HEART FAILURE

Estimated Time: 30 minutes • Debriefing Time: 30 minutes

Scan to Begin

Patient Name: Henry Foster

SCENARIO OVERVIEW

Henry Foster is a 62-year-old male patient with a history of chronic heart failure who called 911 when he became increasingly short of breath at home.

Level 3 requires a “Scene Size-Up,” “Primary Survey,” “Secondary Assessment,” and “Reassessment” based on the National Registry of Emergency Technicians Advanced Level Psychomotor Exam.

Note: To emphasize the clinical criteria of a 15-minute time limit, timers are in place so that if a student does not make a Transport decision within 10 minutes, they receive a warning. If they do not make a Transport decision within 15 minutes, they will automatically be exited from the scenario.

LEARNING OBJECTIVES

1. Gather information related to dispatch
2. Perform a “Scene size-up”
3. Perform a “Primary Survey”
4. Make Transport Decision
5. Perform “History Taking and Secondary Assessment”
6. Interpret Vital Signs and Diagnostics
7. Verbalize proper interventions/treatment

CURRICULUM MAPPING

WTCS EMT-P PROGRAM OUTCOMES

- Prepare for incident response and EMS operations
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care.
- Communicate effectively with others
- Demonstrate professional behavior
- Meet state and national competencies listed for EMT- paramedic certification(s).

SIMULATION LEARNING ENVIRONMENT & SET-UP

PATIENT PROFILE

Name: Henry Foster

DOB: 09/06/19xx

Age: 62

Gender: Male

Height: 175 cm (5 ft 10 in)

Weight: 81.8 kg (180 lbs)

Code Status: Full code

Primary Language spoken: English

Allergies: NKDA

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- Street clothes, flannel shirt, knit hat
- Side table in home contains various cues related to his condition: empty beer bottles, open potato chip packages, a bottle of whiskey, a gun, a wastebasket overflowing with tissue

Monitor Settings: none

QR CODES

DISPATCH	SCENE	PATIENT	FAMILY MEMBER
ASPIRIN	FENTANYL	FUROSEMIDE	NITROGLYCERIN IV
NITROGLYCERIN SUBL			

TEACHING PLAN

PREBRIEF

The facilitator should lead this portion of the simulation. The following steps will guide you through Prebrief.

- Scan the **QR code:** "**Scan to Begin**" while students are in Prebrief
- "Meet Your Patient" (on iPad) and explain how the iPad works in the simulated learning environment including:
    - Facilitator note: This scenario has been designed to flow without scanning additional QR codes for convenience in the classroom. For added flexibility, you may elect to use the QR codes provided above to design your own scenario flow.
- Discuss the simulation "Learning Objective(s)" (on iPad) as well as any other Prebrief materials

STATE 1

RECEIVE DISPATCH

- Play “Dispatch” (on iPad): “ARISE EMS, respond emergent to the address of 2610 Main Street, in Anytown. Report of a 62-year-old male having shortness of breath, history of Congestive Heart Failure. Family is reporting increased shortness of breath, unable to get up today.”
- View the “En Route to the scene” message
- Preview the National Registry of EMT Advanced Level Psychomotor Examination form for Medical Assessment
- Possible Facilitator Question:
    - “What are your plans based on the dispatch you received?”

STATE 2

SURVEY THE SCENE

- Play “Scene Survey” video
- View the plaque reminding students “Your transport decision must be made within 15 minutes.”
- View the plaque with the following questions:
    - Verbalize if body substance isolation precautions are required
    - Verbalize how you will perform a “scene size-up”
- View the “Patient” video
    - How will you respond to the patient?
- View the “Family member” video
    - How will you respond to the family member?
- View the plaque entitled “Primary Survey and History Taking” with the following questions:
    - Verbalize how you perform a Primary Survey for this patient
    - What is your transport decision?
    - Facilitator Note: students may also replay the patient video
- View the plaque entitled “Indicate Transport Decision” with text stating “Indicate your transport decision by tapping the Transport tab.”
    - Students should then tap Transport Tab and make their decision (see instructions under the Transport Tab below.)
- Students should tap the Menu icon on the top left corner of the screen, then tap on the Transport tab to indicate their transport decision
- Tabbed iPad Content:

EMT HOME SCREEN

This is the home screen. In the top left corner is the “menu” icon where the tabs described below can be accessed.

MEDICAL ASSESSMENT FORM

The National Registry of Emergency Medical Technicians, Advanced level Psychomotor Exam: Patient Assessment/Management – Medical form is displayed here (it is also attached in Appendix A so that it can be printed out for the student if desired).

PATIENT PROFILE

Patient demographic information is displayed here.

SCENE SURVEY

Tap here to replay the Scene Survey video if desired.

PATIENT

Tap here to replay the Patient video if desired.

