports: PVCs, ST Elevation, and

		squeezed and it's hard to breathe" c/o nausea and dizziness, hx of atherosclerosis, grabbing chest		ER leads		Prolonged P waves, CP-8/10 "stated "feels like squeezing over my heart"
1	1730	Dr. Patterson confirms STEMI, HR-104, BP-102/68, SPO2-97% 4L O2 NC, RR-22, 8/10 CP	1745	Getting ready to transfer to Cath lab for PCI w/ stent while educating n importance of procedure & admin 2mg IV morphine	1735	Verbalized understanding, CP-8/10, HR- 100, BP: 102/58, RR- 22, SPO2- 96% on 4L O2 NC
1	1755	30 minutes since arrival, awaiting Cath lab transfer, CXR- no fluid or pneumothorax, no enlarged heart shadows, no rib fx, tumors, aorta and aortic arch has calcification w/ no dilation of artery	2100	PCI w/ stent performed in cath lab, insertion of CVP, insertion of Aline, indwelling cath. insertion & Titrated O2 to 2L O2 NC	2110	Temp-36 C, HR-96bpm Urine Output- 0m, SPO2-98% 2L O2 NC, PCTA operative note- PCTA performed in left anterior descending coronary artery, no complications
3	2100	Post PCTA w/ stent, right femoral dressing clean and dry, indwelling Foley Cath draining clear yellow urine, R. neck CVP line w/ opaque dressing intact but has scant amount of red drainage noted, left radial artery dressing intact w. opaque dressing	2100	Admin. 250 mL of NSS to maintain Aline, admin. 250 mL/hr of NSS for 2 hr then saline locked	2100	Arterial BP-114/70. CVP-10, dressings still intact, clean and dry, CVP line still has scant amt/ of drainage
1,2	2125	Post PCTA w/ stent; Denies pain or SOB, c/o of irritating cough and nasal congestion, Tele- NSR w/ occasional PVCs, intake- 25	2125	Educated on importance of ICU admit post PCTA, educated on continuous monitoring, pressing gently on insertion site when coughing and the importance of lying flat for 2 hours with right leg with	2130	Urine output- 0mL, stated" the squeezing CP that I had is gone"

				straight position post procedure		
1,8	Post PCTA procedure, admitted in ICU unit	Hospital admission: MI, 8/10 CP upon arrival, STEMI w/ unstable angina, post PCI w/ stent, BP: 112/66 HR: 96 Plt-220	0900	Admin. 10mg PO Lisinopril, 5 mg PO Amlodipine, 325 mg PO Aspirin, 75 mg PO Clopidogrel	1000	BP: 118/70, HR-98 bpm, Plt lab pending.
5	1140	Stated "I am feeling itchy over my arm and chest", ate shrimp one time and tongue swell never ate again Allergies to PCN, Peanut, Sulfa	1145	Admin. 25mg of IV Diphenhydramine	1200	Allergic rxn reversed
5	1150	Post PCTA- Stated "I think I'm coming down with a cold", irritating cough, c/o nasal congestion, lung sounds: wheezing, SPO2, 96% 2L O2 NC, stated "I can't seem to catch my breath", shellfish allergy	1156	Nurse Carl applied nonrebreather mask, increased o2 to 15L	1158	Lung sounds: intermittent stridor, SPO2- 87% O2 via nonrebreather mask on 15 L, ashen skin, nail beds dusky, in distress
5	1140	Post PCTA procedure, shellfish allergy, Lung sounds: intermittent stridor, SPO2- 87% O2 via nonrebreather mask on 15 L, ashen skin, nail beds dusky, in distress, RR-36	1141	Collaborated w/ Rapid Response Team and Admin. 0.3 Mg of IM Epinephrine, switched 15L nonrebreather back to 3L O2 NC, documented shellfish and iodine allergy, and educated on importance of reporting shellfish/ iodine allergy to other HCPs	1210	Stated "I'm breathing much better, I'm no longer itchy anymore", lung sounds: clear, no more stridor or wheezing, RR-14, SPO2- 100% 3L O2 NC, verbalized understanding of education provided.
7	1215	Tele monitoring: RSR w/ PVCs, K upon admission 3.6(low)	1225	Nurse Carl admin. 20mEq PO Potassium Chloride	Day3	Tele monitoring: NSR w/ PVCs; K 3.4 on Day 3,
4	1310	7.62 in. Hematoma	1311	Nurse Carl applies	1321	Bleeding stopped

