

ATI Real Life Student Packet  
N202 Advanced Concepts of Nursing  
2026

**Student Name:** \_\_\_\_\_ Yana Quel \_\_\_\_\_

**ATI Scenario:** \_\_\_\_\_ Acute 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

**4 chambers** [ right atrium (RA) , left atrium (LA), right ventricle (RV), left ventricle (LV) ] composed of **3 layers** from inner to outer: endocardium, myocardium, epicardium. The **pericardium** covers the heart: inner (visceral, part of epicardium), and outer (parietal). **10-15mL of pericardial fluid** sits between the pericardial layers called the pericardial space to prevent friction during contraction. **Septum** vertically divides heart (interatrial and interventricular). The atrial myocardium is thinner than the ventricles (LV 2-3x thicker to pump blood into systemic circulation)

**-Blood flow through heart:** RA receives deox blood from systemic circulation from the SVC and IVC and coronary sinus (deox blood from coronary veins) → tricuspid valve → RV → pulmonic valve into pulmonary artery into pulmonary circulation → oxygenated blood from lungs to LA from pulmonary veins → through mitral valve → LV → aortic valve → aorta and then to systemic circulation

**-valve function:** mitral (bicuspid) and tricuspid valves are attached to thin strands of fibrous tissue called chordae tendinae anchored in papillary muscles of ventricles, preventing eversion into atria. Pulmonic/aortic (semilunar valves) prevent backflow into ventricles during contraction.

-myocardium has it's own blood supply (coronary circulation). Blood flows into 2 coronary arteries during diastole (relaxation). Left coronary artery from aorta and divides: 1. Left anterior descending artery and left circumflex artery (both supply LA, LV, interventricular septum, and part of RV. Right coronary artery from aorta and its' branches supply the RA, RV, and part of LV posterior wall. In 90% of people, AV node and bundles of His receive blood from R coronary artery (so blockage can cause serious conduction defects).

**-Conduction system:** Action potential (AP) is an electrical impulse that starts depolarization of heart cells, leading to heart muscle contraction. Normally begins in sinoatrial (SA) node through interatrial pathways to depolarize atria (contraction) → atria to AV node through internodal pathways → bundle of His and L bundle branches (→ anterior and posterior) and R bundle branches → walls of RV/LV through Purkinje fibers and delivers this within 0.12sec.

-Refractory period: compensatory mechanism during ventricular contraction called an absolute refractory period when muscle doesn't respond to new stimuli, then goes to a relative refractory period by early diastole

**-measured by ECG:** P wave (firing of SA node; depolarization of atria), QRS complex (depolarization from AV node throughout ventricle, T wave (repolarization of ventricles), U wave (if seen, may represent repolarization of Purkinje fibers; large w/ hypokalemia)  
-Systole (contraction) ejects blood from ventricles and diastole (relaxation) allows for blood to refill ventricles, and **cardiac output** is the amount of blood pumped by each ventricle in 1 minute.  $CO = SV$  (stroke volume) x HR (normal is 4-8L/min. Can be maintained by the cardiac reserve responding.

**-Frank-Starling Law:** the more myocardial fibers are stretched, the greater force on their contraction. The stretching before contraction is called preload, and can be increased with disorders. Afterload is peripheral resistance against the LV to pump. Both RV and LV work against resistance and the RV pumps against the afterload of pulmonary arterial resistance.

**NCLEX IV (7): Reduction of Risk**

Pathophysiology of Disease

-abrupt partial or complete occlusion of blood flow through a coronary artery w/ thrombus caused by plt aggregation → irreversible myocardial death (necrosis)

**-STEMI:** ST elevation in ecg leads facing area of infarction. Significant if 1+ block above isoelectric line in at  $\geq 2$  contiguous leads except V2 & V3 (must be 2+ blocks or more). **AN EMERGENCY.** Heart muscle hypoxic in 10 sec → anaerobic met. → lactic acid → stimulates nerves to send pain messages through thoracic wall & releases troponins. Heart cells viable in 20 min. need cath within 90 min of contact or 30min thrombolytics if no PCI

**-NSTEMI:** nonocclusive thrombus, does not cause ST segment elevation. May or may not show ST elevation depression and/or T wave inversion. Need cath in 12-72hr.

