HEART FAILURE

Estimated Time: 40 minutes • Debriefing Time: 30 minutes

Scan to Begin

Patient Name: Hector Fernandez

SCENARIO OVERVIEW

This patient was admitted to the medical telemetry floor for an exacerbation of his known end-stage congestive heart failure as well as cellulitis in his right lower extremity. He also has obstructive sleep apnea, a history of COPD, and multiple other comorbidities. The student is the night shift therapist and is getting report at 1800. The student learns that the patient will need his home nebulizer done, a CPAP set up, and an ABG drawn per Provider orders. This scenario includes videos of both right and left Modified Allen's test for students to assess. In addition, the result of the ABG's will depend on whether the student drew them on the patient's current O2 or during/after the nebulizer treatment (if done on O2). Students will notify the provider of the ABG results and treatment will be suggested based upon the results.

LEARNING OBJECTIVES

1. Perform a focused respiratory assessment
2. Recognize and respond to abnormal findings
3. Safely and efficiently execute provider orders
4. Evaluate objective and subjective data
5. Demonstrate appropriate communication
6. Document accurately

CURRICULUM MAPPING

WTCS RESPIRATORY THERAPY PROGRAM OUTCOMES

- Apply respiratory therapy concepts to patient care situations
- Demonstrate technical proficiency required to fulfill the role of a respiratory therapist
- Practice respiratory therapy according to established professional and ethical standards

RESPIRATORY DISEASE

- Analyze signs, symptoms, etiology, pathogenesis and treatment for cardiovascular diseases/disorders
- Analyze signs, symptoms, etiology, pathogenesis, and treatment for sleep disordered breathing

RESPIRATORY AND CARDIAC PHYSIOLOGY

- Interpret blood gas data
- Evaluate fluid and electrolyte balance

RESPIRATORY PHARMACOLOGY

- Compare and contrast drug forms, routes of administration and vehicles
- Examine the pharmacodynamics of bronchodilators

- Examine the pharmacodynamics of anti-Inflammatories, steroidal and non-steroidal

RESPIRATORY THERAPEUTICS I

- Demonstrate medication delivery devices

RESPIRATORY THERAPEUTICS II

- Perform arterial puncture
- Adapt therapeutic interventions for delivery in an alternate care setting

RESPIRATORY CLINICAL PRACTICE

- Apply standard precautions
- Asses vital signs
- Perform pulse oximetry
- Administer aerosolized medication therapy
- Apply non-invasive positive pressure ventilation
- Perform arterial puncture

SIMULATION LEARNING ENVIRONMENT & SET-UP

ENVIRONMENT

Inside room: Patient in bed, as close to fowlers position as possible

Inside or outside room: Hand sanitizer and/or sink

Outside room: Computer or form(s) for documentation

PATIENT PROFILE

Name: Hector Fernandez

DOB: 09/06/19XX

Age: 62

MR#: 41219

Gender: Male

Height: 175 cm (5'10")

Weight: 86.4 kg (195#)

Allergies: penicillin (hives)

Admitting Diagnosis: Right lower extremity cellulitis and CHF

Medical History: congestive heart failure, coronary artery disease, anterior MI with stenting – 4 years ago, chronic atrial fibrillation, hypertension, chronic renal insufficiency, COPD, OSA, restless leg syndrome, hypothyroidism, diabetes mellitus 2, chronic constipation

Surgical History: R TKR – 15 years ago

Code Status: Full

Ethnicity: Hispanic

Spiritual Practice: Christian, Catholic

Primary Language: Spanish

Secondary Language: English

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- Hospital gown
- No moulage
- ID band present with QR code

Monitor Settings

- Simulator vitals: HR 78, RR 24, BP 128/84, Temp 37.1, Sat = 95 % on 4 lpm nasal cannula

Supplies

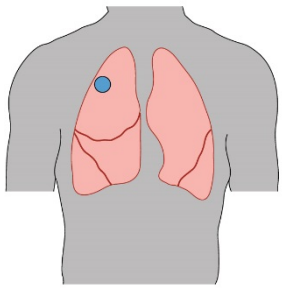
- General
    - Respiratory Equipment
        - Pulse oximeter
        - Nebulizer
        - CPAP/BiPAP machine and supplies
        - Equipment to obtain an ABG
- Medications (realistic labels are available by scanning the QR code)
    - Duoneb vial
    - 0.5 mg Pulmicort vial

