

\*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: MYOCARDIAL INFARCTION

NCLEX IV (8): Physiological Integrity/Physiological Adaptation *can withstand 20 min before cell death*

\*\* LEFT VENTRICLE IS 2-3X THICKER THAN THE R BECAUSE IT PUSHES AGAINST SYSTEMIC CIRCULATION

\*\* CORONARY CIRCULATION GETS O<sub>2</sub> TO THE  $\llcorner$  MUSCLE

\*\* CO = AMOUNT OF BLOOD PUMPED BY EACH VENTRICLE IN 1 MIN (SV X HR)

**Anatomy and Physiology**  
**Normal Structures**  
BLOOD FLOW THROUGH THE  $\llcorner$  =  
 SVC + IVC → RA → TRICUSPID VALVE  
 → RV → PULMONIC VALVE → PULMONARY ARTERY  
 → LUNGS → PULMONARY VEIN → LA → MITRAL VALVE → LV → AORTIC VALVE → AORTA → BODY

- RIGHT CORONARY ARTERY = INFERIOR BLOOD SUPPLY
- LCA = SUPPLIES CIRCUMFLEX + LEFT ANTERIOR DESCENDING
- LEFT CIRCUMFLEX = LATERAL BLOOD SUPPLY
- LAD = ANTERIOR BLOOD SUPPLY

**Pathophysiology of Disease**  
 ABRUPT STOPPAGE OF BLOOD FLOW THROUGH A CORONARY ARTERY THAT CAUSES IRREVERSIBLE CELL DEATH! ... FROM PLAQUE RUPTURE, CORONARY ARTERY THROMBUS, OR CORONARY ARTERY SPASM *usual cause!*

$\llcorner$  DOES NOT HAVE ENOUGH O<sub>2</sub> R/T BLOCKAGE → ANAEROBIC METABOLISM → LACTIC ACID SPILLING → TELLS NERVES TO SEND PAIN MESSAGE → CHEST PAIN!!

- NSTEMI = NON-OCCLUSIVE THROMBUS
- STEMI = OCCLUSIVE THROMBUS (EMERGENCY!)

NCLEX IV (7): Reduction of Risk

**Anticipated Diagnostics**  
**Labs**

12-LEAD EKG (EXTENT + TREATMENT)  
 • STEMI = ST ELEVATION IMM ABOVE ISOMETRIC LINE  
 • NSTEMI = ST DEPRESSION AND/OR T-WAVE INVERSION

TROPONIN = MOST INDICATIVE! (>19 OR INCREASE BY 20% W/ SECOND DRAW)

**Additional Diagnostics**

- CK-MB, MYOGLOBIN
- CARDIAC CATH → DX + EVALUATE EXTENT OF DISEASE IN NSTEMI

*Present in the leads of the area of the  $\llcorner$  affected*

NCLEX II (3): Health Promotion and Maintenance

**Contributing Risk Factors**

- Age
- FAMILY HISTORY
- ELEVATED SERUM LIPIDS
- HYPERTENSION
- TOBACCO USE
- OBESITY

**Signs and Symptoms**  
 SUDDEN, CRUSHING, RADIATION CHEST PAIN THAT CONTINUOUS DESPITE REST + MEDICATION. MAY RADIATE TO NECK, JAW, ARM

- \* DIAPHORESIS, VASOCONSTRICTION OF PERIPHERAL BLOOD VESSELS, COOL + CLAMMY SKIN
- \* INCREASE HR + BP... THEN DECREASED BP
- \* CRACKLES, JVD, ABNORMAL  $\llcorner$  SOUNDS
- \* NAUSEA + VOMITING
- \* FEVER

NCLEX IV (7): Reduction of Risk

**Possible Therapeutic Procedures**

**Non-surgical**  
PERCUTANEOUS CORONARY INTERVENTION, THROMBOLYTICS

**Surgical**  
 CORONARY ARTERY BYPASS GRAFT, MIDCAB

**Prevention of Complications**  
 (What are some potential complications associated with this disease process)

- MOST COMMON = DYSTHYMIA'S
- OTHERS = HF, CARDIOGENIC SHOCK, ACUTE PERICARDITIS, ACUTE PULMONARY EDEMA, THROMBOEMBOLI, PAPILLARY WALL RUPTURE

NCLEX IV (6): Pharmacological and Parenteral Therapies

**Anticipated Medication Management**

- O<sub>2</sub> FOR 24-48 HOURS, KEEP O<sub>2</sub> SAT > 93%
- MORPHINE
- OXYGEN
- NITROGLYCERIN
- ASPIRIN
- THEN... ADD BETA BLOCKERS AND ACE

NCLEX IV (5): Basic Care and Comfort

**Non-Pharmacologic Care Measures**

- BED REST/LIMITED ACTIVITY FOR 12-24H AFTER
- CONTINUOUS  $\llcorner$  MONITORING
- ASSIST W/ ADL'S
- CLEAR LIQUID DIET, THEN ADVANCE TO CARDIAC DIET