**-NSTEMI/STEMI:** may show hypokinesia (worsening myocardial contractility) or akinesia (absent myocardial contractility) in infarcted areas.

-acute MI process evolves over hr-days. The earliest tissue to become ischemic is the subendocardium. If ischemia persists, takes 4-6hrs for entire heart thickness to necrose. If not completely occlusive, can take up to 12 hrs.

-most affect the LV & can occur in 1+ location, esp. if coronary artery is involved.

-transmural: entire thickness of myocardium

-described based on location of damage

Anterior: V1-V4 (LAD)

Inferior: II, III, aVf (RCA)

Lateral: V5-V6, I, aVL (Left circumflex)

-time is tissue! Better if developed collateral circulation

-release of catecholamines to ischemic cells → vasoconstriction

<p><b>-arteries:</b> away from heart (oxygenated blood except pulmonary artery. Thick walls of elastic tissue to cushion from pressure and recoil to propel. Some contain smooth muscle. Innermost layer is endothelium that maintains hemostasis, promote blood flow, and inhibit coagulation</p> <p><b>Arterioles:</b> more smooth muscle and little elastic tissue &amp; respond to low O2 and high CO2</p> <p><b>-capillaries:</b> endothelial cells. Exchange of nutrients and metabolic end-products. Connect arterioles and venules</p> <p><b>-veins:</b> to heart (deox blood). Low-pressure, high-volume</p> <p><b>-venules:</b> collect blood from capillaries and bring it to larger veins</p> <p><b>-autonomic NS</b> (para- sympathetic NS) sympathetic ↑ HR, speed through AV node, and force of contractions. Parasympathetic: by vagus nerve to slow HR by ↓ impulses from SA to AV. Alpha 1 adrenergic receptors in smooth muscles and result in vasoconstriction vs. vasodilation</p> <p><b>-baroreceptors:</b> in aortic arch and carotid sinus sensitive to stretch and pressure and sends info to vasomotor center in brainstem, inhibiting SNS and enhances PNS ↓ HR and vasodilation</p> <p><b>-chemoreceptors:</b> in aortic/carotid bodies and medulla causing changes in respiratory system (O2 &amp; CO2)</p> <p><b>-blood pressure:</b> systolic: peak pressure exerted against arteries when heart contracts. Diastolic: residual pressure in arterial system during relaxation. SVR is the force opposing blood movement. <math>BP = CO \times SVR</math>.</p> <p><b>-Korotkoff sounds:</b> turbulent blood flow through compressed artery</p> <p>-pulse pressure: difference between SBP and DBP, normally about 1/3 of SBP</p> <p>-mean arterial pressure (MAP): average pressure within the arterial system = <math>[(SBP + 2DBP) / 3]</math></p> <p>-sinus rhythm: starts in SA node at 60-100bpm following normal conduction pathway</p>	
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**To Be Completed Before the Simulation**

Anticipated Patient Problem: Decreased cardiac output

Goal 1: SBP b/t 100-125 & DBP b/t 70-85 during my time of care.