QR CODES

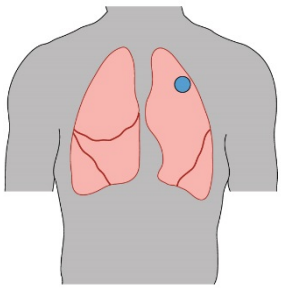
START	PATIENT	REPORT	PATIENT ID
SBAR	RIGHT LEG	LEFT LEG	RIGHT IV
LEFT IV	LEFT ALLEN'S	RIGHT ALLEN'S	DUONEB
PULMICORT			

CHEST QR CODES

Cut along the dotted lines. Fold along the solid line to create a bi-fold of the diagram and QR code.



ANTERIOR 2



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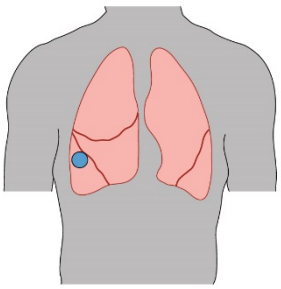

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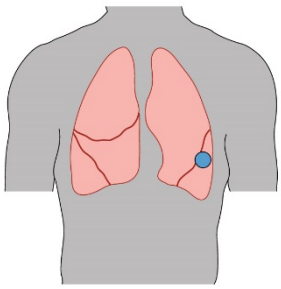
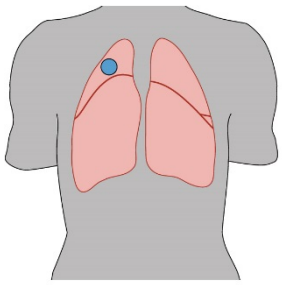
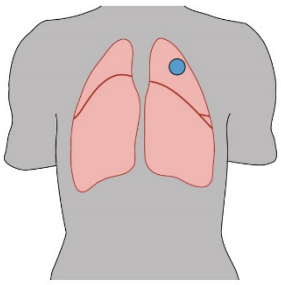


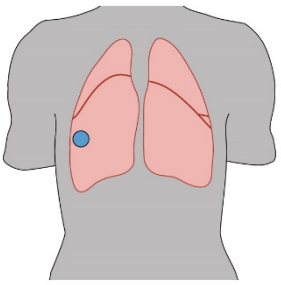
ANTERIOR 7



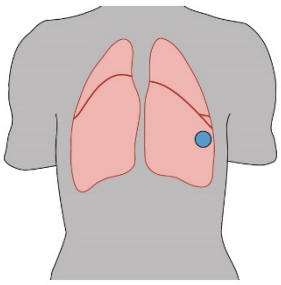
POSTERIOR 0



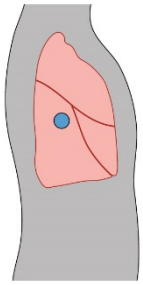
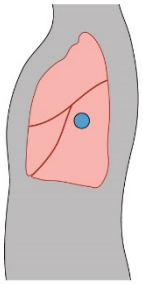
POSTERIOR 1



POSTERIOR 4



POSTERIOR 5

	
RIGHT AXILLARY 1	LEFT AXILLARY 1

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:
    - Explain how to use the iPad scanner and QR codes. Remind students that there are multiple QR codes in the simulation, but they should only scan them if they think it will provide data necessary for their assessment and evaluation of the patient.
    - For some scenarios, it may be helpful to tell students where the QR code are located. For others, you may want students to "find" the QR codes during their assessments. This is your choice.
    - Describe how a QR code sound will work in the scenario. For the most authentic sound experience, student should use ear buds or the ARISE "stethoscope" for all QR codes with the following symbol: □. Example: **QR Code: Chest Anterior 1** □
    - As the facilitator, you should be aware that throughout the simulation some QR codes are necessary to the programming of the iPad content. Directions for which QR codes are required (to be scanned) in each state are listed under each state of the documentation below. The QR codes are also in **BOLD** type.
    - Level tab – This tab "tells" the content in the iPad to change to what is needed for the next state of a simulation. It is used a few times in this scenario after the provider is notified to display new orders (those just given over the phone) and lab results, etc.
    - Medication QR Codes – The student(s) must scan **QR Code: Patient ID** prior to scanning any medication. That scan is valid for 2 minutes and then it "times out." The student(s) will need to scan **QR Code: Patient ID** again to give more medications.
    - MAR Hyperlinks – On the MAR all medications are underlined and hyperlinked to DailyMed, which is a medication reference housed by the

National Library of Medicine. Students can click on these links during the simulation for up-to-date medication content, labels, and package insert information.