NCLEX III (4): Psychosocial/Holistic Care Needs

**What stressors might a patient with this diagnosis be experiencing?**

THE NEED TO MAKE LIFESTYLE CHANGES, HOSPITAL COST, POST SURGERY, PAIN!, HAVING TO REST + TAKE IT EASY AFTERWARDS

Client/Family Education

**List 3 potential teaching topics/areas**

- SMOKING CESSATION
- DIET MODIFICATIONS
- NEED TO FOLLOW REHAB REGIMENT

NCLEX I (1): Safe and Effective Care Environment

**Multidisciplinary Team Involvement**  
 (Which other disciplines do you expect to share in the care of this patient)

CATH LAB, CARDIOLOGIST, PT, CARDIAC REHAB, DIETICIAN, PCP

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

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

#### **Problem #1:** ACUTE PAIN: CHEST (R/T MI)

##### Patient Goals:

1. PT WILL VERBALIZE A PAIN SCORE OF ZERO ON A 0-10 SCALE BY THE END OF MY TIME OF CARE
2. PT WILL EXHIBIT INCREASED COMFORT, AS EVIDENCED BY PULSE 60-100BPM, RESPIRATIONS 10-20 BREATHS PER MINUTE, AND RELAXED MUSCLE TONE BY THE END OF MY TIME OF CARE

##### Assessments:

- QUALITY, LOCATION, SEVERITY, DURATION, ONSET, AND RELIEVING FACTORS OF PAIN Q 30 MINUTES, PRIOR TREATMENTS FOR PAIN UPON ARRIVAL, HR + BP Q ONE HOUR (DURING PAIN EPISODE AND MEDICATION ADMIN), CONTINUALLY MONITOR

##### Interventions (In priority order):

1. ADMINISTER OXYGEN AS PRESCRIBED THROUGHOUT MY TIME OF CARE KEEPING O2 SAT >93%
2. ADMINISTER NON-ENTERIC COATED CHEWABLE ASPIRIN AS PRESCRIBED
3. ADMINISTER NITROGLYCERIN AT TIME OF ADMISSION AS PRESCRIBED
4. ADMINISTER MORPHINE SULFATE IV AS PRESCRIBED
5. EDUCATE ON IMPORTANCE OF REPORTING PAIN AS SOON AS IT STARTS THROUGHOUT MY TIME OF CARE
6. EDUCATE PATIENT ON STRESS MANAGEMENT, DEEP BREATHING EXERCISES, AND RELAXATION TECHNIQUES. THROUGHOUT MY TIME OF CARE

#### **Problem #2:** RISK FOR DECREASED CARDIAC OUTPUT

##### Patient Goals:

1. PT WILL DEMONSTRATE ADEQUATE CARDIAC OUTPUT AS EVIDENCED BY UO  $\geq$  30ML/HR, SYSTOLIC BP  $>$ 100 MMHG, AND HR WITHIN 60-100BPM WITH A REGULAR RHYTHM BY THE END OF MY TIME OF CARE.
2. PT WILL PARTICIPATE IN ACTIVITIES THAT DECREASE THE WORKLOAD ON THE HEART, SUCH AS TAKING REST PERIODS THROUGHOUT THE DAY, BY THE END OF MY TIME OF CARE.

##### Assessments:

- BP + HR Q4H, SKIN COLOR/TEMPERATURE/MOISTURE Q4H, PERIPHERAL PULSES + CAPILLARY REFILL Q4H, RR RATE, RHYTHM AND BREATH SOUNDS Q4H, I+O Q8H, O2 SATURATION Q4H, PULSE OX (CONTINUOUS/Q4H)

##### Interventions (In priority order):

1. ADMINISTER OXYGEN AS PRESCRIBED THROUGHOUT MY TIME OF CARE
2. MAINTAIN ADEQUATE VENTILATION + PERFUSION BY POSITIONING IN SEMI-FOWLERSTHROUGHOUT MY TIME OF CARE.
3. CLUSTER NURSING CARE TO PROMOTE REST THROUGHOUT MY TIME OF CARE
4. ADMINISTER DIGOXIN AS PRESCRIBED THROUGHOUT MY TIME OF CARE
5. ADMINISTER DIURETICS AS PRESCRIBED THROUGHOUT MY TIME OF CARE
6. MAINTAIN FLUID RESTRICTION AS ORDERED THROUGHOUT MY TIME OF CARE

**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 (R/T Mi)

Patient Goals:

1. PT WILL VERBALIZE A PAIN SCORE OF ZERO ON A 0-10 SCALE BY THE END OF MY TIME OF CARE Met   
PT WILL EXHIBIT INCREASED COMFORT, AS EVIDENCED BY PULSE 60-100BPM, RESPIRATIONS 10-20 Unmet   
2. BREATHS PER MINUTE, AND RELAXED MUSCLE TONE BY THE END OF MY TIME OF CARE Met   
Unmet

**Problem #2:** IMPAIRED GAS EXCHANGE (R/T ALLERGIC RXN)

Patient Goals:

1. PT WILL MAINTAIN OPTIMAL GAS EXCHANGE AS EVIDENCED BY ALERT AND ORIENTED MENTATION, SP02 >93%, RR<20, HR 60-100BPM BY THE END OF MY TIME OF CARE. Met   
Unmet
2. PT DEMONSTRATES APPROPRIATE BREATHING AND COUGHING TECHNIQUES BY THE END OF MY TIME OF CARE Met   
Unmet

