WOUND MANAGEMENT

Estimated Time: 60 minutes • Debriefing Time: 60 minutes

Scan to Begin

Patient Name: Clint D. Fullerton

SCENARIO OVERVIEW

Clint D. Fullerton is a 67-year-old male who was admitted to the medical/surgical floor 2 days ago for treatment of a left ankle ulceration and is on contact precautions for CDiff. He has a past history of diabetes, venous insufficiency and self-care deficits. He has a PICC line in the left brachial for Vancomycin. This morning, labs showed an elevated peak Vancomycin level and the nurse found the patient short of breath with SpO2 at 87% on RA. She increased his O2 to 4 lpm nasal cannula and called the provider. New orders were received including an RT consult. The student(s) finds the patient in respiratory distress and will receive new orders for a STAT ABG, portable chest x-ray and BiPAP per protocol. After analyzing the ABG and x-ray results, the provider gives new order to intubate and place on mechanical ventilation per protocol.

LEARNING OBJECTIVES

1. Demonstrate proper infection control
2. Complete a respiratory assessment and evaluation
3. Recognize and respond to abnormal findings
4. Recommend appropriate treatment(s) to provider
5. Safely implement all respiratory therapy orders
6. Effectively communicate with the interprofessional team and patient
7. 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 AND CIRCULATORY PHYSIOLOGY

- Apply the principles of gas transport
- Interpret blood gas data
- Identify normal fluid and electrolyte balance values

RESPIRATORY DISEASE

- Evaluate radiologic images of the chest

RESPIRATORY AIRWAY MANAGEMENT

- Demonstrate the use of manual resuscitators
- Assess the need for artificial airways

- Apply basic artificial airways
- Apply advanced artificial airways

RESPIRATORY LIFE SUPPORT

- Assess the need for mechanical ventilation
- Apply non-invasive mechanical ventilation
- Apply invasive mechanical ventilation
- Operate various ventilators
- Evaluate patient response to mechanical ventilation
- Correlate mechanical ventilation strategies to various disease states

RESPIRATORY CARDIO DIAGNOSTICS

- Interpret data from invasive and non-invasive procedures to assess oxygenation
- Interpret data from invasive and non-invasive procedures to assess ventilation

RESPIRATORY CLINICAL COMPETENCIES

- Apply standard precautions
- Assess vital signs
- Perform pulse oximetry
- Perform chart review
- Administer oxygen therapy
- Apply non-invasive positive pressure ventilation
- Perform manual ventilation
- Perform cuff pressures
- Check a ventilator
- Set up various types of ventilators
- Perform arterial puncture
- Assist with intubation

- Perform capnography

SIMULATION LEARNING ENVIRONMENT & SET-UP

ENVIRONMENT

Inside room: Patient lying in bed, IV pump

Inside or outside room: Modified Contact Precautions cart and sink

Outside room: Computer or form(s) for documentation

PATIENT PROFILE

Name: Clint D. Fullerton

DOB: 02/26/19XX

Age: 67

MR#: 0508

Gender: Male

Height: 173 cm (68 inches)

Weight: 65 kg (143 lbs)

Code Status: Full Code

Primary Language spoken: English

Current Medications: None

Allergies: None

Admitting Diagnosis: wound, open, ankle (S91.00)

Medical History: Diabetes Mellitus (E11.9), HTN (I87.33), Venous Insufficiency (I87.2)

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- Hospital gown
- Pad, chux placed under patient or adult brief on
- No moulage
- ID band present with QR code
- IV in left hand
- PICC in left arm (set up medication administration)
- 4 lpm nasal cannula

Monitor Settings

- Vitals: BP 110/54, P 118, RR 34, O2 86% on 4lpm nasal cannula, T 38.2C (100.8)

Supplies

- General
    - Phone
    - Modified or CDiff precaution door sign
    - Contact precaution cart/supplies
    - Various O2 delivery devices and a BiPAP with assorted masks
- Medications
    - Vancomycin hanging on the PICC line, but not running
    - IV Pump
    - 0.9% NaCl running at TKO (1000ml bag)