- Discuss the simulation "Learning Objective(s)" (on iPad) as well as any other Prebrief materials
- Get "Report" on iPad
    - Possible Facilitator Questions
        - What are your priorities for this patient?
- View "Patient" video on iPad
    - Possible Facilitator Questions
        - What communication strategies could you employ when you assess and evaluate Hector?
- Advance to the "Patient Profile" screen (on iPad). This will act as a simulated patient chart.
- Students can view the tabbed content on the iPad (see below) prior to entering the patient's room and throughout the simulation as needed.
    - You should give student some time (5 minutes) to review this content now, prior to entering the patient's room.
    - Facilitator Note: There are a lot of medications in the MAR and all are linked to Dailymed. This may be a good opportunity to review general pharmacology.

H&P

No reports available.

ORDERS

Patient Name	DOB	MR#
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Provider Orders

Date	Time	Order
Today	1 hour	Admit to Virtual Medical Telemetry Unit
	ago	Diagnosis: X lower leg cellulitis, mild exacerbation CHF
		Condition: Fair
		Code Status: Full Code
		Cardiac monitoring with vitals every 4 hours x 24 hours,
		then every 8 hours
		Call if BP <90/60 or > 170/90, HR <50 or > 120, RR <8 or >24,
		T > 38.5° C, SaO2 < 92% on 4 lpm or > O2
		Activity: Ambulate TID and as tolerated
		Diet: 2 g sodium, Carbohydrate controlled
		Dietary Consult
		2000 ml/24 hour fluid restriction
		Weight on admission and every AM
		Insert Foley catheter for strict I &O
		O2 to keep SaO2 > 90%
		If smoker within the last 12 months, provide smoking cessation
		Respiratory Therapy Consult. Call with recommendations.
		Continue these medications from the skilled nursing facility:
		1. Lisinopril 2.5 mg PO daily
		2. Metoprolol ER 100 mg PO daily
		3. Spironolactone 25 mg PO daily
		4. Coumadin 3 mg PO daily on M, W, F
		5. Atorvastatin 20 mg PO daily
		6. Diltiazem ER 120 mg PO mg daily
		7. Levothyroxine 100 mcg PO daily
		8. Glipizide and Metformin 2.5 mg/250 mg PO with
		breakfast
		9. Carbidopa and Levodopa ER 50 mg/200 mg PO at HS
		10. Aspirin enteric coated 81 mg PO daily
		11. Acetaminophen 500 mg PO 2 tabs every 4-6 hours for
		pain or fever PRN

		12. Nitroglycerin 0.4 mg SL every 5 minutes times 3 doses
		PRN for angina, if angina pain persists call Provider
		13. Milk of Magnesia 30 ml PO daily PRN for constipation,
		may repeat once per day if no relief
		14. Docusate sodium 100 mg PO 2 times per day PRN for
		constipation, hold if diarrhea or abdominal pain
		Medications: Cefazolin 2 g IV every 8 hours
		Clindamycin 900 mg IV every 8 hours
		Furosemide 40 mg PO every 12 hours
		K+ replacement per protocol
		Labs: (If not done in the ED) CBC with differential, Chem 7,
		Magnesium, BNP, Liver Enzymes, TSH, HbA1c, CK & Troponin,
		INR
		(If not done in ED) Blood cultures x 2, wound culture, urinalysis
		AM Labs: Chem 7, BNP, fasting lipid profile
		(If not done in ED) Chest x-ray on admission and in the AM
		(If not done in ED) ECG on admission and in the AM
		Obtain ECG for new onset chest pain STAT PRN
		Echocardiogram now
		Provide and document heart failure instructions: diet and fluid
		restrictions, activity, medications, daily weight recording,
		worsening symptoms, follow-up appointment after discharge
		Consult social worker for advanced directives
		Consult with cardiologist
		Consult for cardiac rehabilitation----------Dr. Jacobson, MD
Today	15 minutes	Duoneb nebulizer 4 times/day and every 2 hours PRN for
	ago	shortness of breath and/or wheezing
		0.5 mg Pulmicort nebulizer every 12 hours
		CPAP at night per patient's home settings
		ABG now and call with results----------Dr. Jacobson, MD