		at right groin site stated “I feel like I’m sitting on something wet”		pressure for 10 min. at right groin site		
8	1330	Stated” I walk occasionally, I eat fast food 4x a week and my wife and I enjoy eating steaks, diets never work for me, I stopped smoking a month ago. Still smokes and uses vapes to quit smoking	1331	Educated on importance of consuming foods in low saturated fats, high in fiber, 6 servings of fruits and vegetables, replacing red meat with lean protein sources such as chicken or fish. Also educated on low sodium diet to control HTN with encouraging to modify exercise regime.	1335	Verbalized understanding. Pamphlet at bedside.
6	1400	Post PCTA procedure, damage to left ventricular myocardium, urine output 200 mL, cold and clammy to touch, restless and agitated, MAP-54, Aline BP-96/57 urine output down to 48 mL per hour	1415	Nurse C. admin. 250 mg IV Dobutamine gtt in 250 D5W 250 mL, 4mg D5W 1000mL Norepinephrine at 0.5mcg/ min and titrate IV NSS to 50 mL/hr	1515	Aline BP-96/56 SPO2- 96% 4L O2 NC, urine output-42mL, arousing easily, stated ”I’m less shaky, dizzy, and I’m not sweating anymore
8	Day3	Aline, CVP, Foley cath. IV d/c, d/c education post PCTA, wife stated” we like to cook together but don’t have enough time”	Day 3	Nurse C. collaborates w/ dietation to provide with informational pamphlet on reading sodium content on food labels, importance of whole grain, and healthier alternatives for nutrition for heart healthy diet	Day3	Verbalized understanding.
4,8	Day3	At d/c education, questions regarding Clopidogrel medication regime, Plt- 225,000	Day3	Educated on importance of adhering to antiplatelet therapy, and to report being on antiplatelet if	Day3	Verbalized understanding, Plt lab pending

				having surgery/dental work and stopping before		
4,8	Day 3	At d/c education, questions regarding taking dual therapy antiplatelets, medication regime questions, Plt- 225,000	Day 3	Educate on pharmacokinetics of Aspirin and Clopidogrel and reporting unusual s/sx bleeding	Day3	Verbalized understanding, Plt lab pending
1,2,4,5,8	Right before d/c to stepdown unit	BP: 124/72 HR- 68 RR- 12, SPO2- 98% on RA unlabored breathing	Right before d/c to stepdown unit	Collaborates w/ provider to transfer to medical stepdown unit	At d/c	Not actively having MI, CP 0/10, no allergic rxn, on way to medical step down unit,

To Be Completed After the Simulation

The orange boxes should be filled out with your simulation patient's actual results, assessments, medications, and recommendations