**PROBLEM #3:** INEFFECTIVE PERIPHERAL TISSUE PERFUSION (R/T CARDIOGENIC SHOCK)

**SOAP Notes Based on Priority Problems**

**Priority Patient Problem #1:** ACUTE PAIN: CHEST

<p><b><u>Subjective:</u></b></p> <p><i>This section explains the client symptoms. Include a narrative of the patient's complaints/concerns and/or information obtained from secondary sources.</i></p>	<p><b>Chief Complaint:</b> CHEST PAIN        C/O "SQUEEZING" CHEST PAIN THAT STARTED @ 1700 WHEN HE WAS SHOVELING HIS DRIVEWAY AND IS NOT RELIEVED BY 3 TABS OF NITROGLYCERIN + 325MG ASPIRIN</p> <p><b>PMH:</b> HYPERTENSION, CORONARY ARTERY DISEASE W/ ANGINA, ASTHMA, QUIT SMOKING 1 MONTH AGO + OCCASIONALLY CHEWS TOBACCO</p> <p><b>Allergies:</b>        PENICILLIN, PEANUTS, SULFA</p> <p><b>Current Medications:</b>        NITROGLYCERIN SUBLINGUAL TABS, LISINAPRIL, ALBUTEROL INHALER</p>
<p><b><u>Objective:</u></b></p> <p><i>This section is your clinical observations. Include, pertinent vital signs, pertinent labs and diagnostics related to priority problem.</i></p>	<p><b>Vital Signs:</b> SPO2 = 94% ON 4L VIA NC, BP = 96/56, RR = 26, PULSE = 104, TEMP = 99</p> <p><b>Labs:</b> TROPONIN T = 0.2NG/ML. 0.4NG/ML. 0.6NG/ML        TROPONIN I = 0.06NG/ML. 0.07NG/ML. 0.08NG/ML</p> <p><b>Diagnostics:</b>        ST-SEGMENT ELEVATION</p> <p><i>(Handwritten notes: C 1745, C 2145, C 0100 NEXT DAY)</i></p>
<p><b><u>Assessment:</u></b></p> <p><i>Focused assessment on your priority problem.</i></p>	<p>CONTINUOUS TO C/O CHEST PAIN AND TIGHTNESS RATED AN 8 ON A 0-10 SCALE, HAND PLACED OVER CHEST, SOB, DYSPNEIC AND C/O SICKNESS TO STOMACH AND DIZZINESS, ALERT AND ORIENTED</p>
<p><b><u>Plan</u></b>  <b><u>*Based on priority problem only</u></b></p> <p><i>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?</i></p>	<p><b>Plan:</b></p> <ul style="list-style-type: none"> <li>• 2MG MORPHINE IV (Q10MIN) FOR MODERATE TO SEVERE CHEST PAIN</li> <li>• TITRATION O2 TO MAINTAIN O2 SAT @96% OR GREATER PER NC OR NON-REBREATHER</li> <li>• PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY W/ STENT PLACEMENT IN LAD</li> </ul> <p><b>Teaching/Resources:</b></p> <ul style="list-style-type: none"> <li>• EDUCATE ON THE MODIFIABLE RISK FACTORS OF OF CAD...        —&gt; DECREASING FAST FOOD INTAKE, EATING FOODS LOW IN SATURATED FAT, INCREASING FRUITS AND VEGETABLES        DECREASING RED MEAT, DECREASING SODIUM IN DIET, WALKING AND EXERCISING MORE</li> </ul>

**Priority Patient Problem #2:** IMPAIRED GAS EXCHANGE (R/T ALLERGIC REACTION)

<p><b><u>Subjective:</u></b></p> <p><i>This section explains the client symptoms. Include a narrative of the patient's complaints/concerns and/or information obtained from secondary sources.</i></p>	<p><b>Chief Complaint:</b></p> <p>C/O ITCHINESS OVER CHEST AND ARM, IRRITATING COUGH AND NASAL CONGESTION</p> <p>PT MENTIONED TONGUE SWELLING WHEN EATING SHELLFISH IN THE PAST</p>
<p><b><u>Objective:</u></b></p> <p><i>This section is your clinical observations. Include vital signs, pertinent labs and diagnostics related to priority problem.</i></p>	<p><b>Vital Signs:</b> PULSE = 116BPM, RR = 32/MINUTE, BP = 155/98        SPO2 = 87% ON NON-REBREATHER</p> <p><b>Labs:</b></p> <p><b>Diagnostics:</b>        TELE=TACHYCARDIA W/ PVC'S</p>
<p><b><u>Assessment:</u></b></p> <p><i>Focused assessment on your priority problem.</i></p>	<p>DYSPNEA, WHEEZING AND INTERMITTENT STRIDOR HEARD UPON AUSCULTATION, APPEARS ASHEN, NAIL BEDS DUSKY, ANXIOUS</p>
<p><b><u>Plan</u></b>  <b><u>*Based on priority problem only</u></b></p> <p><i>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?</i></p>	<p><b>Plan:</b></p> <ul style="list-style-type: none"> <li>• 25MG DIPHENHYDRAMINE VIA IV BONUS</li> <li>• NONREBREATHER FACE MASK INCREASED TO 15L</li> <li>• CALL RAPID RESPONSE TEAM</li> <li>• EPINEPHRINE 0.3MG IM FOR ANAPHYLAXIS</li> </ul> <p>** ADD SHELLFISH ALLERGY TO PATIENT CHART</p> <p><b>Teaching/Resources:</b></p> <ul style="list-style-type: none"> <li>• EDUCATE TO NOTIFY PROVIDER OF SHELLFISH ALLERGY/CONTRARY DYE ALLERGY</li> </ul>