QR CODES

START	PATIENT	REPORT	PATIENT ID
CHEST	LEG	IV	PICC

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. Show them how to use the ARISE "stethoscope" and the symbol on the QR Code that signifies when a QR Code is audio 🔊. Example: **QR Code: Chest** 🔊
    - 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 Up 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...
    - For this scenario, the only QR Code tied to iPad programming is **QR Code: Chest**. However, all other QR Codes listed below are active and can be used to augment realism in the simulated environment.
- Discuss the simulation "Learning Objective(s)" (on iPad) as well as any other Prebrief materials
- Get "Report" on iPad
    - Possible Facilitator Questions

        - How will you prepare to consult on this patient given the nurses report?
        - What are your priorities for this patient?

- Play the “Patient” video (on iPad)
    - Possible Facilitator Questions
        - What communication strategies could you employ when you assess and evaluate Mr. Fullerton?
- 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.
- Now, students can enter the room and begin the next state of the simulation.

HISTORY & PHYSICAL

Name: Clint D. Fullerton

MR#: 0508
DOB: 02/26/19XX

DATE OF ADMISSION: two days ago

CHIEF COMPLAINT: Ulceration Left Lower leg

HISTORY OF PRESENT ILLNESS: This is a 67-year-old male who resides at a local skilled nursing facility due to self-care deficits. He has a stage 2 ulceration on his left medial lower leg superior to ankle. He has been previously treated by Dr. Paulson who ordered multiple rounds of antibiotic treatment with no successful results. He is a brittle diabetic with his last HgbA1c being 9.2%.

PAST MEDICAL HISTORY: History of diabetes, HTN, venous insufficiency.

MEDICATIONS:

- Lisinopril 20mg PO daily
- Lantus insulin 0.2 units/kg/daily subcutaneously
- Novolin R insulin sliding scale subcutaneously with meals

ALLERGIES: None

SOCIAL HISTORY: Divorced; No children; Lived in LTC for 5 years. History of extensive alcohol use prior to LTC admission. Refuses to quantify current use but states LTC staff will take it away if they find it.

FAMILY HISTORY: Father - died in MVA at age 59. Mother – living, diabetic, age 91. Brothers – 2, status unknown.

REVIEW OF SYSTEMS:
Obtained From patient General: Current state of health described as fine.

Integument: Denies itching, dryness, rashes, pigmentation changes. Denies recent changes in birthmarks, moles, nails, or hair. Describes a sore above left ankle that has been present for several months. He has taken several antibiotics but it won't heal.

Lymph Nodes: Denies enlargement or tenderness

Head: Denies injury, change in level of consciousness, or headaches.

Eyes: Denies change in vision. Denies diplopia, eye pain, eye redness/inflammation. Denies glaucoma or cataracts. Wears glasses.

Ears: Denies hearing loss, change in acuity, tinnitus, vertigo, infection, or ear pain.

Nose: Denies sinusitis, nasal discharge or obstruction, post nasal drip, or epistaxis.

Mouth: Denies bleeding gums, mouth pain, oral cavity sores or growths, difficulty swallowing, sore throat, or hoarseness.

Respiratory: Denies excessive snoring, orthopnea, hemoptysis, productive cough, shortness of breath or wheezing. Denies history of pulmonary embolism, sleep apnea, bronchitis, pneumonia, recurrent infections or TB exposure. Denies occupational exposure to asbestosis or pneumoconiosis.

Cardiovascular: Denies chest pain or pressure. Denies palpitations or orthopnea. No history of murmur or valve disorder. History of hypertension for which he takes lisinopril.

Peripheral Vascular: Denies claudication, leg cramps, varicose veins, phlebitis, cramping. History of venous insufficiency and paresthesias in lower legs. States my legs get swollen every now and then, but it gets better when I sit in my recliner and put them up, and it used to feel like pins and needles in my feet but now I can't really feel my toes anymore.