<p align="center"><b>Relevant Assessments</b></p> <p>(Prewrite) What assessments pertain to your patient's problem? Include timeframes</p>	<p align="center"><b>Multidisciplinary Team Intervention</b></p> <p>(Prewrite) What will you do if your assessment is abnormal?</p>
<p align="center">Assess BP &amp; HR q4hr &amp; prn</p>	<p align="center">Administer nitroglycerin as ordered</p>
<p align="center">Assess respiratory effort and SpO2% q4hr &amp; prn</p>	<p align="center">Administer supplemental O2</p>
<p align="center">Assess skin temperature, capillary refill, peripheral/apical pulses, &amp; UO q4hr &amp; prn</p>	<p align="center">Administer heat or cold depending on if s/p cardiac arrest</p>
<p align="center">Assess cardiac rhythm on tele prn</p>	<p align="center">Perform BLS/ACLS &amp; go to cath lab within designated time frame of arrival</p>
<p align="center">Assess cardiac enzymes &amp; lab markers as drawn (troponin, CK, BNP)</p>	<p align="center">Administer ASA/Heparin as ordered</p>
<p align="center">Assess electrolyte status as drawn (K, Mg, Ca)</p>	<p align="center">Correct electrolyte imbalances with IVPB / IVP as ordered</p>

Goal 2: Maintain SpO2 level >92% on RA during my time of care.

**To Be Completed Before the Simulation**

Anticipated Patient Problem: Acute pain

Goal 1: Pain score is 4 or less on a 0-10 scale during my time of care.

<b>Relevant Assessments</b>	<b>Multidisciplinary Team Intervention</b>
(Prewrite) What assessments pertain to your patient's problem? Include timeframes	(Prewrite) What will you do if your assessment is abnormal?
Assess angina or chest pain/tightness characteristics q4hr & prn	Administer nitroglycerin as ordered
Assess pain level q4hr & prn	Administer morphine as ordered if nitro doesn't work & to reduce anxiety
Assess secondary characteristics such as SOB, nausea, & diaphoresis q4hr & prn	Maintain HOB 30 degrees or less to decrease myocardial demand
Assess demonstration of deep breathing exercises qshift	Educate on breathing exercises, such as box breathing
Assess ability to perform ADLs q4hr & prn	Pre-medicate for pain if working with PT or performing other ADLs
Assess facial grimacing, holding onto chest, or restlessness prn	Evaluate effectiveness of pain medications within 30-60min., depending on class & route.

Goal 2: Will demonstrate distraction techniques such as breathing exercises, calling family/friends on the phone, and listening to music.

**To Be Completed During the Simulation:**

<p><b>Actual Patient Problem:</b> Decreased cardiac output                  Goal: SBP will remain &gt;100mmHg during my time of care</p>	<p><b>Clinical Reasoning:</b>                  Met: <input type="checkbox"/> Unmet: <input type="checkbox"/></p>
<p>Goal: SpO2 will be maintained &gt;96% on RA during my time of care.</p>	<p>Met: <input type="checkbox"/> Unmet: <input type="checkbox"/></p>
<p><b>Actual Patient Problem:</b> Impaired Immune Response                  Goal: Temperature will be maintained b/t 36-38 celsius during my time of care.</p>	<p><b>Clinical Reasoning:</b>                  Met: <input type="checkbox"/> Unmet: <input type="checkbox"/></p>
<p>Goal: Will not c/o s/sx of anaphylactic reaction such as SOB, itchiness, or nasal d/c.</p>	<p>Met: <input type="checkbox"/> Unmet: <input type="checkbox"/></p>

Additional Patient Problems: Def. knowledge r/t medications, cath lab, & s/p MI lifestyle changes; acute pain r/t hypoxic myocardium; risk for bleeding r/t hematoma formation s/p cath lab, F/E imbalance r/t K level of 3.2 & NPO status

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
Dec. CO	1655 at home	“I just don’t feel well” c/o chest tightness & squeezing. Forgot nitro tablets when shoveling	1655	Wife administered 3 doses of nitroglycerin & 325 mg ASA & called 911 after 5min of no CP relief.	1722 at hospital.	Still c/o CP, tightness, dizziness, & nausea while stating it is “hard to breathe”. HR 104, T 37.2 C, RR 26, BP 96/56, SpO2 94% 4L NC, pain 8/10. Ekg in ambulance showed prolonged P wave, PVCs, & ST elevation. Ashen skin
Acute pain / def. knowledge	1725	c/o 8/10 pain. HR 106, RR 24, BP 100/66, SpO2 96% 4L NC	1730	MD notified pt he is experiencing a heart attack r/t CAD blockage called a STEMI. He stated the pt needs to go to the cath lab. He further educated wife on the procedure.	1730	Pt stated he wants the procedure to relieve the pain. HR 104, RR 22, BP 98/60, O2 97% 4L NC. Pain 8/10
Acute pain/ def.	1735	CP 8/10 pain. HR 104, RR 22, BP	1745	Administered 2mg morphine IVP.	1750	RR 22. Verbalized understanding of

