

ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2025

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ATI Scenario: Myocardial Infarction Complications

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

Vascular System: **Arteries** (carry oxygenated blood away from the heart, made of thick elastic tissue), **veins** (carry deoxygenated blood to the heart, larger diameter and thin), and **capillaries** (connect arterioles and venules, allow exchange through diffusion in membrane, made of endothelial tissue)

Order of Blood Flow: SVC/IVC → RA → TV → RV → PV → PA → PV → LA → MV → LV → AV → aorta

Anatomy of the heart: 4 chambered hollow muscular organ; contains **endocardium** (innermost thin layer), **myocardium** (muscle), **epicardium** (outer layer); **pericardium** is the visceral/parietal covering. Atrial myocardium is thinner and the left ventricular wall is thicker to support systematic pumping of blood out to the body.

Valves connect to chordae tendineae and prevent regurgitation.

Diastole: relaxation, blood flows into arteries

Systole: contraction, ejection of blood from the ventricles

Regulation: controlled by ANS; action potential is carried as depolarization of heart cells occur and the heart contracts (travels through internodal paths from AV node); SNS stimulate ↑ HR, speed of impulse from AV node, ↑ contraction force controlled by epi and norepi receptors, PNS opposite; SNS stimulation causes vasodilation, PNS contracts

Cardiac Output: amount of blood pumped by each ventricle/min (controlled by ANS)

Preload: volume of blood pumped by each ventricle at end of diastole

Afterload: resistance the LV must pump

NCLEX IV (7): Reduction of Risk

Pathophysiology of Disease

A **myocardial infarction (MI)** occurs when there is the stopping of blood flow through the coronary arteries, preventing that portion of heart muscle it feeds to not receiving oxygen. This causes cardiac muscle death in those portions. A **STEMI** refers to an ST-elevated myocardial infarction, which occurs when there is complete blockage of the blood vessel.

An **ST elevation** refers to a 1 mm or more elevation above the isoelectric line in a minimum of two leads.

This is **an emergency**, and action must be taken within 90 minutes to prevent irreversible damage. Interventions include either **PCI or with thrombolytic therapy**.

If a STEMI goes **uns.resolved**, there may be a pathologic Q wave, which refers to an abnormally deep or elevated Q wave. Other changes that can show on an EKG are T-wave inversion, which is a reflection of previous ischemia that has occurred, or hypokinesia (poor myocardial contractility) and akinesia (no myocardial contractility).

An acute **MI** will evolve in the first few hours to days. The first tissue to develop ischemia is the innermost layer of tissue in the heart. When ischemia continues, necrosis of the entire heart muscle can occur.

Where the occlusion occurs in the coronary arteries will reflect where the damage occurs.

To Be Completed Before the SimulationAnticipated Patient Problem: **Decreased Cardiac Output**

Goal 1: Patient maintains adequate cardiac output aeb HR 60-100 beats per min during my time of care.

Goal 2: Patient maintains adequate cardiac output aeb +2 peripheral pulses during my time of care.

Relevant Assessments (Prewrite) What assessments pertain to your patient's problem? Include timeframes	Multidisciplinary Team Intervention (Prewrite) What will you do if your assessment is abnormal?
Monitor Spo2 at the beginning of my time of care, q4h, and PRN.	Apply oxygen via NC as needed for Spo2 below 92%.
Assess apical heart rate at the beginning of my time of care and PRN.	Apply and begin ECG monitoring and notify healthcare provider of any sudden changes such as ST elevation throughout my time of care.
Assess strength and presence of peripheral pulses at the beginning of my time of care and PRN.	Administer Aspirin 325 mg PO once daily as ordered by provider.
Auscultate heart sounds, listening for any abnormal and normal heart sounds q4h and PRN.	Administer inotropic agents as ordered by the provider.
Assess blood pressure q4h and PRN.	Administer nitroglycerin 0.4 mg PO as ordered by physician.
Evaluate cardiac enzymes, cholesterol and triglyceride values at the beginning of my time of care and PRN for lab draws.	Educate on cardiac diet and foods low in salt and LDL cholesterol and high in HDL cholesterol as needed during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: **Acute Pain: Chest**

Goal 1: The patient will report a pain level of 0 on a numeric pain scale by the end of my time of care.