Gastrointestinal: Denies change in appetite, weight gain/loss, abdominal pain, constipation, diarrhea, nausea or vomiting. Denies bloody or tarry stools. Denies change in bowel habits. Bowel movements occurring every 1-2 days. Denies history of colon polyps, hemorrhoids, liver problems, jaundice, or hepatitis. Denies symptoms of GERD.

Genitourinary: Denies dysuria, hematuria, hesitancy or change in stream. Denies history of infections or stone. Denies incontinence or nocturia.

Males: Denies history of hernias, testicular masses, prostatitis, STDs, or BPH. Denies current testicular pain, penile discharge/lesions or sexual dysfunction.

Musculoskeletal: Denies joint pain or stiffness. Normal ROM. Denies myalgias. No history of gout, osteopenia/ osteoporosis or osteoarthritis. Denies back pain. Denies history of compression fractures, broken bones, falls or amputations.

Hematopoietic: Denies easy bruising or bleeding. Denies anemia or prolonged bleeding. Denies history of previous transfusions or blood dyscrasias.

Endocrine: Denies polydipsia or polyuria. Denies heat or cold intolerance. Denies tremors. Denies history of thyroid disorder. History of diabetes for which he is taking Lantus and sliding scale regular insulin. Last HgbA1c was 9.2%.

Nervous System: Denies dizziness, syncope, vertigo, sensory or motor disturbances, tremor or weakness.

Psychiatric: Denies depression, anxiety, or panic attacks. Denies memory concerns. Denies history of mania. No recent personality changes. No history of previous psychiatric care.

LABORATORY AND DIAGNOSTIC STUDIES: Pending

ASSESSMENT: Ulceration, left lower leg.

RECOMMENDATIONS/PLAN: Admit to med/surg floor. Orders will include wound culture, wound nurse consult, and dietitian consult. I discussed with him the exact nature of the wound and his risk factors including diabetes management and personal hygiene. Patient will be continued on his medication regiment from long term care until his diabetic status can be reviewed. Wound treatment regimen will be determined once culture results are back. All questions were answered and he agreed with treatment plan.

Electronically Signed – Dr. Robert Bennett

ORDERS

Orders

<table>
<tr><th>Date</th><th>Time</th><th>Order</th></tr>
<tr><td>Admit</td><td>1800</td><td>Admit to Med Surg</td></tr>
<tr><td></td><td></td><td>CBC with differential, Stool and Wound culture STAT</td></tr>
<tr><td></td><td></td><td>Diabetic Diet</td></tr>
<tr><td></td><td></td><td>Lisinopril 20mg PO daily</td></tr>
<tr><td></td><td></td><td>Ibuprofen 200mg PO 1-2 tablets Q 4-6 PRN for pain or fever</td></tr>
<tr><td></td><td></td><td>Saline lock flush 10mL IVP PRN</td></tr>
<tr><td></td><td></td><td>0.9% Normal Saline IV at 75mL/hr</td></tr>
<tr><td></td><td></td><td>Call if CDiff positive</td></tr>
<tr><td></td><td></td><td>Lantus insulin 0.2 units/kg/daily subcutaneously</td></tr>
<tr><td></td><td></td><td>Novolin R insulin Sliding Scale subcutaneously with meals:
<table>
<tr><th>Fingerstick glucose level (mg/dL)</th><th>Novolin R (units)</th></tr>
<tr><td>150-200</td><td>4</td></tr>
<tr><td>201-250</td><td>8</td></tr>
<tr><td>251-300</td><td>12</td></tr>
<tr><td>301-350</td><td>16</td></tr>
<tr><td>351-400</td><td>20</td></tr>
</table></td></tr>
<tr><td></td><td></td><td>Dress L ankle wound with Tegaderm and compressive ACE wrap and consult wound care nurse</td></tr>
<tr><td></td><td></td><td>----------Dr. Robert Bennett</td></tr>
<tr><td>Yesterday</td><td>0800</td><td>Chem 7 STAT</td></tr>
<tr><td></td><td></td><td>Vancomycin 25 mg/kg IVPB over 1 hour x 1 dose STAT then</td></tr>
<tr><td></td><td></td><td>Vancomycin 15 mg/kg IVPB over 1 hour every 12 hours</td></tr>
<tr><td></td><td></td><td>PICC line</td></tr>
<tr><td></td><td></td><td>Heparin 100IU/mL flush 10mL IVP PRN</td></tr>
<tr><td></td><td></td><td>Peak Vancomycin levels x 1, trough Vancomycin levels daily</td></tr>
<tr><td></td><td></td><td>Contact precautions ---------Dr. Robert Bennett</td></tr>
<tr><td>Today</td><td>Now</td><td>CBC, Chem 7 & eGFR STAT</td></tr>
<tr><td></td><td></td><td>Consult Nephrology</td></tr>
<tr><td></td><td></td><td>Hold Vancomycin. Call with trough result.</td></tr>
<tr><td></td><td></td><td>Consult Infectious Disease</td></tr>
</table>