NCLEX IV *(7)*: Reduction of Risk

Actual Labs/ Diagnostics

EKG upon arrival: prolonged P wave, ST elevation, PVCs
12 lead EKG during allergic rxn: RSR w/ PVCs
WBC: 6
RBC: 5.2
Hgb- 15.9
Hct- 54%
Plt-220,000
Troponin T- 0.2 ng/dL
Troponin I- 0.06
Troponin redraw- 0.4
aPtt- 34 seconds
PT-12 seconds
INR-0.9
Glucose at 1725: 118 Glucose at 1745: 122
Na- 140 mEq/ L
K-3.6mEq/L
Bun- 18 mg/dL
Cr-0.8 mg/dL
Albumin- 3.6g/dL
Calcium-10.2
Phosphorus- 4.2
Magnesium- 1.6
ALT- 28
AST-24
Cholesterol-21
Billirubin-0.8
ABGs:
pH- 7.35
PaO2- 88 mmHg
PaCO2- 40
HCO3- 26
SaO2- 95%
Urinalysis: clear, yellow, aromatic odor, Spec. Gravity: 1.030, pH-6.8, neg. for leukocytes, glucose, ketones, bacteria
Dx:
CXR at 1750: CXR- no fluid or pneumothorax, no enlarged heart shadows, no rib fx, tumors, aorta and aortic arch has calcification w/ no dilation of artery

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

Signs and Symptoms

Unresolved CP
Epigastric/ substernal pain
Dizziness
Nausea
Chest tightness
Irritable cough
Wheezing
Intermittent stridor
Itchiness post PCTA procedure
Ashen skin color

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

NCLEX IV *(7)*: Reduction of Risk

Contributing Risk Factors

African American
Hx of Atherosclerosis/CAD
Sedentary lifestyle
Eating fast food 4 times a week
Obesity (height 66 in; weight 242 lbs)
Hx of HTN, Smoking
Currently e vaping

Therapeutic Procedures

Non-surgical

N/A

Surgical

Cardiac cath
PCTA In left anterior descending coronary artery

Prevention of Complications

(Any complications associated with the client's disease process? If not what are some complications you anticipate)

- Arrhythmias (K supplement and cath lab tx)
- Cardiogenic shock (Dobutamine and Norepinephrine gtt)
- Hematoma formation at groin site (applying pressure and marking site to trend progression)

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

Medication Management

325 mg Aspirin
3 doses of PO Nitroglycerin
2mg IV Morphine q10 min. for severe CP
Clopidogrel
Potassium
Norepinephrine
Dobutamine
NSS

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

Non-Pharmacologic Care Measures

- Maintaining HOB flat to prevent dislodgement of clot at insertion site for catheterization procedure
- Splinting insertion site when coughing

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

Stressors the client experienced?

Hospitalization
Financial(long admission stay and procedure costs)
Major life changes post MI and PCTA procedure

Client/Family Education

Document 3 teaching topics specific for this client.

- InEncourage to consume 6 servings of fruit and vegetables and consuming leaner proteins.
- Educate on importance of incorporating moderate exercise in routine.
- Educating on importance of adhering to new medication regime such as antiplatelet therapy.

NCLEX I *(1)*: Safe and Effective Care Environment

Multidisciplinary Team Involvement

(Which other disciplines were involved in caring for this client?)

Cardiologist
Cath Lab
Laboratory
Nurse Christine
Radiology Tech
Nurse Carl(ICU nurse)
Dietitian
Pharmacy

Patient Resources

activity restrictions, medication reconciliation/management, cardiac rehab, follow-up w/ PCP, emergency preparedness (family learns CPR)

Reflection Questions

Directions: Write reflection including the following:

1. What was your biggest “take away” from participating in the care of this client?
   My biggest takeaway when participating in Mr. Davis care is that time is tissue and the fact that the medical team from EMS to hospital early recognized critical status of Mr. Davis was able to intervene immediately and effectively. Ensuring that the client safety was put first at all times prevented adverse outcomes and status deterioration prevention.

2. What was something that surprised you in the care of this patient?
   Something that surprised me is that no one checked to see if Mr. Davis was allergic to shellfish and Penicillin prior to having PCTA. It could have prevented the allergic reaction we saw if someone did that safety check prior.

3. What is something you would do differently with the care of this client?
   Something I would do differently is being able to identify the allergy prior to proceeding to the PCTA.

4. How will this simulation experience impact your nursing practice?
   This simulation experience will impact my nursing practice by always implementing safety checks because this could’ve had an adverse effect on the patient’s status.