Goal 2: The patient will verbalize ways to control angina by medications by the end of my time of care.

Relevant Assessments (Prewrite) What assessments pertain to your patient's problem? Include timeframes	Multidisciplinary Team Intervention (Prewrite) What will you do if your assessment is abnormal?
Assess the patients perception of pain using a numeric pain score from 0-10 at the beginning of my time of care and as needed.	Administer nitroglycerin as ordered by physician.
Monitor VS for signs of pain, including HR, BP, and RR at the beginning of my time of care and as needed.	Encourage rest and deep breathing exercises to relieve pain as needed by complaints of pain.
Monitor the patient's body language for signs of pain as evidenced by facial grimacing, groaning, and guarding throughout my time of care.	Provide emotional support and therapeutic communication addressing all fears and concerns as needed throughout my time of care.
Assess the patients pain characteristics as needed by any reports of pain.	Administer analgesics as ordered by the provider as needed during my time of care.
Evaluate environmental factors that may contribute to the patients pain during my time of care.	Provide a comfortable environment with minimal stimuli by providing blankets, dimming the lights, and reducing noise levels throughout my time of care.
Evaluate any previous treatments and relief of pain as needed throughout my time of care.	Discuss alternative therapies that have worked previously to treat the patients pain with primary RN and physician as needed during my time of care.

To Be Completed During the Simulation:

Actual Patient Problem: Ineffective Airway Clearance

Clinical Reasoning: intermittent stridor, bilateral wheezing in posterior and anterior lungs, shellfish and contrast dye allergy, “I can’t catch my breath”, ashen skin, dusky nailbeds.

Goal: Patient will maintain a patent airway during my time of care. Met: Unmet:

Goal: Patient will have clear inspiratory breath sounds at the end of my time of care. Met: Unmet:

Actual Patient Problem: Decreased Cardiac Output

Clinical Reasoning: history of blocked arteries, STEMI on admission, cool/clammy skin with increased agitation and restlessness, MAP 54 and systolic pressure 88, HR 96, decreased UO from baseline.

Goal: Patient maintains adequate cardiac output aeb HR 60-100 beats per min during my time of care.
Met: Unmet:

Goal: Patient maintains adequate cardiac output aeb peripheral pulses of +2 during my time of care.
Met: Unmet:

Additional Patient Problems: Acute Pain, Electrolyte Imbalance, Risk for peripheral neurovascular dysfunction, Deficient Knowledge: cardiac health

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
Decreased Cardiac Output	1725	Arrived via EMS to the ED with complaints of chest pain. Received 3 doses of nitroglycerin and a 325 mg baby aspirin at home with wife. Complains of squeezing pain in chest rated an 8/10 and difficulty breathing. Hx of blocked arteries. ST elevation on EKG. HR: 104, BP: 100/68, Spo2: 96% on 4L NC	1730	Maintained oxygen at 4L NC.	1735	Normal sinus rhythm with PVC’s. SpO2 98% on 4L NC.
			1745	Transferred to cardiac cath lab where percutaneous transluminal coronary angioplasty with stent placement in the LAD was performed by the cath team.		
Acute Pain: Chest	1740	Complains of squeezing pain in chest rated an 8/10.	1745	Administered 2 mg morphine IV bolus as ordered by the provider.	1820	Reports chest pain 0/10.
Decreased Cardiac Output	1742	SpO2 98% on 4L NC.	1743	Titrated oxygen to 2 L.	1800	SpO2 98% on 2L NC.
Risk for peripheral neurovascular dysfunction	1745	Percutaneous transluminal coronary angioplasty with stent placement in the LAD was performed by the cath team.	2010	Educated to gently hold down on insertion site when coughing and to remain flat with right leg in a straight position for a minimum of 2 hours. Maintained HOB 0 degrees.	2200	Diminished pedal pulses in right foot in comparison to left foot. “It feels like I am sitting on something wet.” 3 inch hematoma on right groin dressing with bright red blood on dressing.