**Priority Patient Problem #2:** INEFFECTIVE PERIPHERAL TISSUE PERFUSION

<p><b><u>Subjective:</u></b></p> <p><i>This section explains the client symptoms. Include a narrative of the patient's complaints/concerns and/or information obtained from secondary sources.</i></p>	<p><b>Chief Complaint:</b></p> <p>NURSE NOTED PT IS NOT PROGRESSING AS WELL AS EXPECTED FROM PROCEDURE 2 DAYS AGO, PRESENTS W/ SYMPTOMS INDICATIVE OF POSSIBLE CARDIOGENIC SHOCK</p> <p>AGITATED + RESTLESS</p>
<p><b><u>Objective:</u></b></p> <p><i>This section is your clinical observations. Include vital signs, pertinent labs and diagnostics related to priority problem.</i></p>	<p><b>Vital Signs:</b> BP = 82/48, P = 96BPM</p> <p><b>Labs:</b> BUN = 20</p> <p><b>Diagnostics:</b> MAP OF 54 MMHG ARTERIAL BP = 88/54,</p>
<p><b><u>Assessment:</u></b></p> <p><i>Focused assessment on your priority problem.</i></p>	<p>NOT PROGRESSING AS WELL AS EXPECTED FROM PROCEDURE</p> <p>PRESENTING W/ AGITATION + RESTLESSNESS, SKIN IS COLD + CLAMMY, URINE OUTPUT IS DROPPING (TO 45ML/HR), DIAPHORETIC, SHAKINESS</p>
<p><b><u>Plan</u></b>  <b><u>*Based on priority problem only</u></b></p> <p><i>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?</i></p>	<p><b>Plan:</b></p> <ul style="list-style-type: none"> <li>• DOBUTAMINE DRIP @ 2.5MCG/KG/ML (16.5ML/HR) - 250MG DOBUTAMINE IN D5 IN WATER</li> <li>• 0.9% SODIUM CHLORIDE 1000ML @ 250ML/HR (MAY INCREASE TO 1000ML OVER 1 HOUR ONE TIME FOR BP LESS THAN 90</li> <li>• NOREPINEPHRINE 4MG DEXTROSE 5% IN WATER @ 0.5 TO 1 MCG/MIN (MAX = 30MCG/MIN)</li> </ul> <p><b>Teaching/Resources:</b></p> <p>EDUCATE PT ON WHAT IS GOING ON/MEDICATIONS GIVE TO HELP DECREASE ANXIETY</p>

**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?

MY BIGGEST TAKE-AWAY FROM PARTICIPATING IN THE CARE OF THIS PATIENT WAS TO ALWAYS EXPECT THE WORST AND ASSESS FOR IT AS WELL AS TO USE MY RESOURCES. THE PRIMARY NURSE IN THIS SCENARIO WAS CONSTANTLY ASSESSING THE PATIENT AND CAUGHT ALL OF THE COMPLICATIONS QUICKLY. THIS OPTIMIZED THE PATIENTS OUTCOME. HE ALSO USED HIS CO-WORKER TO BOUNCE IDEAS OF OFF AND GET A BETTER UNDERSTANDING OF WHAT WAS GOING ON WITH HIS PATIENT. THIS WILL IMPACT MY FUTURE NURSING PRACTICE BY ENCOURAGING ME TO PAY MORE ATTENTION TO DETAIL AND TO USE MY RESOURCES/CO-WORKERS TO ALWAYS CONTINUE LEARNING. THIS WILL ALSO IMPACT ME BY ENCOURAGING MY TO ALWAYS ANTICIPATE COMPLICATIONS AND PREPARE FOR THEM/REACT QUICKLY.

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Time Allocation: 8 hours

# Module Report

Tutorial: Real Life RN Medical Surgical 4.0

Module: Myocardial Infarction Complications



Individual Name: **Ava Moroz**

Institution: **Margaret H Rollins SON at Beebe Medical Center**

Program Type: **Diploma**

## Standard Use Time and Score

	Date/Time	Time Use	Score
Myocardial Infarction Complications	2/27/2023 2:20:13 PM	1 hr 38 min	Satisfactory

## Reasoning Scenario Details

**Myocardial Infarction Complications - Use on 2/27/2023 12:56:38 PM**

### Reasoning Scenario Performance Related to Outcomes:

\*See Score Explanation and Interpretation below for additional details.

Body Function	Strong	Satisfactory	Needs Improvement
Cardiac Output and Tissue Perfusion	90.9%		9.1%
Cognition and Sensation	100%		
Integument		100%	
Oxygenation	100%		
Regulation and Metabolism	100%		

NCLEX RN	Strong	Satisfactory	Needs Improvement
RN Management of Care	100%		
RN Pharmacological and Parenteral Therapies	83.3%		16.7%
RN Reduction of Risk Potential	100%		
RN Physiological Adaptation	50%	50%	

QSEN	Strong	Satisfactory	Needs Improvement
Safety	85.7%	14.3%	
Patient-Centered Care	100%		
Evidence Based Practice	83.3%		16.7%

### Decision Log:

<b>Scenario</b>	Mr. Davis has taken an initial dose of nitroglycerin.
<b>Question</b>	Mr. Davis has taken the first dose of nitroglycerin. Which of the following actions should be taken next?
<b>Selected Option</b>	Mr. Davis should chew the next 2 doses of nitroglycerin tablets if his chest pain continues after the first dose.
<b>Rationale</b>	The prescribed route of administration for nitroglycerin tablets is sublingual. Nitroglycerin is more rapidly absorbed through the mucous membranes under the tongue. The medication bypasses the liver and enters the blood stream immediately, resulting in lower dosage and improved efficacy.

