

# Module Report

Tutorial: Real Life RN Medical Surgical 4.0

Module: Myocardial Infarction Complications



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Program Type: Diploma

## Standard Use Time and Score

	Date/Time	Time Use	Score
Myocardial Infarction Complications	3/8/2023 5:05:54 PM	1 hr 7 min	Strong

## Reasoning Scenario Details

Myocardial Infarction Complications - Use on 3/8/2023 3:58:36 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	100%		
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	100%		
RN Reduction of Risk Potential	100%		
RN Physiological Adaptation	100%		

QSEN	Strong	Satisfactory	Needs Improvement
Safety	100%		
Patient-Centered Care	100%		
Evidence Based Practice	100%		

### Decision Log:

Optimal Decision	
<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>	Mrs. Davis should call 911 if her husband's chest pain is not relieved within 5 minutes.
<b>Rationale</b>	Unresolved chest pain with the administration of nitroglycerin can indicate the client is having a myocardial infarction, so Mrs. Davis should call 911 if the pain continues. Mr. Davis should also take another dose of nitroglycerin. For unresolved chest pain, a total of three doses of nitroglycerin should be administered 5 minutes apart. Mr. Davis should also take a 325 mg dose of aspirin to inhibit platelet aggregation, which can reduce cardiac damage from the formation of a thrombus.

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.
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<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>	Notify the provider of a possible shellfish allergy and record the allergy in the EMR. Notify the provider of Mr. Davis itching and check for a rash. Ask the provider for Benadryl to help with the itching.
<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>Optimal Decision</b>	
<b>Scenario</b>	Nurse Carl is checking Mr. Davis's puncture site during the post-heart catheterization assessment.
<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>	A developing hematoma at the puncture site
<b>Rationale</b>	The greatest risk to the client is the formation of a hematoma at the puncture site. A hematoma is an indication the client is having active bleeding into the groin tissue and requires immediate action. In addition, nurse Carl should know a hematoma can occur without observable bleeding at the puncture site. Therefore, this is the priority finding.

<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</p> <p>Step 2: What is the dose the nurse should administer? Dose to administer = Desired 2.5 mcg/kg/min</p> $X = \text{Dose per kg/min} \times \text{Client's weight in kg}$ $X \text{ mcg/min} = 2.5 \text{ mcg/kg/min} \times 110 \text{ kg}$ $X \text{ mcg/min} = 275 \text{ mcg/min}$ <p>Step 3: What is the dose available? Dose available = Have 250 mg</p> <p>Step 4: Should the nurse convert the units of measurement?</p> <p>Yes (mcg does not equal mg)</p> $1,000 \text{ mcg} = 1 \text{ mg}$ $\frac{275 \text{ mcg/min}}{1,000} = \frac{1 \text{ mg}}{X \text{ mg/min}}$ $X \text{ mg/min} = 0.275 \text{ mg/min}$ <p>Yes (min does not equal hr)</p> $60 \text{ min} = 1 \text{ hr}$ $\frac{0.275 \text{ mg/min}}{60} = \frac{1 \text{ hr}}{X \text{ mg/hr}}$ $X \text{ mg/hr} = 16.5 \text{ mg/hr}$ <p>Step 5: What is the quantity of the dose available? 250 mL</p> <p>Step 6: Set up an equation and solve for X.</p> $\frac{\text{Have}}{\text{Desired}} = \frac{\text{Quantity}}{X}$ $\frac{250 \text{ mg}}{16.5 \text{ mg/hr}} = \frac{250 \text{ mL}}{X \text{ mL/hr}}$ $X \text{ mL/hr} = 16.5 \text{ mL/hr}$ <p>Step 7: Round if necessary.</p>

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 Desired Over Have method of calculation:**

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

$X = \text{Dose per kg/min} \times \text{Client's weight in kg}$

$X \text{ mcg/min} = 2.5 \text{ mcg/kg/min} \times 110 \text{ kg}$

$X \text{ mcg/min} = 275 \text{ mcg/min}$

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)

$275 \text{ mcg} \times 1 \text{ mg} / 1,000 \text{ mcg} = 0.275 \text{ mg}$

$X \text{ mg/min} = 0.275 \text{ mg/min}$

Yes (min does not equal hr)

$0.275 \text{ mg} \times 60 \text{ min} / 1 \text{ hr} = 16.5 \text{ mg/hr}$

$X \text{ mg/hr} = 16.5 \text{ mg/hr}$

Step 5: What is the quantity of the dose available? 250 mL

Step 6: Set up an equation and solve for X.

Desired  $\times$  Quantity  $X = \frac{\text{Have}}{\text{Have}}$   $16.5 \text{ mg} \times 250 \text{ mL} / X \text{ mL/hr} = \frac{275 \text{ mg}}{250 \text{ mg}}$

$X \text{ mL/hr} = 16.5 \text{ mL/hr}$

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.)

$250 \text{ mL} / X \text{ mL/hr} = \frac{275 \text{ mg}}{250 \text{ mg}}$

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.

$250 \text{ mL} \frac{1 \text{ mg}}{2.5 \text{ mcg}} \frac{110 \text{ kg}}{1 \text{ kg}} \frac{60 \text{ min}}{1 \text{ hr}} X \text{ mL/hr} = \frac{275 \text{ mcg}}{250 \text{ mcg}} \times \frac{1,000 \text{ mcg}}{1 \text{ mg}} \frac{1 \text{ min}}{1 \text{ hr}}$

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.
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<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.

<b>Optimal Decision</b>	
<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.
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<b>Optimal Decision</b>	
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<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.

# 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.