		Monitor I&O
		Change NS IV to TKO
		Lasix 40 mg IV STAT
		O2 to keep Sat >90% & RT Consult ---------- ----------Dr. Robert Bennett

Continue >

MAR

Facilitator Note: Students may click on each underlined medication for a hyperlink with medication information provided by National Library of Medicine.

MAR

Patient Name: Clint Fullerton
DOB:02/26/19XX Weight(kg):65
MR#: 0508
Provider: Dr. Robert Bennett
Allergies: None

Order	Sch. Time	Dose
Lisinopril 20mg PO daily	Last given 0730	20mg
Lantus insulin 13 units daily subcutaneously	Last given 0730	13 units
0.9% Normal Saline IV at 75 mL/hour	Last bag 0330	
0.9% Normal Saline IV at 75 mL/hour		

Ibuprofen 200 mg PO 1-2 tablets Q 4-6 PRN for pain or fever	Last given 0730	400mg
Ibuprofen 200 mg PO 1-2 tablets Q 4-6 PRN for pain or fever		
Saline lock flush 10mL IVP PRN		
Novolin R insulin Sliding Scale subcutaneously with meals PRN:	Last given 0730	8 units
Novolin R insulin Sliding Scale subcutaneously with meals:		
Vancomycin 15 mg/kg IVPB over 1 hour Q12 hours	Given ystrdy 2030	975mg
Vancomycin 15 mg/kg IVPB over 1 hour Q12 hours	HOLD	
Heparin 100 IU/mL flush, 10 mL IVP PRN	Given ystrdy 2140	10mL
Heparin 100 IU/mL flush, 10 mL IVP PRN		
Lasix 40mg IV STAT		

Fingerstick glucose level (mg/dL)	Novolin R (units)
150-200	4
201-250	8
251-300	12
301-350	16
351-400	20