#### Optimal Decision

<b>Scenario</b>	Nurse Christine reviews Mr. Davis's a 12-lead ECG.
<b>Question</b>	Nurse Christine is reviewing Mr. Davis' ECG strip, which was completed at 1725. Which pattern on the ECG strip is the priority finding? (You will find hot spots to select in the artwork below. Select only the hot spot that corresponds to your answer.)
<b>Selected Option</b>	137,36,147,36,137,49,147,48
<b>Rationale</b>	The priority finding is the ST-segment elevation possibly indicating an acute coronary event, which is the greatest risk to Mr. Davis.

#### Optimal Decision

<b>Scenario</b>	Nurse Christine prepares to initiate prescriptions.
<b>Question</b>	Nurse Christine is preparing to initiate the prescriptions for Mr. Davis. Which of the following prescriptions should she expect to initiate? (Select all that apply.)
<b>Selected Ordering</b>	Chest x-rayTroponin levelMorphinePotassium and creatinine levels
<b>Rationale</b>	Nurse Christine should expect to initiate a bedside chest x-ray to rule out chest pain resulting from a dissecting aorta. A CAT-scan is ordered if the chest x-ray indicates the client has a dissecting aorta. Troponin is a cardiac enzyme, and when elevated, is an early indicator of myocardial cell damage. Morphine is administered to relieve pain, reduce myocardial oxygen consumption, and facilitate vasodilation. Potassium and creatinine are drawn for a baseline prior to the cardiac catheterization. A client having an ST-segment elevation myocardial infarction (STEMI) will not have an MRI before having a heart catheterization because this would delay the initiation of the cardiac catheterization and thus prohibit the provider meeting the 60-minute time-frame from the arrival to the facility to intervention.

<b>Scenario</b>	Nurse Carl is determining the priority action to take when Mr. Davis is itching.
<b>Question</b>	Mr. Davis is reporting itching over his arms and chest. What is the most appropriate action Nurse Carl should take? (Type your response in the field below and click "Submit" to compare your answer to the expert response.)
<b>Selected Option</b>	Check EMR for shellfish allergy. Notify the provider of the allergy and complaint of itching (allergic reaction from contrast dye used during cardiac cath). Assess skin and prepare to administer Diphenhydramine.
<b>Rationale</b>	The priority action nurse Carl should take is to check Mr. Davis's medical record for a shell fish allergy. Nurse Carl should recognize the possibility of an allergic reaction related to a shellfish allergy. Record the allergy to shellfish in the medical record and notify the provider of the allergy and Mr. Davis's report of itching. The provider can determine if Mr. Davis is having a delayed allergic reaction to the contrast dye used during cardiac catheterization. Nurse Carl should check the client's skin for a rash and request a prescription for diphenhydramine IV to decrease the itching.

<b>Optimal Decision</b>	
<b>Scenario</b>	Mr. Davis is having difficulty breathing, and Nurse Carl is assessing breath sounds.
<b>Question</b>	Nurse Carl is assessing Mr. Davis's breath sounds and suspects Mr. Davis is starting to experience a moderate systemic reaction to the contrast dye used for the heart catheterization. Which of the following breath sounds should the nurse expect to hear during auscultation?
<b>Selected Option</b>	Wheezing
<b>Rationale</b>	Nurse Carl should recognize that high-pitched wheezing following a heart catheterization using contrast dye indicates a moderate allergic reaction that can progress into anaphylactic shock. Anaphylactic reaction to the contrast dye requires immediate intervention. Wheezing is a continuous squeaky breath sound that arises from the small airways and is associated with inflammation and edema.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is choosing the correct medication to administer for Mr. Davis's dyspnea and wheezing.
<b>Question</b>	Nurse Carl has listened to Mr. Davis's breath sounds and recognizes the manifestations of Mr. Davis's condition. Nurse Carl should expect a prescription for which of the following medications?
<b>Selected Option</b>	Epinephrine IM
<b>Rationale</b>	Nurse Carl should administer epinephrine IM to promote bronchodilation, vasoconstriction, and maintenance of the blood pressure and heart rate. Anaphylaxis is a life-threatening event and requires rapid intervention to prevent a potential critical outcome.

<b>Scenario</b>	Nurse Carl is checking Mr. Davis's puncture site during the post-heart catheterization assessment.
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<b>Question</b>	Nurse Carl is completing a post-heart catheterization assessment of Mr. Davis. Which of the following observations should Carl address first?
<b>Selected Option</b>	Diminished right dorsal pedal pulse from the client's baseline
<b>Rationale</b>	Decreased strength of the right dorsal pedal pulse compared with the left dorsal pedal pulse requires further assessment of color, blanching of the nailbeds and pads of toes, capillary refill, and sensation. The client is at risk for decreased blood flow due to possible thrombus formation and/or hematoma formation, which could block blood flow to the lower extremities. However, another finding is the priority.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl finds bleeding at the puncture site.
<b>Question</b>	Mr. Davis's puncture site is covered with gauze and a transparent bandage. Nurse Carl is assessing Mr. Davis' puncture site for bleeding. There is a 7.62-cm (3-in) groin hematoma. The gauze is saturated with bright red blood. Which of the following actions should Nurse Carl take?
<b>Selected Option</b>	Apply pressure to the right groin site.
<b>Rationale</b>	Nurse Carl should assess the puncture site and apply pressure to the area for at least 10 minutes in the presence of active bleeding or a hematoma. Pressure is applied to create hemostasis.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is reviewing Mr. Davis's laboratory values.
<b>Question</b>	Nurse Carl is reviewing Mr. Davis's laboratory results in the electronic medical records (EMRs). Which of the laboratory results should nurse Carl report immediately to the provider?
<b>Selected Option</b>	Potassium
<b>Rationale</b>	The potassium is 3.2 mEq/L, which is below the expected reference range of 3.5 to 5 mEq/L. Nurse Carl should report this value immediately to the provider.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is planning to teach Mr. Davis about modifiable risk factors.
<b>Question</b>	Nurse Carl has information to provide to Mr. Davis about modifiable risk factors for coronary artery disease. Which of the following risk factors should he include in the teaching?
<b>Selected Option</b>	Obesity
<b>Rationale</b>	Nurse Carl should include in the teaching that modifiable risk factors include obesity, cigarette smoking, hypertension, diabetes, and sedentary lifestyle. Clients can alter modifiable or controllable risk factors by making choices to change aspects of personal lifestyle.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl suspects manifestations of cardiogenic shock.