MAR

Patient Name	DOB	MR#
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Medication Administration Record

Scheduled				
Lisinopril 2.5 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Metoprolol ER 100 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Spironolactone 25 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Atorvastatin 20 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Diltiazem ER 120 mg PO mg daily	**Due Today**			**Last Given**
	none			Today @ 0800
Levothyroxine 100 mcg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Glipizide and Metformin 2.5 mg/250 mg PO with breakfast	**Due Today**			**Last Given**
	none			Today @ 0800
Aspirin enteric coated 81 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Coumadin 3 mg PO daily on M, W, F	**Due Today**			**Last Given**
	none			Yesterday
Furosemide 40 mg PO every 12 hours	**Due Today**			**Last Given**
		2230		Today – 1.5 hours ago
Cefazolin 2 g IV every 8 hours	**Due Today**			**Last Given**
		1700	0100	Today – 1.5 hours ago
Clindamycin 900 mg IV every 8 hours	**Due Today**			**Last Given**

		1700	0100	Today – 1.5 hours ago
Duoneb nebulizer 4 times/day	**Due Today**			**Last Given**
			1900	
Pulmicort 0.5 mg nebulizer 2 times/day	**Due Today**			**Last Given**
		1900		
Continuous Infusion				
PRN				
Acetaminophen 500 mg PO 2 tabs every 4-6 hours for pain or fever PRN				**Last Given** Today – 2 hours ago
Nitroglycerin 0.4 mg SL every 5 minutes times 3 doses PRN for angina, if angina pain persists call Provider				**Last Given**
Milk of Magnesia 30 ml PO daily PRN for constipation, may repeat once per day if no relief				**Last Given**
Docusate sodium 100 mg PO 2 times per day PRN for constipation, hold if diarrhea or abdominal pain				**Last Given**
Duoneb nebulizer 2 times per day PRN for shortness of breath and/or wheezing				**Last Given**
Discontinued				

DAILY RECORD

Patient Name	**DOB**	**MR#**
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Daily Record

Vitals	Today – 2 hours ago	Today – 30 minutes ago	Today – 15 minutes ago		
Pulse	72	74	72		
Resp. Rate	26	24	22		
BP Systolic	128	122	118		
BP Diastolic	72	74	78		
Temp (°C)	38.9	37.6	37.6		
O2 Saturation (%)	84	98	94		
Applied Oxygen	2 lpm	15 lpm	4 lpm		
Pain	0	0	0		

24 HR I & O (ml)					
Input					
Output					
Total					

Daily Weight (kg)	Today – 30 minutes ago				
	86.4				

VITALS

The iPad shows the “enterable” vitals screen.

VENTILATOR FLOWSHEET

The iPad shows the “enterable” ventilator flowsheet.

PROGRESS NOTES

No reports available.

LABS-DIAGNOSTICS

Patient Name	DOB	MR#
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Laboratory Results

CBC with Differential					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
WBC	**11.8**			$x10^3$uL	F: 4.7-10.3/M: 4.5-10.5
RBC	**3.6**			$x10^6$uL	F: 4.0-4.9/M: 4.0-4.9
Hgb	**9.9**			g/dL	F:10.9-13.3/M:11.0-13.3
HCT	**30.2**			%	F: 33.0-39.6/M: 32.7-39.3
MCV	76.7			fL	F: 78.5-90.4/M: 76.5-90.6
MCH	25			pg	25-33
MCHC	**30**			g/dL	31-37
RDW	12.3			%	F: 11.6-13.4/M: 12.0-14.0
Platelet	**182**			$x10^9$uL	F: 183-368/M: 194-364
MPV	7.5			7.4-10.4	7.4-10.4
Neutro	**72**			38-68	38-68
Lymph	25.7			25-54	25-54
Mono	0.3			0-0.8	0-0.8
Eos	1			1-5	1-5
Baso	1			0-2	0-2