knowledge		102/68, SpO2 95% 4L NC. Pain 8/10		Educated pt & wife he will go to ICU after procedure.		going to cath lab & ICU after and wife walks with them to the cath lab
Impaired immune response/ def. knowledge	2100	T 36.6, HR 96, RR 14, BP 112/66, SpO2 98% 2L NC, art BP 114/70, CVP 10, R fem. Dressing clean & dry. NSR w/ PVCs. Pain 0/10. Foley catch clear yellow, CVP cath intact w/ opaque dsg w/ scant red drainage. A-line L radial intact w/ opaque dsg, no drainage. R vasc closure device clean & dry w/o bleeding or hematoma. Denies SOB & CP. Reports irritating cough, nasal congestion, & arm itchiness.	2105	Educates when coughing to splint over insertion site & that RN will do frequent assessments. Educates to notify immediately if has CP again.	2110	HR 98, RR 20, BP 118/70, SpO2 96% 2L NC. ART BP 118/72. R fem site clean & dry. NSR w/ PVCs. 0/10 pain. Still c/o arm itchiness.
Impaired Immune Response	2120	c/o itchiness of arms and chest, nasal congestion, feels like a cold coming on, SOB. Lung sounds wheezing & intermittent stridor. HOB 10 degrees. Ashen skin, nailbeds dusky, appears anxious. HR 116, RR 32, O2 87% non-rebreather, ART BP 155/98, CVP 10, Sinus tach w/ PVCs	2125	Notified provider of abn. allergic reaction assessment findings. Replaced NC w/ a non- rebreather mask 15L/min w. 100% O2 for a dec. in SaO2 87%. Administered 25mg IVP diphenhydramine for itchiness. Charge nurse notified rapid response team of findings. Administered epinephrine 0.3mg IM. Documented shellfish & contrast dye as allergies in EMR w/ anaphylactic reaction.	2200	HR 88, RR 14, BP 108/74, ART BP 108/74, 100% O2 on 3L NC CVP 10. NSR w/ PVCs. R fem dsg clean & dry. Pain 0/10. Pt states "feeling much better & breathing much better." No c/o itchiness. Trop T 0.4 & trop I 0.07
Risk for	2205	7.62cm groin	2205	Applied pressure to	2230	R groin bleeding

