ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2026

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ATI Scenario: Myocardial Infarction

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: MI

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

Anatomy and Physiology
Normal Structures

There are three layers of the heart. The pericardium is the protective sac around the heart. The myocardium is the thick muscular layer, responsible for contraction. The endocardium is the inner lining of the chambers and valves. The right side of the heart receives deoxygenated blood, and this consists of the right atrium and the right ventricle. The left side pumps oxygenated blood out and consists of the left atrium and left ventricle (the left ventricle is the thickest because it is going to pump blood out to the whole body. There are four heart valves the tricuspid valve which going from the right atrium to the right ventricle. The pulmonic valve goes from the right ventricle to the pulmonary artery. The mitral valve goes from the left atrium to the left ventricle, and the aortic valve goes from the left ventricle to the aorta. The blood goes from the body to the right atrium, through the tricuspid valve into the right ventricle then through the pulmonic valve then through the pulmonary artery to the lungs to get their oxygenation. Through the lungs they go to the left atrium then through the mitral valve into the left ventricle. Then through the aortic valve into the aorta then pushed out throughout the rest of the body. The hearts' primary function is to pump blood to deliver oxygen and nutrients to tissues. There is diastole which is the relaxation phase this is where the heart fills with blood, the ventricles in this phase are relaxing. During systole this is the contraction phase, the heart is pumping blood out, this is when the ventricles are going to contract.

Cardiac output is CO=HR x SV, and a normal CO should be 4-8 L/min
There is preload which is the amount of blood in the ventricle before each contraction, volume of blood stretching the ventricles at the end of diastole
Contractility is the strength of the heart contraction, increased with epinephrine and norepinephrine from SNS, increased contractility increased SV by increasing ventricular emptying
Afterload is the resistance the heart is pumping against, depends on the size of ventricles, wall tension, and BP

For the electrical conduction it goes in this order:

1. SA node (60-100bpm)

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Myocardial Infarction happens when blood flow to part of the heart muscle is blocked. It will begin with the development of atherosclerosis. Some risk factors for atherosclerosis include smoking, elevated lipids, inactivity, obesity, etc. There then begins to be deterioration of the stable plaque that was in the coronary arteries. It begins to rupture, platelet aggregation and then thrombus. A MI is an abrupt stoppage of blood flow through a coronary artery with a thrombus which is caused due to the platelet aggregation-this will then cause irreversible myocardial cell death. It can result in a partial occlusion of the coronary arteries which would either be called a UA or a NSTEMI, it can also be a total occlusion of the coronary arteries which is called a STEMI. When you are having a MI you will have chest pain-if you see ST elevations of a 12-lead EKG it is a STEMI. If you are looking at the EKG and you do not see ST segment depression or T wave inversion it is most likely a UA or a STEMI.
With an NSTEMI you will need a cath within 12-72 hours, thrombolytic therapy is not indicated. An acute MI will occur over hours and even up to a few days-they mostly affect the ventricle. When a MI is occurring it is important to remember that time is tissue.
Clinical Manifestations of MI:
-It is important to assess the pain-how long it is lasting, if it is radiating to the arm or neck.
-Diaphoresis
-Vasoconstriction of peripheral blood vessels
-Skin will be clammy and cool to touch
-You will initially see increased HR and BP, then you will see a decrease in BP
-Crackles, JVD, decreased UO, abnormal heart sounds, -N/V, fever
Labs and Diagnostics of MI:
-Troponin-indicating myocardial damage
-BNP
-CBC
-Electrolytes
-Lipid Panel
-EKG
-STEMI: ST elevation
-NSTEMI: ST depression, T wave inversion
-Cardiac Cath: shows location and severity of blockage

2. AV node (40-60bpm) 3. Bundle of His 4. Right and left bundle branches 5. Purkinje fibers (20-40bpm-slowest) Electrical conduction ALWAYS comes before mechanical. If there is no electrical impulse the heart is not able to contract The coronary arteries supply oxygenated blood to the heart muscle. The coronary arteries fill during DIASTOLE. There are two major coronary arteries • Left coronary artery branches left anterior descending and left circumflex, supply blood to LA, LV, interventricular septum, and part of RB • Right coronary artery branches: supplies blood to RA, RV, part of posterior LV, AB node and bundle of His		Echo Medications given: -Morphine -Oxygen -Nitroglycerin -Aspirin