Chem 7 with Magnesium					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
Glucose	**162**			mg/dL	Fasting 70-150
BUN	**32**			mg/dL	10-25

Creatinine	**3.2**			mg/dL	F: 0.4-1.4/M: 0.5-1.5
Sodium	**134**			mEq/L	135-145
Potassium	3.8			mEq/L	3.5-5.3
Chloride	108			mEq/L	98-108
Carbon Dioxide	**28**			mEq/L	23-27
Magnesium	1.7			mEq/L	1.5-2.5

Liver Enzymes					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
ALT	53			U/L	7-55
AST	36			U/L	8-48
ALP	102			U/L	45-115
Albumin	4.8			g/dL	3.5-5.0
Total Protein	6.9			g/dL	6.3-7.9
Bilirubin	0.9			mg/dL	0.1-1.2

BNP					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
BNP	**2450**			pg/mL	< 75 years old = <125 > 75 years old = <450

TSH					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
TSH	0.7			mlU/L	0.3-3

CK & Troponin					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
CK	330			U/L	M: 52-336/F: 38-176
Troponin	0			ng/mL	<0.1

INR					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
INR	**2.4**			seconds	< 1.1

HbA1c					
	Today – 2 hours ago	[time]	[time]	Units	Reference Range
HbA1c	**10.3**			%	< 5.7

IMAGING

Patient Name	DOB	MR#
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Imaging Report

DESCRIPTION: Portable x-ray for shortness of breath

EXAM: Portable AP chest

REASON FOR EXAM: Shortness of breath

COMPARISON EXAM: None available

TECHNIQUE: 1.5 mAS @ 125 kvp

DISCUSSION: Dictation pending

IMPRESSION: Dictation pending

LEVEL 1

The iPad reads, “The iPad is at Level 1.”

SCANNER

Use this to scan available QR Codes.

EXIT

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.

STATE 1

PATIENT ASSESSMENT

- Patient Overview
    - The patient is on a 4 lpm nasal cannula when students arrive to the room. He is irritated because he is tired and people keep "bugging" him. He wants students to give him his neb, put him on his CPAP, and leave him alone. In this State, students will perform a patient assessment.
- Expected Student Behaviors
    - Perform appropriate hand hygiene and infection control
    - Introduce themselves and verify the patient (can scan **QR Code: Patient ID**)
    - Accurately obtain vital signs and interpret for an adult patient
        - Students can enter vitals on the iPad, but they are not tied to any iPad programming.
    - Perform a focused respiratory assessment
        - Inspection – Students will not find any abnormalities in the chest exam. When the extremities are evaluated, bilateral pitting edema and Right-lower extremity cellulitis is found. (Scan **QR Code: Right Leg** & **QR Code: Left Leg**)
        - Palpation – Students will not find any abnormalities in the chest exam.
        - Percussion – Students will not find any abnormalities in the chest exam.
        - Auscultation – Scan **QR Code: Chest** □
            - There are ten QR codes to apply to the chest – see above Chest QR Code chart for locations
            - Students will hear the following breath sounds:
                - Anterior 2, Anterior 3, Posterior 0, & Posterior 1 = diffuse wheezing most expiratory

        - Anterior 6, Anterior 7, Posterior 4, Posterior 5, Right Axillary, & Left Axillary = diminished with fine crackles

    - Patient History

        - If students ask questions about the patient history, Hector becomes irritated and refused to answer. He states, "I've answered all of these questions before! Can't you people read?"

        - When students ask about his home CPAP settings, the following options can be used:

            - Hector doesn't remember his settings, but states his home care company is ARISE Home Care. Students can call and get settings.

            - Hector states he thinks that it is 10.

            - An RN states that he/she found out the CPAP settings were 10 cwp.

    - Recognize and respond to abnormal findings

    - Demonstrate appropriate communication with the patient

- Technician Prompts

    - Patient is tired and very irritated with his health. He is sick of being sick and will refuses to answer most questions. He just wants them to finish and so he can go to sleep.

    - Patient response can include:

        - "I just so tired. Can you hurry up so I can go to sleep?"

        - "I don't want to answer any more questions. Read my chart or something."

        - "I'm so sick of being in the hospital."

        - "Are you done yet?"