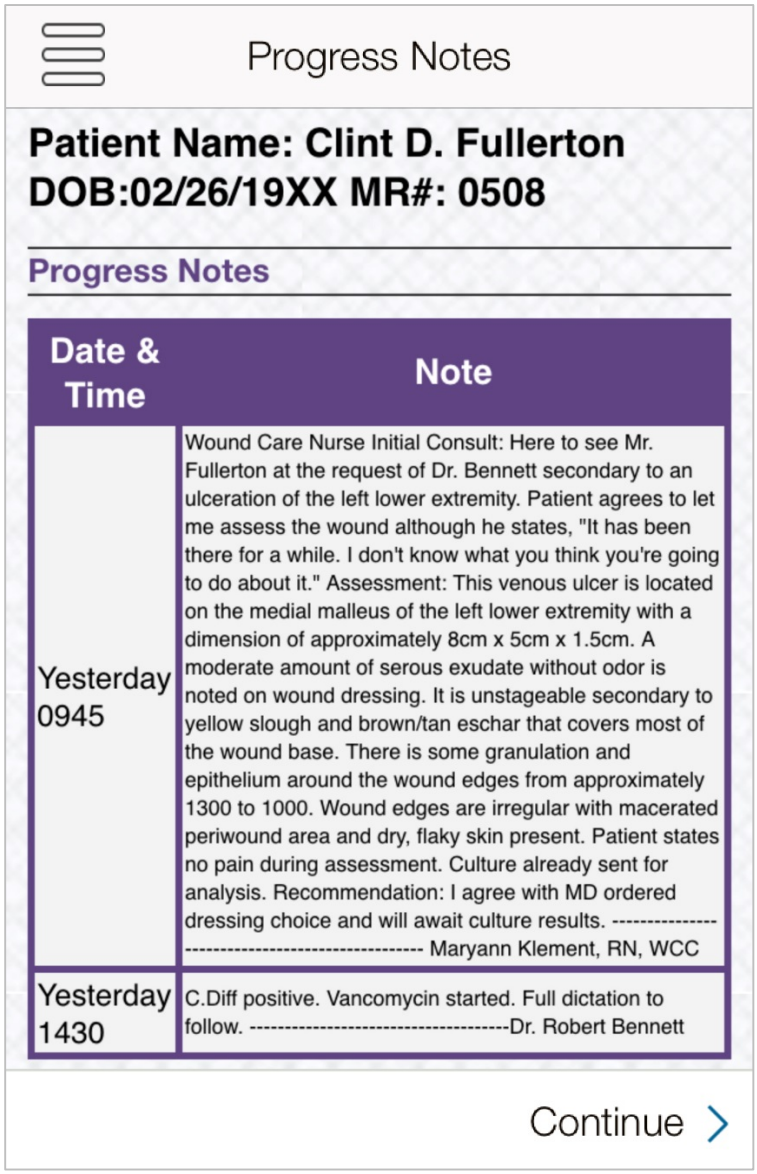
Continue >

VITALS

Today – 10 minutes ago

BP 128/68
P 118
RR 26
O2 87% on 4 lpm
T 38.2C (100.8)
Pain: 3/10

PROGRESS NOTES



Progress Notes

Patient Name: Clint D. Fullerton
DOB:02/26/19XX MR#: 0508

Progress Notes

Date & Time	Note
Yesterday 0945	Wound Care Nurse Initial Consult: Here to see Mr. Fullerton at the request of Dr. Bennett secondary to an ulceration of the left lower extremity. Patient agrees to let me assess the wound although he states, "It has been there for a while. I don't know what you think you're going to do about it." Assessment: This venous ulcer is located on the medial malleus of the left lower extremity with a dimension of approximately 8cm x 5cm x 1.5cm. A moderate amount of serous exudate without odor is noted on wound dressing. It is unstageable secondary to yellow slough and brown/tan eschar that covers most of the wound base. There is some granulation and epithelium around the wound edges from approximately 1300 to 1000. Wound edges are irregular with macerated periwound area and dry, flaky skin present. Patient states no pain during assessment. Culture already sent for analysis. Recommendation: I agree with MD ordered dressing choice and will await culture results. ---------- Maryann Klement, RN, WCC
Yesterday 1430	C.Diff positive. Vancomycin started. Full dictation to follow. ----------Dr. Robert Bennett

Continue >

LAB-DIAGNOSTICS

Labs-Diagnostics

Patient Name: Clint D. Fullerton DOB: 02/26/19XX MR#: 0508

Blood Glucose

Date	Yesterday	Today			Units	Reference Range
Time	AM	AM				
Glucose	210	208			mg/dL	Fasting 70 - 105

Chem 7

Date	Yesterday				Units	Reference Range
Time	AM					
Glucose	210				mg/dL	Fasting 70 - 105
BUN	28				mg/dL	10-25
Creatinine	1.4				mg/dL	F: 0.4-1.4/M: 0.5-1.5
Sodium	156				mEq/L	135-145
Potassium	3.8				mEq/L	3.5-5.3
Chloride	98				mEq/L	98-108
Carbon Dioxide	26				mEq/L	23-27