FAMILY MEMBER

Tap here to replay the Family Member video if desired.

TRANSPORT

Students are asked, “Have you made your transport decision?”

- If they select “Yes”: they will receive another question: “Will you transport?”
    - If they select “Yes” then then will receive a message “Prepare to transport” and will progress to State 3.
    - If they select “No” then they will receive a message “Communicate your decision to dispatch.” They will then receive a message “Discuss your transport decision with your facilitator.” (The transport decision can be revised by tapping the Transport tab again.)
- If they select “No”: they will see an image of a clock timer with the message “Your decision must be made within 15 minutes.”

Note: Students have 15 minutes to indicate a Transport decision or they are automatically exited from the scenario. Students will receive a 10-minute warning.

LEVEL

Level 2 is displayed. In order to progress to State 3, students must indicate their transport decision using the Transport tab.

SCANNER

Use this to scan optional QR Codes.

EXIT

If the student taps the Exit tab at this point, the iPad reads, “Are you sure you want to exit? All data will be lost.”

- If “No” is selected, the iPad will return to the tabbed content.
- If “Yes” is selected, the iPad will let the student(s) exit and prompt them to complete an embedded 3-5 minute survey.

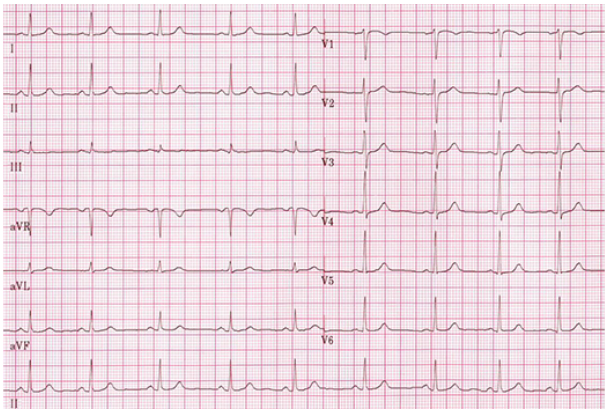
When ALL of the objectives of the program HAVE been met at the end of the scenario, and this tab is tapped, the iPad reads, “All scenario objectives have been completed. Would you like to exit the scenario?”

- If “No” is selected, the iPad will return to the tabbed content.
- If “Yes” is selected, the iPad will let the student(s) exit and prompt them to complete an embedded 3-5 minute survey.

STATE 3

SECONDARY ASSESSMENT

- View the plaque entitled “History Taking” with the following questions:
    - Verbalize the questions you would ask to obtain a “History of Present Illness”
    - Verbalize the questions you would ask to obtain “Past Medical History”
- View the plaque entitled “Secondary Assessment” with the following questions:
    - Verbalize how you would assess the affected body part(s)
- View the plaque entitled “Pulmonary Assessment: Anterior” with instructions to “tap on anatomical location(s) to listen to lung sounds.”
    - An image of the patient’s chest appears with “hot spots” located over each anatomical location of the chest. When each “hot spot” is tapped, lung sounds can be heard (with best audio using earbuds or headphones.)
- View the plaque entitled “Pulmonary Assessment: Posterior” with instructions to “tap anatomical location(s) to listen to lung sounds.”
    - Students can listen to posterior lung sounds by tapping on the “hot spots.” Facilitator note: Fine crackles can be heard in lower posterior lobes.
- View plaque entitled “Verbalize Interventions” and answer the associated questions:
    - Interpret Henry’s vital signs: Pulse: 122, RR: 35, BP: 144/58, O2 sat: 85%
- View plaque entitled “Diagnostics” with this ECG image:



- View plaque entitled “Treatment Plan” and answer the associated questions:

    - What is your field impression of the patient?
    - Verbalize your treatment plan per Protocol provided
    - Re-evaluate and verbalize your current transport decision
- Tabbed iPad Content changes
    - Facilitator Note: The iPad advances to State 4 after both the protocol and vital signs tabs are viewed.

VITAL SIGNS

Vital signs are displayed here: Pulse: 122, RR: 35, BP: 144/58, O2 sat: 85%

PROTOCOL

See Protocol in Appendix B

Note: Students may tap on hyperlinked medications to view medication information.

SCANNER

QR Codes for medications on Protocol may be scanned at this time to view images of the labels of the medication.

STATE 4

REASSESSMENT

- View the “Family Member” video
- View the plaque entitled “Communicate with family member” and verbalize response to following question:
    - “Verbalize how you will communicate with the family member”
- View “Reassessment” patient video
- View plaque entitled “Repeat Vital Signs”
    - The following values are displayed: Pulse 0, Resp. Rate 0
- View plaque entitled “Verbalize your response per protocol” and verbalize your response to the following questions:
    - What will you assess?
    - What are your interventions per protocol?
- View protocol and verbalize the appropriate interventions according to patient status
- View plaque stating “Learning objectives have been met. You may exit the scenario.”
- Tabbed iPad Content changes:
  Students may exit the scenario after the Protocol is viewed again and appropriate interventions are verbalized for the patient’s current status.