        - "I'm never going to get better..."

        - For questions related to his CPAP settings, see above and make a plan with the facilitator.

- Facilitator Questions

  - Analyze the vital signs: are they within normal limits?
  - Analyze the findings from the pulmonary exam: do you have any concerns?
  - How should you respond to Hector's irritability and general concerns?

- Tabbed iPad Prompts and Content

LEVEL 1/2

- When the Level 1 tab is tapped, the iPad reads, "The iPad is at Level 1."
- The Level 1 tab will automatically change to a Level 2 tab (students are not prompted about this) after the student(s) scans ANY **QR Code: Chest**
- When the Level 2 tab is tapped, the iPad reads, "The iPad is at Level 2."

STATE 2

ABG & NEBULIZER ADMINSTRATION

- Patient Overview
    - Students perform an ABG and administer the nebulizer in this state. The ABG should be done prior to changing the patients O2 for the nebulizer administration. Depending on the number of students participating in the scenario, some could be preparing the CPAP for application in State 3.
- Expected Student Behaviors
    - Safely perform a radial ABG
        - Facilitator Note: There is a video of a right Modified Allen's test (**QR Code: Right Allen's**) and a left Modified Allen's test (**QR Code: Left Allen's**).
        - Students can scan either or both QR Codes to evaluate for collateral circulation prior to the ABG puncture.
        - The ABG should be drawn on the patient's current FiO2 and before starting the nebulizer treatment. In State 3, there are two ABG results, one result is shown if either Modified Allen's is scanned prior to the Duoneb. A different result is shown if the Duoneb is scanned prior to either Modified Allen's test.
    - Safely administer nebulized medication (Scan **QR Code: Duoneb**)
        - Student(s) must scan **QR Code: Patient ID** prior to medication administration.
        - If not scanned, the iPad will read, "ERROR: No patient information available."
    - Reassess patient after the procedure
        - After the Duoneb is scanned, students will hear the following breath sounds:
            - Anterior 2, Anterior 3, Posterior 0, & Posterior 1 = normal/clear
            - Anterior 6, Anterior 7, Posterior 4, Posterior 5, Right Axillary, & Left Axillary = diminished with fine crackles

        - Facilitator Note: The technician can increase the SpO2 during the nebulizer treatment if desired. This may help students that choose to perform the ABG on the nebulizer rather than the patient's current FiO2 realize their error.
    - Demonstrate appropriate communication with the patient
- Technician Prompts
    - The patient asks general questions related to the ABG. He continues to be irritated and wants to go to sleep.
    - Patient responses can include:
        - "Why do I need this test?"
        - "Will this hurt?"
        - "How long will all of this take? I just want to go to bed!"
        - "When can I have my nebulizer and get my CPAP on?"
- Facilitator Questions
    - How will you prioritize your orders and why?
    - Why is it necessary to perform a Modified Allen's test?
    - How did your assessment change after the administration of the nebulizer? Is this what expected? Why or why not?
- Tabbed iPad Prompts & Content

LEVEL 2/3

- When the Level 2 tab is tapped, the iPad reads, "The iPad is at Level 2."
- The Level 2 tab will automatically change to a Level 3 tab (students are not prompted about this) when:
    - Student(s) scans either **QR Code: Left Allen's** or **QR Code: Right Allen's**

      AND
    - Student(s) scans **QR Code: Duoneb** and **QR Code: Pulmicort**
- When the Level 3 tab is tapped, the iPad reads, "The iPad is at Level 3."

STATE 3

ABG INTERPRETATION, PROVIDER NOTIFICATION & CPAP APPLICATION

- Patient Overview
    - Hector continues to be irritated and wants to go to sleep for the night. ABG's result and students should interpret and notify the provider of the results. In addition, they should set up and apply the patient CPAP so he can go to sleep.
- Expected Student Behaviors
    - Safely apply CPAP
    - Interpret ABG results
        - Facilitator Note: The ABG result the student sees is dependent on the following:
            - The student(s) will see **Lab A** (see below) if the Duoneb was scanned prior to the scanning of either Modified Allen's test.
                - This is an inaccurate assessment of the patient's actual status. It was drawn on a nebulizer not the recorded 4 lpm O2.
            - The student will see **Lab B** (see below) if the Modified Allen's test was scanned before the Duoneb.
                - This is an accurate assessment of the patient's status.
    - Demonstrate appropriate communication with the provider
        - Facilitator Note: Students could potentially update the provider with inaccurate results. See facilitator questions.
- Technician Prompts
    - Hector is happy that people are finally going to leave him alone and let him sleep.
    - Patient responses can include:
        - "Finally, I can sleep!"