<b>Question</b>	Nurse Carl is assessing Mr. Davis with the charge nurse and suspects manifestations of cardiogenic shock. Which of the following findings should Carl identify as manifestations of cardiogenic shock? (Select all that apply.)
<b>Selected Ordering</b>	Mean arterial pressure of 54 mm Hg Agitation and restlessness Arterial blood pressure of 88/54 mm Hg
<b>Rationale</b>	A client who is manifesting cardiogenic shock can have hemodynamic instability. These can be observed by decreased blood pressure, tachycardia, reduced mean arterial pressure (MAP), agitation, and restlessness.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is calculating of the initial rate of the dobutamine drip.
<b>Question</b>	Nurse Carl is preparing to administer dobutamine 2.5 mcg/kg/min by continuous IV infusion to Mr. Davis who weighs 110 kg (242 lb). Available is dobutamine 250 mg in 250 mL of dextrose 5% in water. Carl should set the IV pump to deliver how many mL/hr? (Round the answer to the nearest tenth. Use a leading zero if it applies. Do not use a trailing zero.)
<b>Selected Option</b>	16.5
<b>Rationale</b>	<p><b>Follow these steps for the Ratio and Proportion method of calculation:</b></p> <p>Step 1: What is the unit of measurement the nurse should calculate? mL/hr  Step 2: What is the dose the nurse should administer? Dose to administer = Desired 2.5 mcg/kg/min  <math>X = \text{Dose per kg/min} \times \text{Client's weight in kg}</math>  <math>X \text{ mcg/min} = 2.5 \text{ mcg/kg/min} \times 110 \text{ kg}</math>  <math>X \text{ mcg/min} = 275 \text{ mcg/min}</math></p> <p>Step 3: What is the dose available? Dose available = Have 250 mg  Step 4: Should the nurse convert the units of measurement?  Yes (mcg does not equal mg)  <math>1,000 \text{ mcg} = 1 \text{ mg}</math>  <math>275 \text{ mcg/min} = 0.275 \text{ mg/min}</math>  Yes (min does not equal hr)  <math>60 \text{ min} = 1 \text{ hr}</math>  <math>0.275 \text{ mg/min} = 16.5 \text{ mg/hr}</math>  <math>X \text{ mg/hr} = 16.5 \text{ mg/hr}</math></p> <p>Step 5: What is the quantity of the dose available? 250 mL  Step 6: Set up an equation and solve for X.  <math>\frac{\text{Desired}}{\text{Have}} = \frac{\text{Quantity}}{\text{X}}</math>  <math>\frac{275 \text{ mg}}{250 \text{ mg}} = \frac{250 \text{ mL}}{X \text{ mL/hr}}</math>  <math>X \text{ mL/hr} = 16.5 \text{ mL/hr}</math></p> <p>Step 7: Round if necessary.  Step 8: Determine whether the amount to administer makes sense. If there are 250 mg/250 mL and the prescription reads 2.5 mcg/kg/min, it makes sense to administer 16.5 mL/hr. The nurse should set the IV pump to deliver dobutamine at 16.5 mL/hr.</p> <p><b>Follow these steps for the Desired Over Have method of calculation:</b></p> <p>Step 1: What is the unit of measurement the nurse should calculate? mL/hr  Step 2: What is the dose the nurse should administer? Dose to administer = Desired 2.5 mcg/kg/min  <math>X = \text{Dose per kg/min} \times \text{Client's weight in kg}</math>  <math>X \text{ mcg/min} = 2.5 \text{ mcg/kg/min} \times 110 \text{ kg}</math>  <math>X \text{ mcg/min} = 275 \text{ mcg/min}</math></p> <p>Step 3: What is the dose available? Dose available = Have 250 mg  Step 4: Should the nurse convert the units of measurement?</p>

Yes (mcg does not equal mg)  
 $275 \text{ mcg} \times 1 \text{ mg} \times X \text{ mg} = 1,000 \text{ mcg}$   
 $X \text{ mg/min} = 0.275 \text{ mg/min}$   
 Yes (min does not equal hr)  
 $0.275 \text{ mg} \times 60 \text{ min} \times X \text{ mg} = 1 \text{ min}$   
 $X \text{ mg/hr} = 16.5 \text{ mg/hr}$   
 Step 5: What is the quantity of the dose available? 250 mL  
 Step 6: Set up an equation and solve for X.  
 $\text{Desired} \times \text{Quantity} \times X = \text{Have}$   
 $16.5 \text{ mg} \times 250 \text{ mL} \times X \text{ mL/hr} = 250 \text{ mg}$   
 $X \text{ mL/hr} = 16.5 \text{ mL/hr}$   
 Step 7: Round if necessary.  
 Step 8: Determine whether the amount to administer makes sense. If there are 250 mg/250 mL and the prescription reads 2.5 mcg/kg/min, it makes sense to administer 16.5 mL/hr. The nurse should set the IV pump to deliver dobutamine at 16.5 mL/hr.