To Be Completed Before the Simulation

Anticipated Patient Problem: Decreased Cardiac Output

Goal 1: SpO2 will remain above 94% on RA and HR will remain between 60-100bpm 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 HR and rhythm Q2hr and PRN	Maintain continuous cardiac monitoring
Assess BP Q2hrs and PRN	Administer medications as ordered such as nitroglycerin, beta blockers
Assess O2 Sat Q2hrs and PRN	Administer oxygen therapy as needed
Assess skin color and temperature Q2hrs and PRN	Place in semi-fowlers position
Assess LOC Q2hrs and PRN	Report any changes in LOC to the provider
Monitor urine output Q1hr	Administer IV fluids

Goal 2: Will show no signs of confusion and will have an alert LOC during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain

Goal 1: Will have a pain score of 0/10 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 pain level on a 0-10 scale Q1hr and PRN	Administer nitroglycerin/morphine as ordered, apply EKG leads
Monitor BP, HR, RR, SpO2 Q2hrs and PRN	Report abnormal VS to provider
Assess duration of chest pain Q1hr and PRN	Apply EKG leads, notify provider if pain is not going away
Assess for worsening pain with movement and ambulating Q2hrs and PRN	Educate importance to avoid exertion, and to change positions slowly
Assess for restlessness and agitation Q2hrs	Allow for frequent rest periods, stay with the patient, reduce stimuli
Assess for N/V/Dyspnea Q2hrs and PRN	Administer antiemetics and keeping in Fowler's position, apply oxygen as needed

Goal 2: Will have a HR between 60-100bpm and will show no signs of restlessness during my time of care.

To Be Completed During the Simulation:

Actual Patient Problem: Decreased Cardiac Output
Clinical Reasoning: Hx of HTN, coronary artery disease with angina, has had a STEMI

Goal: BP will remain in target range of systolic BP greater than 100 during my time of care. Met: ☐ Unmet:☐

Goal: SpO2 will remain greater than 93% on 2L NC Met: ☐ Unmet:☐

Actual Patient Problem: **Acute Pain**

Clinical Reasoning:
Goal: Pain will remain 0/10 during my time of care. Met: ☐ Unmet:☐

Goal: HR will remain between 60-100 during my time of care. Met: ☐ Unmet:☐

Additional Patient Problems: Knowledge Deficit, Impaired Skin Integrity, Impaired Gas Exchange, Risk for Bleeding

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
Acute Pain/Decreased Cardiac Output	1700	Chest feels right, States, "tried sitting down but it felt so tight",	1700	Wife handed him his nitroglycerin tablet	1700	Wife called EMS, on the way to the hospital
Acute Pain/Decreased Cardiac output	1700	Chest pain started at 1725, P-104, RR-26, BP-96/56, Spo2-94% on 4L NC	1700	Wife gave him Had 3 doses of nitroglycerin, and 325mg of aspirin as well as called EMS	1730	Arrived onto the floor at the hospital, continuing to still have chest pain, P-102, RR-24, BP-100/66, 96% on 4L NC
Acute Pain/Decreased Cardiac Output	1735	Laying in bed, holding his chest, stating it feels hard to breathe, pain is continuous, States, "Feeling dizzy and sick to my stomach", has a history of CAD, States pain is an 8/10, P-104, RR-22, BP-102/68, 97% on 2L NC	1735	Nurse applied EKG leads; EKG tech is coming to apply 12 lead ECG	1740	Provider comes in to notify he is experiencing a heart attack-STEMI
Decreased Cardiac Output/Acute Pain	1735	EKG showing ST elevation-STEMI, continuing to have chest pain	1740	Doctor orders for him to go down to the Cath lab, states, "If they find a blocked artery they	1800	Went to the cath lab and has had a percutaneous transluminal coronary angioplasty