- "The mask fits fine and the pressure feels good. Can you just leave me sleep now?"

- Facilitator Questions
  - Explain the mechanism behind OSA and how individual CPAP pressures are important.
  - What are the complication associated with the CPAP interface?
  - Ask questions related to the timing of drawing an ABG – if the provider was updated with inaccurate results, how will this affect patient treatment? How will you correct the error?

- Tabbed iPad Prompts & Content

MAR

Patient Name	DOB	MR#
Hector Fernandez	*09/06/19XX*	*41219*
Allergies	**Height (cm)**	**Admission Weight (kg)**
Penicillin (hives)	*175*	*86.4*

Medication Administration Record

Scheduled		
Lisinopril 2.5 mg PO daily	**Due Today**	**Last Given**
	none	Today @ 0800
Metoprolol ER 100 mg PO daily	**Due Today**	**Last Given**
	none	Today @ 0800
Spironolactone 25 mg PO daily	**Due Today**	**Last Given**
	none	Today @ 0800
Atorvastatin 20 mg PO daily	**Due Today**	**Last Given**
	none	Today @ 0800
Diltiazem ER 120 mg PO mg daily	**Due Today**	**Last Given**
	none	Today @ 0800
Levothyroxine 100 mcg PO daily	**Due Today**	**Last Given**
	none	Today @ 0800
	Due Today	**Last Given**

Glipizide and Metformin 2.5 mg/250 mg PO with breakfast	none			Today @ 0800
Aspirin enteric coated 81 mg PO daily	**Due Today**			**Last Given**
	none			Today @ 0800
Coumadin 3 mg PO daily on M, W, F	**Due Today**			**Last Given**
	none			Yesterday
Furosemide 40 mg PO every 12 hours	**Due Today**			**Last Given**
		2230		Today – 1.5 hours ago
Cefazolin 2 g IV every 8 hours	**Due Today**			**Last Given**
		1700	0100	Today – 1.5 hours ago
Clindamycin 900 mg IV every 8 hours	**Due Today**			**Last Given**
		1700	0100	Today – 1.5 hours ago
Duoneb nebulizer 4 times/day	**Due Today**			**Last Given**
				Today – 10 minutes ago
Pulmicort 0.5 mg nebulizer 2 times/day	**Due Today**			**Last Given**
				Today – 10 minutes ago

PRN	
Acetaminophen 500 mg PO 2 tabs every 4-6 hours for pain or fever PRN	**Last Given**
	Today – 2 hours ago
Nitroglycerin 0.4 mg SL every 5 minutes times 3 doses PRN for angina, if angina pain persists call Provider	**Last Given**
Milk of Magnesia 30 ml PO daily PRN for constipation, may repeat once per day if no relief	**Last Given**
Docusate sodium 100 mg PO 2 times per day PRN for constipation, hold if diarrhea or abdominal pain	**Last Given**
Duoneb nebulizer 2 times per day PRN for shortness of breath and/or wheezing	**Last Given**

LABS-DIAGNOSTICS

Lab A (This is the result shown if the Duoneb was scanned prior to the scanning of either Modified Allen's test.)

Arterial Blood Gas (ABG)			
	Today – 30 minutes ago	Units	Reference Range
pH	7.36		7.35-7.45
$PaCO_2$	62	mmHg	35-45
PaO_2	107	mmHg	80-100
HCO_3	38	mmol/L	22-26
Base Excess	+11	mmol/L	0+/-3
SaO_2	100	%	
Site = XX Radial	Modified Allen's test = √		% O2 = 4 lpm

Lab B (This is the result shown if either Modified Allen's test was scanned prior to the Duoneb.)