**Follow these steps for the Dimensional Analysis method of calculation:**  
 Step 1: What is the unit of measurement the nurse should calculate? (Place the unit of measure being calculated on the left side of the equation.)  
 $X \text{ mL/hr} =$   
 Step 2: Determine the ratio that contains the same unit as the unit being calculated. (Place the ratio on the right side of the equation, ensuring that the unit in the numerator matches the unit being calculated.)  
 $250 \text{ mL} \times X \text{ mL/hr} = 250 \text{ mg}$   
 Step 3: Place any remaining ratios that are relevant to the item on the right side of the equation, along with any needed conversion factors, to cancel out unwanted units of measurement.  
 $250 \text{ mL} \times 1 \text{ mg} \times 2.5 \text{ mcg} \times 110 \text{ kg} \times 60 \text{ min} \times X \text{ mL/hr} = 250 \text{ mg} \times 160 \times 160 \times 160 \times 160 \times 250 \text{ mg} \times 1,000 \text{ mcg} \times 1 \text{ kg} \times 1 \text{ min} \times 1 \text{ hr}$   
 Step 4: Solve for X.  
 $X \text{ mL/hr} = 16.5 \text{ mL/hr}$   
 Step 5: Round if necessary.  
 Step 6: Determine whether the amount to administer makes sense. If there are 250 mg/250 mL and the prescription reads 2.5 mcg/kg/min, it makes sense to administer 16.5 mL/hr. The nurse should set the IV pump to deliver dobutamine at 16.5 mL/hr.

Optimal Decision	
<b>Scenario</b>	Nurse Carl is anticipating a medication prescription for Mr. Davis.
<b>Question</b>	Nurse Carl continues to monitor Mr. Davis, who remains unstable with a systolic blood pressure less than 90 mm Hg even with a dobutamine drip infusing. Which of the following medications should nurse Carl plan to administer?
<b>Selected Option</b>	Norepinephrine IV drip
<b>Rationale</b>	Norepinephrine is a vasopressor that produces vasoconstriction resulting in increased blood pressure and increased cardiac output. Norepinephrine should be administered, along with fluid volume replacement therapy, but not with a rapid infusion. Nurse Carl should monitor Mr. Davis for arrhythmias, chest pain, and hypertension.

Optimal Decision	
<b>Scenario</b>	Nurse Carl is preparing to administer norepinephrine.

<b>Question</b>	Nurse Carl is preparing to administer norepinephrine to Mr. Davis. Which of the following actions should nurse Carl plan to take?
<b>Selected Option</b>	Administer the medication through a central venous catheter.
<b>Rationale</b>	A norepinephrine drip should be infused using a large vein or central venous catheter to prevent localized vasoconstriction, which can result in extravasation and tissue necrosis.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is monitoring for adverse effects of norepinephrine.
<b>Question</b>	Nurse Carl is reviewing a medication reference for adverse effects of norepinephrine. For which of the following findings should Carl monitor as an adverse effect of the medication?
<b>Selected Option</b>	Decreased urine output
<b>Rationale</b>	Mr. Davis might experience the adverse effect of decreased urine output due to vasoconstrictive effects on the renal arteries and hypoperfusion of the kidneys.

<b>Optimal Decision</b>	
<b>Scenario</b>	Lifestyle changes to reduce the risk of further coronary events.
<b>Question</b>	Nurse Carl is listening to Mr. Davis who is sharing about his plans for lifestyle changes. Which of the following statements indicates that Mr. Davis is planning to make appropriate lifestyle changes?
<b>Selected Option</b>	"I will reduce my sodium intake to 1,500 milligrams a day."
<b>Rationale</b>	Mr. Davis, who is African American, over the age of 50, and has a history of hypertension, should decrease sodium intake to 1,500 mg/day.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is reviewing food choices with Mr. and Mrs. Davis.
<b>Question</b>	Nurse Carl has asked Mr. Davis to select foods from the hospital breakfast menu. Nurse Carl should determine that which of the following foods selected by Mr. Davis is the best choice for adhering to a 1,500 mg low-sodium diet?
<b>Selected Option</b>	3/4 cup shredded wheat cereal
<b>Rationale</b>	Nurse Carl should recognize that shredded wheat cereal is the best food choice for Mr. Davis because 1 cup contains just 1 mg of sodium.

<b>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is teaching Mr. Davis about lisinopril.
<b>Question</b>	Nurse Carl is teaching Mr. Davis about taking lisinopril for hypertension. Which of the following information should Carl include in the teaching?
<b>Selected Option</b>	"Report a persistent dry cough."

<b>Rationale</b>	Nurse Carl should include that a persistent dry cough is an adverse effect of lisinopril and may persist until the medication is discontinued. Mr. Davis should notify the provider if he experiences this adverse effect, so the medication can be changed.
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# Score Explanation and Interpretation

## Individual Performance Profile

### REASONING SCENARIO INFORMATION

Reasoning Scenario Information provides the date, time and amount of time use, along with the score earned for each attempt. The percentage of students earning a Scenario Performance of Strong, Satisfactory, or Needs Improvement is provided. In addition, the Scenario Performance for each student is provided, along with date, time, and time use for each attempt. This information is also provided for the Optimal Decision Mode if it has been enabled.