bleeding		hematoma on R fem insertion site. Dsg saturated w/ bright red blood.		R groin site after removing dsg, Applied new pressure dsg & notified provider. Outlined hematoma area. Drew stat labs from provider orders. Flushed IVs per order sets.		stopped. Hematoma 6in. Hgb 14.2
F/E Imbalance	2245	K 3.2. NSR w/ PVCs	2300	Notified MD & ordered K 20mEq PO BID. Administered K w. water & cracker.	2305	NSR w/ PVCs
Def. knowledge	2330	Pt states he walks at work & does not have time to go to the gym during the week or after work. He eats fast food 4x/wk, & eats steak & breads. Diets don't work for him but he did stop smoking 1mo ago.	2345	RN educates these are all modifiable risk factors: eat food low in sat. fat & high in fiber. 4-6 servings of fruit & veggies. Red meat replaced w/ fish or chx. Low sodium diet & taking meds regularly.	2350	Pt verbalized understanding of modifiable risk factors.
Dec. CO	2 days since cath: 1940	T 36.8, HR 96, RR 12, BP 80/52, O2 99% 3L NC, ART BP8 78/52, CVP 7, sinus tach w/ PVCs, MAP 43, skin cold & clammy, restless & agitated, UO dropped 48mL/hr over past few hours.	1945	MD notified of findings. Calculated drip rate for dobutamine & had charge RN verify for a second check. Started dobutamine drip & encouraged to deep breathe. Started Levo drip at 0.5mcg/min NSS 250mL/hr	2010	HR 58, RR 12, BP 78/56, O2 96% 4L NC, ART BP 78/56, CVP 8, sinus brady
Dec. CO	2040	HR 64, RR 14, Ow 96% 2L NC, ART BP 96/56, CVP 9, NSR w/ PVCs. States he is "less shaky, dizzy, or sweaty anymore"		Clustered care to offer rest period. Continued to monitor VS on monitor & maintained Levo drip for MAP >60	NEXT DAY @0900	T 36.8, RR 12, HR 68, BP 124/72, O2 98% RA, NSR
Dec. CO	0900	T 36.8, RR 12, HR 68, BP 124/72, O2 98% RA, NSR	0900	Weaned & d/c Levo & dobutamine drip, & changed NSS drip	0900	Clear breath sounds & pt states feeling much better,

				to a saline lock. D/c CVP & A line overnight.		
Def. knowledge	0930	Pt states he was talking to wife about potential lifestyle changes he wants to talk to RN about before he is transferred to the cardiac step down unit.	0945	Educated about diet & exercise, such as canned food & reading Na labels.	1000	Teaches back that he will reduce his Na intake to 1500mg/day & chose breakfast options, & states that shredded wheat cereal is a good option.
Def. knowledge	1000	Stated having a question about blood thinner & BP medications	1010	Educated about clopidogrel & ASA SEs of r/f bleeding. Notified to report a persistent dry cough w/ Lisinopril.	1015	Verbalized understanding of SEs to watch out for and will also notify providers before having dental work done.

**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

BG 118 / 122  
 RBC 5.2  
 Hbg 15.9 ; Hct: 54%  
 WBC 6  
 Plt 220  
 CK 0  
 trop T 0.2  
 Top I 0.06  
 Lactic acid (venous) 0.6  
 aPTT 34 sec.  
 PT 12 sec.  
 INR 0.9  
 Na 140  
 K 3.6  
 Cl 104  
 BUN 18  
 Cr 0.8  
 Albumin 3.6  
 Prealbumin 28  
 Total protein 6.8  
 Ca 10.2  
 Phos 4.2  
 Mg 1.6  
 ALT 28  
 AST 24  
 Cholesterol 324  
 Total bili 0.8  
 Alk phos 68  
 CO2 24  
 ABG:  
 -pH 7.35  
 -PaO2 88  
 -PaCO2 40  
 -bicarb 26  
 -SaO2 95%  
 UA  
 -clear, yellow, aromatic  
 -SG 1.030  
 -pH 6.8  
 -protein 4  
 -leukocyte neg.  
 -NO: nitrates, ketones, glucose, RBC,  
 bacteria, RBC casts, crystals  
 -WBC 2  
  
 -Hbg 14.8 (gone down)  
 -aPTT 38 sec (gone up)

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

8/10 CP  
 Nausea  
 Chest tightness & pressure  
 Dizzy  
 Hypoxic  
 SOB  
 Tachypneic, tachycardic, hypotensive  
  
 Allergic s/sx to cath dye  
 -nasal congestion, feels like a cold coming on, wheezing  
 & intermittent stridor, SOB, itchiness on arms & chest

-K 3.2 (gone down)  
-Cr. 0.7 (gone down)

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

Contributing Risk Factors

- HTN
- CAD w/ angina
- quit smoking 1 mo ago
- occasionally chews tobacco

**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)

- anaphylactic reaction to contrast dye during catheterization.
- Acute HF
- 

Therapeutic Procedures

Non-surgical

- CXR at bedside: no fluid or PTX, no enlarged shadows, no rib Fx or tumors. Aorta & aortic arch shows calcification & appears intact w/ no dilation of artery
- MRI