Arterial Blood Gas (ABG)			
	Today – 30 minutes ago	Units	Reference Range
pH	7.36		7.35-7.45
$PaCO_2$	62	mmHg	35-45
PaO_2	81	mmHg	80-100
HCO_3	38	mmol/L	22-26
Base Excess	+11	mmol/L	0+/-3
SaO_2	94	%	
Site = XX Radial	Modified Allen's test = √		% O2 = 4 lpm

LEVEL 3/EXIT

- When the Level 3 tab is tapped, the iPad displays a plaque the reads, "Have you updated the provider?"

- If “No,” the iPad reads, "You must update the provider before exiting."
- If “Yes,” the iPad reads, “Scenario objectives have been met. Are you sure you want to exit the game?”
    - 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.

DEBRIEF

Nothing needed from the iPad.

QUESTIONS

1. How did you feel this scenario went?
2. What were the main issues you had to deal with when caring for Hector?
3. Review understanding of learning objective: Perform a focused respiratory assessment.
    a. What concerns did you find during your physical assessment and evaluation?
    b. Is this what you would expect in a patient with congestive heart failure? Why or why not?
    c. If you could "do over" any part of Hector's assessment, what would it be and why?
4. Review understanding of learning objective: Recognize and respond to abnormal findings.
    a. What abnormal findings did you encounter in this scenario?
    b. How did you respond to those abnormal findings?
    c. Were the findings what you expected? Why or why not?
5. Review understanding of learning objective: Safely and efficiently execute provider orders.
    a. Why is it important to prioritize provider orders?
    b. Was there a proper order to complete Hector's orders? If so, what was it and why?
    c. Did you feel you were efficient in completely the orders? Why or why not?
    d. If you could "do over" any part of completing Hector's orders, what would it be and why?
6. Review understanding of learning objective: Evaluate objective and subjective data.
    a. What abnormal findings did you find in the vital signs and/or physical assessment? How did you respond to these findings?
    b. Explain how an ABG is affected by different therapeutics including oxygen, nebulizer administration, certain hyperinflation techniques, CPAP/BiPAP, etc...

7. Review understanding of learning objective: Demonstrate appropriate communication.
    a. Were the communication techniques you used with Hector effective? Why or Why not?
    b. If Hector was unable to speak English, how would you have adapted you communication techniques?
    c. If you could "do over," how would you change your communication with Hector?
    d. How did you update the provider with ABG results? (Questions should continue if inaccurate ABG results were given to the provider... How could students rectify the situation?)
8. Review understanding of learning objective: Document accurately.
    a. What is important to document in your assessments and interventions?
    b. If something is done in error, how is this documented? (Relate this back to the ABG and how if it was drawn on a nebulizer at 7 lpm O2 and not the 4 lpm O2 that is documented on the lab results, that is inaccurate and an error.)
    c. How can you correct errors in the chart?
9. Summary/Take Away Points
    a. "Today you cared for a Hispanic patient who was experiencing an exacerbation of his known congestive heart failure. What is one thing you learned from participating in this scenario that you will take with you into your respiratory therapy practice?" (Each student must share something different from what the others' share.)

Note: Debriefing technique is based on INASCL Standard for Debriefing and NLN Theory Based Debriefing by Dreifuerst.

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

   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.

   This QR Code will not work in the ARIS app.

   SURVEY

2. Copy and paste the following survey link into your browser.

   https://ircvtc.co1.qualtrics.com/SE/?SID=SV_6Mwfv98ShBfRnBX

CREDITS

BiPAP Protoco0l adapted from RES Non-Invasive Positive Pressure Ventilation Guideline from http://www.aast.org/Assets/5e4309dd-c952-4a56-b2c9-7060670a7573/635376719195570000/non-invasive-positive-pressure-ventilation-guideline-3-26-14-june-2014-pdf and BiPAP/CPAP Protocol from http://desmondallen.com/Parent/Archived%20Articles/Advance%20RCP/BiPAP%20Protocols.htm

CXR image from: https://commons.wikimedia.org/wiki/File:Pulmonary_oedema.jpg

Lung sounds used with permission from Thinklabs Medical, LLC, Centennial, CO at www.thinklabs.com

Medication information from National Library of Medicine: Daily Med at http://dailymed.nlm.nih.gov/dailymed/ Pitting Edema picture from https://en.wikipedia.org/wiki/Heart_failure

Pitting Edema picture with cellulitis from https://commons.wikimedia.org/wiki/File:Pitting_Edema2008.jpg

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