				will perform a percutaneous translumenal coronary angioplasty.		with stent placement in the left anterior descending coronary artery. Vital signs stable throughout the procedure and is receiving oxygen 2L NC
Knowledge Deficit	1740	Wife asking a lot of questions about what a cardiac cath is, Pt states, “I will do whatever I can to get some relief”	1740	Doctor provides information about what is going to happen when they go down into the cath lab and exactly what a STEMI is	1740	Wife verbalizes understanding about the cath lab and her husband’s condition
Knowledge Deficit	2100	Has a vascular closure device used after the lines were removed from the right femoral puncture site, no bleeding or hematoma present	2100	Nurse educates the importance for him to lay flat in bed, keeping his leg straight, stating if he needs to cough press gently down on insertion site	2100	States understanding, no pain to insertion site
Impaired Skin Integrity	2100	Patient states feeling itchy	2100	Doctor ordered Benadryl 25mg IV bolus PRN	2120	Stated, “The itching has started to go away now
Impaired Gas Exchange	2115	States, “My nose feels stuffy, and I feel like I have to cough, and I can’t catch my breath’, P-112, R-32, O2-94% on 2L NC		Nurse applied nonrebreather face mask and increased O2 to 15L	2120	Nurse administered one dose of epinephrine, P-116, R-32, O2-87% non-rebreather mask
Risk for Bleeding	2130	Starting to form a hematoma at puncture site	2130	Applied pressure to the right femoral puncture site	2140	Bleeding has stopped at the puncture site
Deficient Knowledge	2145	Does not exercise, history of asthma, CAD, HTN, smoking, eats fast food 4x weekly	2145	Nurse educated how to fix some of the modifiable risk factors to help with the CAD such as a low sodium diet	2145	Acknowledges what he can do control some of the risk factors, educational pamphlets at bedside.
Decreased Cardiac Output	2200	Blood pressure of 88/54, appears agitated and restless	2200	Increased O2 to 3L NC, Started Dobutamine drip	2300	Systolic BP 80/52
Decreased Cardiac Output	2300	BP 64/42	2300	Nurse administered norepinephrine 0.5mcg min	0000	BP 124/72, States, “I am feeling a lot better”
Deficient Knowledge	0900	Hx of coronary artery disease, likes to eat out a lot	0900	Nurse gives list from dietary of good low sodium diet meals	0900	States, “He is going to try to do better about not having so much salt in his diet”

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
Troponin T-0.2
Troponin I-0.06
Lactic Acid-0.6
Hgb-15.9
Hct-54%
Cholesterol-324

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

Signs and Symptoms
Chest Pain greater than 20 minutes
SOB
Dizziness
Nausea/Vomiting
Diaphoresis
Tachycardia/Bradycardia/Hypotension

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

Contributing Risk Factors

Previous Smoker
CAD with angina
HTN
Age
Gender (males)
Ethnicity
High cholesterol
Physical Inactivity

Therapeutic Procedures
Non-surgical
PCI
Thrombolytic Therapy
Cardiac Cath
O2 Therapy

Surgical
CABG
Pacemaker

NCLEX IV *(7)*: Reduction of Risk

Prevention of Complications
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
Cardiogenic shock
Dysrhythmias
Heart Failure

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

Medication Management
Nitroglycerin
Aspirin 325mg PO
Lisinopril 10mg PO
Clopidogrel 75mg PO
Morphine 2mg IV push

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

Non-Pharmacologic Care Measures
Elevating HOB
Holding insertion site while coughing
Oxygen Therapy
Continuous cardiac monitoring
Monitor vital signs frequently

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

Stressors the client experienced?
Pain-worrying that the pain may not go away

Anxiety that the pain won't go away, being in the hospital, feeling like they are going to die

Client/Family Education

Document 3 teaching topics specific for this client.
•Maintaining a low sodium diet
• Notify HCP if he gets a dry cough from ACE inhibitor
•Educated what CAD is and some modifiable risk factors

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

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
Nurse
Doctor (provider)
Surgeon (Cath Lab)

Patient Resources
Dietary Handouts (Low sodium diet)
Resources on what CAD is

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 take away from this simulation is that time is tissue. His wife was really proactive about when he was having chest pain to give him his nitroglycerin and called 911. It is really important that if you are having a MI that you are getting taken care of as soon as possible, and this really showed that.

2. What was something that surprised you in the care of this patient?
   Something that surprised me during this care was when he was bleeding from his site from his cardiac cath. This showed me how important it is that you are doing your postoperative checks to make sure if a complication does occur you catch it early.

3. What is something you would do differently with the care of this client?
   Something I would have done differently with the care of this client is making sure I am doing my assessment properly, and thoroughly. There could have been some assessments that he could have followed up on sooner that may could have prevented him from going into cardiogenic shock. I think also if he would've been more thorough he would've known the patient had an allergy and that could have prevented him from having the allergic reaction post op.

4. How will this simulation experience impact your nursing practice?
   This simulation will impact my nursing practice because it really showed how serious an MI is and especially what can happen when we are watching these patients in the hospital post cardiac catheterization. It has really shown me that my assessment skills and being aware of subtle changes are important and can help from having the patient's condition progress. I think this was a great simulation and I enjoyed it.