DEBRIEF

Nothing needed from the iPad.

QUESTIONS

1. How did you feel this scenario went?
2. Review understanding of scenario learning objectives.
    a. Was the scene safe? Explain.
    b. What actions are required when a patient is in a car?
    c. What body isolation precautions were appropriate?
    d. What is the nature of the patient's illness?
    e. What did you discover during your Primary Survey?
    f. What was your transport decision? Why?
    g. What information did you gather during your Secondary Assessment, History Taking, and interpretation of vital signs and diagnostics?
    h. What treatments did you initiate per protocol?
    i. Did the patient's condition change after being loaded in the ambulance? How did you respond?
    j. If you could "do over," would you do anything differently?
3. Summary/Take Away Points:
    a. "Today you analyzed the scene and performed a Scene Size-up, Primary Survey, Secondary Assessment and Reassessment for a 62-year-old patient, in his home, with chronic heart failure experiencing shortness of breath. What is one thing you learned from participating in this scenario that you will take with you into your EMS practice?" (Each student must share something different from what the others' share.)

NOTE: Debriefing technique is based on INASCL Standards for Debriefing

SURVEY

Print this page and provide to students.

Students, please complete a brief (2-3 minute) survey regarding your experience with this ARISE simulation. There are two options:

1. Use QR Code: Survey
    a. Note: You will need to download a QR Code reader/scanner onto your own device (smartphone or tablet). There are multiple free scanner apps available for both Android and Apple devices from the app store.
    b. This QR Code will not work in the ARIS app.

SURVEY

2. Copy and paste the following survey link into your browser.
    a. https://ircvtc.co1.qualtrics.com/SE/?SID=SV_6Mwfv98ShBfRnBX

APPENDIX A: EMT ADVANCED LEVEL PSYCHOMOTOR EXAM

National Registry of Emergency Medical Technicians
Advanced Level Psychomotor Examination

PATIENT ASSESSMENT - MEDICAL

Candidate:_____ **Examiner:**_____

Date:_____ **Signature:**_____

Scenario:_____

Actual Time Started: _____

	Possible Points	Points Awarded
Takes or verbalizes body substance isolation precautions	1	
SCENE SIZE-UP		
Determines the scene/situation is safe	1	
Determines the mechanism of injury/nature of illness	1	
Determines the number of patients	1	
Requests additional help if necessary	1	
Considers stabilization of spine	1	
PRIMARY SURVEY		
Verbalizes general impression of the patient	1	
Determines responsiveness/level of consciousness	1	
Determines chief complaint/apparent life-threats	1	
Assesses airway and breathing -Assessment (1 point) -Assures adequate ventilation (1 point) -Initiates appropriate oxygen therapy (1 point)	3	
Assesses circulation -Assesses/controls major bleeding (1 point) -Assesses skin [either skin color, temperature, or condition] (1 point) -Assesses pulse (1 point)	3	
Identifies priority patients/makes transport decision	1	
HISTORY TAKING AND SECONDARY ASSESSMENT		
History of present illness -Onset (1 point) -Severity (1 point) -Provocation (1 point) -Time (1 point) -Quality (1 point) -Clarifying questions of associated signs and symptoms as related to OPQRST (2 points) -Radiation (1 point)	8	
Past medical history -Allergies (1 point) -Past pertinent history (1 point) -Events leading to present illness (1 point) -Medications (1 point) -Last oral intake (1 point)	5	
Performs secondary assessment [assess affected body part/system or, if indicated, completes rapid assessment] -Cardiovascular -Neurological -Integumentary -Reproductive -Pulmonary -Musculoskeletal -GI/GU -Psychological/Social	5	
Vital signs -Pulse (1 point) -Respiratory rate and quality (1 point each) -Blood pressure (1 point) -AVPU (1 point)	5	
Diagnostics [must include application of ECG monitor for dyspnea and chest pain]	2	
States field impression of patient	1	
Verbalizes treatment plan for patient and calls for appropriate intervention(s)	1	
Transport decision re-evaluated	1	
REASSESSMENT		
Repeats primary survey	1	
Repeats vital signs	1	
Evaluates response to treatments	1	
Repeats secondary assessment regarding patient complaint or injuries	1	
Actual Time Ended: _____		
CRITICAL CRITERIA **TOTAL**	48	