Surgical

- Percutaneous transluminal angioplasty w/ possible balloon dilation w/ stent placement

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

Medication Management

- O2
- NSS 1000mL, 300mL bolus then 100mL/hr
- saline lock IV w/ NSS flush 12mL q8hr & prn
- morphine 2mg IVP q10min for mod-severe CP
- saline lock w/ 12 mL flush 18hr for CVP, peripheral, & A-line
- NSS 250mL for a-line patency
- lisinopril 10mg PO daily
- amlodipine 5mg PO daily
- ASA 325mg PO daily
- clopidogrel 75mg PO daily
- naloxone 0.2mg IV bolus prn 12-3min if RR <10/min or if over sedated from morphine
- albuterol inhaler 2 puff prn for asthma
- diphenhydramine 25mg IV bolus prn 4hr for itching or restlessness
- epinephrine 0.3mg IM stat
- epinephrine 0.3mg IM prn q10-15min.
- dobutamine 250mg in D5W 250mL initial rate

**NCLEX IV (5): Basic Care and Comfort      NCLEX III (4): Psychosocial/Holistic Care Needs**

Non-Pharmacologic Care Measures

- continuous tele monitoring
- BP/HR/RR q5min
- 12 lead stat ekg: STEMI POST cath lab
- trop T now then then in 3 & 6 hr
- contin. Tele & a-line monitoring
- VS q15min for 1 hr then q30 for 1 hr then q1hr
- elevate HOB 10 degrees for 2 hr then ab lib after
- BG q8hr
- check access site & a-line assessment for bleeding/hematoma, & peripheral pulses q15min for 1 hr then q30 for 1 hr then q1 for 4 hr then q4hr
- NPO until 2300 then advance as tol
- CBC, CMP, aPTT, ABG @0600
- foley cath q1hr output for 12hr. notify if less than 0.5-1mL/kg/hr
- bed rest & keep R leg straight for 12hr until 9000
- notify provider if CP or tightness
- 12lead ekg for anaphylactic reaction to contrast dye.
- for hematoma: Cr, K, Hgb, aPTT now.

Stressors the client experienced?

- anxiety
- medication management
- lifestyle changes

2.5mcg/kg/min titrate prn  
-NSS if BP <90mmHg  
-norepi 4mg D5W 1000mL at  
0.5-1mcg/min (MAX  
30mcg/min) for a SBP >100



**Client/Family Education**

Document 3 teaching topics specific for this client.

- after cath lab position changes
- medication SEs & when to call 911
- lifestyle changes of diet & exercise

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

Multidisciplinary Team Involvement

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

-ED RN, MD, EMS, ICU RN, cath lab RN,  
cardiologist, charge RN

Patient Resources

- d/c paperwork of med. Rec.
- HF knowledge
- lifestyle changes & pamphlet
- when to call 911

**Reflection Questions**

Directions: Write reflection including the following:

1. What was your biggest “take away” from participating in the care of this client?
  - a. Because there are so many complications s/p MI, continual detailed assessments can change very quickly & need prompt Tx.
  
2. What was something that surprised you in the care of this patient?
  - a. I was surprised to find him having an allergic reaction to the contrast dye. At first, I was confused why he might be itchy, and then I was able to piece it together as the day went on. Even something so small as a new allergy can cause a major impact and if not caught sooner, could have impaired his breathing extensively.
  
3. What is something you would do differently with the care of this client?
  - a. I would have decreased the HOB of the pt before he went to the cath lab to decrease the O2 demand on his heart to < 30 degrees & given him morphine sooner.
  
4. How will this simulation experience impact your nursing practice?
  - a. With a pt with cardiac issues, so much can go wrong really fast. It is especially important to have really good assessment skills to be able to catch small changes.