Ineffective Airway Clearance	2015	“My arm and chest feel a little itchy. I ate shrimp once, which made my tongue swell, so I never ate it again.”	2020	Administered 25 mg of diphenhydramine IV bolus as ordered by the provider.	2022	“I feel like I’m catching a cold. My nose is stuffy and I can’t catch my breath.” Dyspnea with wheezing. Patent airway.
Ineffective Airway Clearance	2022	“I feel like I’m catching a cold. My nose is stuffy and I can’t catch my breath.” Dyspnea with wheezing. Skin ashen with dusky nail beds. Stridor heard intermittently. SpO2 98% 2L NC. Patent airway.	2025 2035 2100	Applied nonbreather face mask at 15L. Notified provider of findings and called rapid response team. Administered 1 dose of epinephrine IM as ordered by the provider. Updated medical history to include shellfish and contrast dye allergies.	2100 2100	“I feel much better and I am breathing much better. I am no longer itchy.” SpO2 100% on 100% non breather mask at 15 L. Patent airway. No wheezing or stridor heard.
Decreased Cardiac Output	2100	SpO2 100% on 100% non breather mask at 15 L..	2105	Changed nonbreather mask to 3L NC.	2115	SpO2 100% on 3L NC.
Risk for peripheral neurovascular dysfunction	2200	Diminished pedal pulses in right foot in comparison to left foot. “It feels like I am sitting on something wet.” 3 inch hematoma on right groin dressing with bright red blood on dressing.	2205	Maintained pressure on right groin insertion site for 10 minutes. Changed dressing on the assertion site.	2230	No further bleeding noted during my time of care. Hematoma 6 inches in diameter. Pressure dressing remains clean and dry.
Electrolyte Imbalance	2300	Potassium 3.2 on most recent lab drawl.	2330	Notified provider of findings. Administered 20 mEq of potassium as ordered by the provider.	Day 2	Potassium 3.4 on morning lab draw.
Deficient Knowledge: cardiac health	0040	Assessed lifestyle, habits, and diet. “I did stop smoking a month ago.” “My wife and I go on walks occasionally.”	0100	Educated on importance of daily exercise, including walking. Encouraged to take medication regularly, decrease sodium intake, switch red meat for chicken and fish some days of the week, and to consume fruit and vegetables regularly. Left teaching point pamphlets at the bedside.	0105	“Ok thank you, I will be sure to take a look at these.”
Decreased Cardiac Output	Day 2 1900	Skin is cold and clammy to the touch. Increasing restlessness and agitation. MAP is 54 and systolic pressure 88, HR 96. UO decreased to 48 mL/hr. Spo2 99% on 2L NC.	1905	Increased oxygen to 3L NC. Began NSS infusion at 250 mL/hr and began dobutamine drip at 2.5 mcg/kg/miL.	1920	Pulse 58, BP 78/56, SpO2 96% on 4L NC. Normal sinus with PVCs.
Decreased Cardiac Output	1920	BP 78/56 HR 58.	1930	Began norepinephrine infusion at 0.5 mcg/min.	1935	BP 98/56 on norepinephrine drip at 0.5 mcg/min. HR 64. “I feel less shaky.”
Decreased Cardiac Output	1920	SpO2 96% 4L NC.	1922	Titrated oxygen to 2L.	1935	SpO2 96% on 2L NC.
Decreased Cardiac Output / Deficient Knowledge: cardiac health	Day 3	Epinephrine and dobutamine drips discontinued during day shift. Pulse 68, BP 124/72, SpO2 98% RA.	1605 1700	Orders to transfer to cardiac stepdown unit initiated by provider. Provided education on new medications including lisinopril and blood thinners that will be continued at home. Educated on healthy eating habits and maintaining sodium restriction with wife at bedside.	1715	“Thank you for taking the time to read us these. We will be sure to review labels and do better to limit our salt intake.”