_____ Failure to initiate or call for transport of the patient within 15 minute time limit
_____ Failure to take or verbalize body substance isolation precautions
_____ Failure to determine scene safety before approaching patient
_____ Failure to voice and ultimately provide appropriate oxygen therapy
_____ Failure to assess/provide adequate ventilation
_____ Failure to find or appropriately manage problems associated with airway, breathing, hemorrhage or shock [hypoperfusion]
_____ Failure to differentiate patient's need for immediate transportation versus continued assessment and treatment at the scene
_____ Does other detailed history or physical examination before assessing and treating threats to airway, breathing, and circulation
_____ Failure to determine the patient's primary problem
_____ Orders a dangerous or inappropriate intervention
_____ Failure to provide for spinal protection when indicated

You must factually document your rationale for checking any of the above critical items on the reverse side of this form.

p302/10-11

APPENDIX B: PULMONARY EDEMA AND SUSPECTED ACUTE CORONARY SYNDROME PROTOCOLS

ARISE EMERGENCY MEDICAL PROTOCOLS

RESPIRATORY DISTRESS

(Pulmonary Edema)

Emergency Medical Responder

- Initial Medical Care
- Position patient upright or in position of comfort
- Provide **O_2** to maintain SPO2 at >94%

Emergency Medical Technician

- Apply **CPAP** if indicated
- Cardiac monitor
- Acquire 12 lead ECG and transmit to receiving facility
- Monitor End-Tidal CO2 via nasal cannula for severely ill patients
- Call for paramedic intercept if prolonged transport.

Advanced EMT

- IV **NS** at TKO / Saline Lock
- Nitroglycerin: **0.4 mg** SL
    - May repeat as needed (Maintain systolic BP > 100)

Intermediate

- Fentanyl: **1 mcg/kg** IV

Per MCPO:

- Furosemide **(Lasix):** 40-60 mg IV
  - Advise MCP of patient's home dose when calling for possible EMS dose increase

Paramedic

- Nitroglycerin Infusion**: 10 mcg/ minute**
  - Increase to **20 mcg / minute** in 5 minutes if no improvement
  - Maintain systolic BP >100

ARISE EMERGENCY MEDICAL PROTOCOLS

SUSPECTED ACUTE CORONARY SYNDROME

(Chest Pain)

Emergency Medical Responder

- Initial Cardiac Care
- Be calm and reassuring
- Treat for shock as needed
- Place in position of comfort

Emergency Medical Technician

- Acquire 12 lead ECG and transmit to the receiving facility
    - If a **STEMI (S-T Elevation MI)** is suspected on ECG proceed with the Rapid STEMI Protocol
- **Aspirin**: **324 mg** PO (unless already taken or contraindicated)

Per MCPO:

- Due to possible **Inferior MI** (lead changes in II, III, and aVF), consult with Medical Control prior to beginning Nitroglycerin therapy
    - **Nitroglycerin**: **0.4 mg** SL (Assist patient with his/her own medication)
        - May repeat (x2) every 3-5 minutes
        - Maintain BP >100 Systolic

Rapid STEMI protocol:

- Call for Paramedic Intercept
- Patient should preferentially be transported to a primary PCI hospital.
- Contact medical control at the receiving hospital as soon as reasonably possible to verify the patient qualifies for Rapid STEMI Protocol. This will allow time for coordination of Cath Lab services or to coordinate transport to a PCI hospital

- Contact Hospital Registration to pre-register the patient as appropriate. When you arrive in the ED, stop for an assessment by the Emergency Physician. Proceed to either Cath Lab or an E.D. room as directed by the physician and E.D. staff.

Aspirin contraindications:	**Nitroglycerin contraindications:** Known allergy
- Systolic BP < 100 Active GI bleeding	- Use of Phosphodiesterase type 5 (PDE5) inhibitors in last 24 hours: Sildenafil (Viagra), Vardenafil (Levitra), Tadalafil (Cialis)

Advanced EMT

Per MCPO:

- Due to possible **Inferior MI** (lead changes in II, III, and aVF), consult with Medical Control prior to beginning Nitroglycerin therapy
  - **Nitroglycerin: 0.4 mg** SL
    - May repeat (x2) every 3-5 minutes
    - Maintain BP >100 Systolic

Rapid STEMI protocol:

- Draw blood as appropriate (With prior state EMS office approval)
- IV Access: minimum 1 peripheral IV

Preferred: (2) peripheral IV (or) twin port saline lock if available, minimum 18g or larger

Intermediate

- Draw blood as appropriate
- **Nitroglycerin 0.4 mg** SL
  - May repeat (x2) every 3-5 minutes
  - Maintain BP >100 Systolic
- **Fentanyl: 1 mcg/kg** IV for persistent pain not relieved by Nitro
  - May repeat every 5 minutes as needed

- Maintain BP >100 Systolic

Paramedic

- **Nitroglycerin Infusion: 10 mcg/ minute** may be instituted at for persistent pain
  - Titrate upwards **10 mcg** every 5 minutes until pain free
  - Maintain BP >100 Systolic

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