If a detrimental decision is made during a Real Life scenario, the scenario will diverge from the optimal path and potentially end prematurely, in which case an indicator will appear on the score report.

### REASONING SCENARIO PERFORMANCE SCORES

<b>Strong</b>	Exhibits optimal reasoning that results in positive outcomes in the care of clients and resolution of problems.
<b>Satisfactory</b>	Exhibits reasoning that results in mildly helpful or neutral outcomes in the care of clients and resolution of problems.
<b>Needs Improvement</b>	Exhibits reasoning that results in harmful or detrimental outcomes in the care of clients and resolution of problems.

### REASONING SCENARIO PERFORMANCE RELATED TO NURSING COMPETENCY OUTCOMES

A performance indicator is provided for each outcome listed within the nursing competency outcome categories. Percentages are based on the number of questions answered correctly out of the total number of questions that were assigned to the given outcome. Outcomes have varying numbers of questions assigned to them. Also, due to divergent paths within the branching simulation, the outcomes encountered and the number of questions for each outcome can vary. The above factors cause limitations related to comparing scores across students or groups of students.

### NCLEX® CLIENT NEED CATEGORIES

<b>Management of Care</b>	Providing integrated, cost-effective care to clients by coordinating, supervising, and/or collaborating with members of the multi-disciplinary health care team.
<b>Safety and Infection Control</b>	Incorporating preventative safety measures in the provision of client care that provides for the health and well-being of clients, significant others, and members of the health care team.
<b>Health Promotion and Maintenance</b>	Providing and directing nursing care that encourages prevention and early detection of illness, as well as the promotion of health.
<b>Psychosocial Integrity</b>	Promoting mental, emotional, and social well-being of clients and significant others through the provision of nursing care.
<b>Basic Care and Comfort</b>	Promoting comfort while helping clients perform activities of daily living.
<b>Pharmacological and Parenteral Therapies</b>	Providing and directing administration of medication, including parenteral therapy.
<b>Reduction of Risk Potential</b>	Providing nursing care that decreases the risk of clients developing health-related complications.
<b>Physiological Adaptation</b>	Providing and directing nursing care for clients experiencing physical illness.

# Score Explanation and Interpretation

## Individual Performance Profile

### QUALITY AND SAFETY EDUCATION FOR NURSES (QSEN)

<b>Safety</b>	The minimization of risk factors that could cause injury or harm while promoting quality care and maintaining a secure environment for clients, self, and others.
<b>Patient-Centered Care</b>	The provision of caring and compassionate, culturally sensitive care that is based on a client's physiological, psychological, sociological, spiritual, and cultural needs, preferences, and values.
<b>Evidence Based Practice</b>	The use of current knowledge from research and other credible sources, upon which clinical judgment and client care are based.
<b>Informatics</b>	The use of information technology as a communication and information gathering tool that supports clinical decision making and scientifically based nursing practice.
<b>Quality Improvement</b>	Care related and organizational processes that involve the development and implementation of a plan to improve health care services and better meet the needs of clients.
<b>Teamwork and Collaboration</b>	The delivery of client care in partnership with multidisciplinary members of the health care team, to achieve continuity of care and positive client outcomes.

### BODY FUNCTION

<b>Cardiac Output and Tissue Perfusion</b>	The anatomical structures (heart, blood vessels, and blood) and body functions that support adequate cardiac output and perfusion of body tissues.
<b>Cognition and Sensation</b>	The anatomical structures (brain, central and peripheral nervous systems, eyes and ears) and body functions that support perception, interpretation, and response to internal and external stimuli.
<b>Excretion</b>	The anatomical structures (kidney, ureters, and bladder) and body functions that support filtration and excretion of liquid wastes, regulate fluid and electrolyte and acid-base balance.
<b>Immunity</b>	The anatomic structures (spleen, thymus, bone marrow, and lymphatic system) and body functions related to inflammation, immunity, and cell growth.
<b>Ingestion, Digestion, Absorption, and Elimination</b>	The anatomical structures (mouth, esophagus, stomach, gall bladder, liver, small and large bowel, and rectum) and body functions that support ingestion, digestion, and absorption of food and elimination of solid wastes from the body.
<b>Integument</b>	The anatomical structures (skin, hair, and nails) and body functions related to protecting the inner organs from the external environment and injury.
<b>Mobility</b>	The anatomical structures (bones, joints, and muscles) and body functions that support the body and provide its movement.
<b>Oxygenation</b>	The anatomical structures (nose, pharynx, larynx, trachea, and lungs) and body functions that support adequate oxygenation of tissues and removal of carbon dioxide.
<b>Regulation and Metabolism</b>	The anatomical structures (pituitary, thyroid, parathyroid, pancreas, and adrenal glands) and body functions that regulate the body's internal environment.
<b>Reproduction</b>	The anatomical structures (breasts, ovaries, fallopian tubes, uterus, vagina, vulva, testicles, prostate, scrotum, and penis) and body functions that support reproductive functions.

### DECISION LOG

Information related to each question answered in a scenario attempt is listed in the report. A brief description of the scenario, question, selected option and rationale for that option are provided for each question answered. The words "Optimal Decision" appear next to the question when the most optimal option was selected.

The rationale for each selected option may be used to guide remediation. A variety of learning resources may be used in the review process, including related ATI Review Modules.

If a detrimental decision that could result in grave harm to the client is made during a Real Life scenario, the scenario ends immediately and an indicator that a detrimental decision has been made appears in the score report. A detrimental decision indicates the need to remediate the related topic area to prevent detrimental outcomes in the future.