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
 CXR: no fluid or pneumothorax, no significant findings
 EKG: ST elevation; sinus rhythm with PVCs
 Troponin: 0.8 ng/mL
 Potassium: 3.2

NCLEX II (3): Health Promotion and Maintenance

Signs and Symptoms
 Difficulty breathing, 8/10 chest pain that is squeezing in feeling. HR 104, BP 100/68, SpO2 96% 4L NC. Began feeling pain while outside and was unrelieved with nitroglycerin. Reported nausea with pain.

NCLEX II (3): Health Promotion and Maintenance

Contributing Risk Factors
 Obesity
 Decreased Exercise
 Unhealthy eating habits
 History of Smoking
 Age 54
 Male
 African American

NCLEX IV (7): Reduction of Risk

Therapeutic Procedures
Non-surgical
 Dressing change and manual pressure on insertion site.
Surgical
 Percutaneous transluminal coronary angioplasty with stent placement in the LAD

Prevention of Complications
 (Any complications associated with the client's disease process? If not what are some complications you anticipate)
 Bleeding at femoral insertion site, anaphylaxis in response to contrast dye, cardiogenic shock

NCLEX IV (6): Pharmacological and Parenteral Therapies

Medication Management
 Aspirin
 Nitroglycerin
 Morphine
 Dobutamine
 Norepinephrine
 0.9% Saline Solution

NCLEX IV (5): Basic Care and Comfort

Non-Pharmacologic Care Measures
 Provided uninterrupted period of rest and relaxation. Dimmed lighting and provided blankets. Oxygen therapy via nonrebreather and NC.

NCLEX III (4): Psychosocial/Holistic Care Needs

Stressors the client experienced?
 Fear of not knowing what was going on and wanting to feel better. Guilt of eating and exercise habits.

Client/Family Education

Document 3 teaching topics specific for this client.
 • Restricting sodium intake to 1,500 mg a day.
 • Replace salt with other spices like cumin.
 • Report any persistent cough while taking new lisinopril medication.

NCLEX I (1): Safe and Effective Care Environment

Multidisciplinary Team Involvement
 (Which other disciplines were involved in caring for this client?)
 Cardiac cath team, pharmacy, dietary, charge nurse, primary physician, EMS.

Patient Resources
 Provided pamphlets on dietary changes, including food groups, sodium intake, and meat selection.

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 caring for this client was the importance of getting a patient with a STEMI to cath lab within 90 minutes. From the beginning of this patient's care, the staff in the simulation, including EMS, worked quickly to transport the patient to the cardiac cath lab to perform PCI. If the patient had not arrived with ample time, the patient may have experienced greater adverse outcomes.

2. What was something that surprised you in the care of this patient?

When caring for this client, I was surprised to see how rapidly a client's condition can deteriorate. Especially in critical care, many things happen at once, and the changes can be extremely subtle. This has reinforced my understanding of the necessity of frequent assessments and reassessments when caring for any client.

3. What is something you would do differently with the care of this client?

If I took care of this client again, I would take more time when doing my math equation. The first time I had completed the simulation, I was successful overall but I needed improvement due to my math error in calculating. Due to this, I performed the sim again to fast forward to the math question. I was able to practice with the numbers again to see how ATI does the calculation and compared it to my original math and my new, correct, math. The charge nurse in the simulation had caught my error, which prevented me from overdosing the client, but dangerous adverse outcomes could have occurred.

4. How will this simulation experience impact your nursing practice?

This stimulation will always remind me of the importance of listening to your patient. Throughout the simulation, the patient expressed his fears, complaints, and perceptions that were necessary in finding critical assessments like the bleeding from the insertion site and anaphylaxis. By listening to the patient first, we were able to act quickly and prevent further complications that may have occurred if the patient did not speak up. This is especially important for me as I will be working in a critical care environment where patients may not be able to speak up limiting my subjective data, which makes meticulous and frequent thorough reassessments even more important.