CBC with Differential

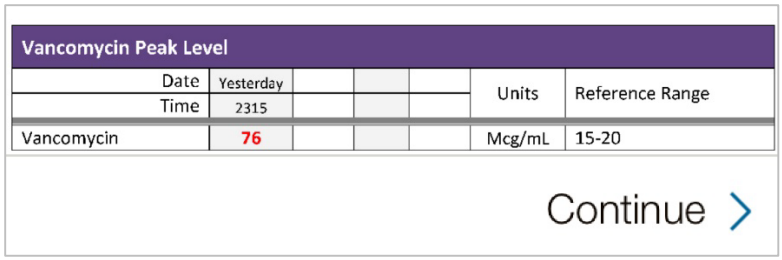
Date	Yesterday			Units	Reference Range
Time	AM				
WBC	13.2			x 10^3 uL	4.5-11.0
RBC	3.9			x 10^6 uL	F: 4.2-5.4/M: 4.6-6.2
HgB	12.1			g/dL	F: 13.0-15.0/M: 14.0-17.0
HCT	38.1			%	F: 38-47/M: 42-52
MCV	85.3			fL	80-90
MCH	27.8			pg	27-32
MCHC	33.6			g/dL	32-36
RDW	13.2			%	11.5-14.5
Platelet	204			x 10^9 uL	150-450
MPV	7.8			fL	6.0-12.0
Neutro	74			%	40-70
Lymph	21.5			%	22-40
Mono	2.3			%	1-10
Eos	1.4			%	1-7
Baso	0.8			%	0-2

Wound Culture

Date	Yesterday	Today			Units	Reference Range
Time	AM	AM				
Bacterial Growth	0	0				No growth

Stool Culture

Date	Yesterday				Units	Reference Range
Time	AM					
Clostridium difficile	Positive					Negative



Vancomycin Peak Level						
Date	Yesterday				Units	Reference Range
Time	2315					
Vancomycin	76				Mcg/mL	15-20

Continue

IMAGING

No reports available.

LEVEL UP

Option not available yet.

SCANNER

STATE 1

PATIENT ASSESSMENT

- Patient Overview
    - Patient is sarcastic and gruff. It is apparent that he does not care for medical personnel or medical facilities. He is very short of breath this morning and only speaking in one or two word sentences.
- Expected Student Behaviors
    - Perform appropriate hand hygiene and infection control
    - Introduce themselves and verify patient
    - Effectively communicate with the patient
    - Perform a respiratory assessment and evaluation: crackles (Scan the **QR Code: Chest**🔊)
    - Respond to abnormal findings and intervene appropriately: increase O2
    - Analyze laboratory and diagnostic test results
    - Communicate with the provider using SBAR format
- Technician Prompts
    - Patient is a quite short of breath. When he does speak, it is in short one to two word statements. He is gruff.
    - Patient responses can include:
        - "I can't breathe."
        - "Help me."
        - "Am I dying?"
    - When the O2 is increased from 4 lpm to either 6 lpm or > than 50% (venti-mask or non-rebreather), change the monitor to reflect an increased SpO2, but do not go above 90%.
    - When the provider is called (technician or facilitator is playing this role):
        - Student(s) should communicate using SBAR format.
            - Ensure history and vitals are accurate.
            - If lab results are not provided, ask for them.

        - Give student(s) the following orders:
            - STAT ABG & portable chest x-ray – call with results
            - BiPAP per protocol
            - Student(s) should repeat orders back using closed-loop communication.

- Possible Facilitator Questions
    - What infection control concerns do you have?
    - Analyze the vital signs: do you have any concerns?
    - Analyze your physical assessment findings: do you have any concerns?
    - What do you think is causing Mr. Fullerton's current state?
    - How do you plan on prioritizing your findings? What is most important to do first and why?
    - What is Mr. Fullerton's code status? Why is it important to know that data prior to evaluating your patients?
    - Why was the Vancomycin held? (What types of infection was it supposed to treat)?
    - Why is an elevated peak Vancomycin level concerning and how does it affect the management of this patient?
    - How does the SBAR format facilitate interprofessional communication?
- Tabbed iPad Prompts & Content
    - Leveling Up to State 2: After the **QR Code: Chest** is scanned, the tabbed Level Up option will become available (students are not prompted about this).
    - When the Level Up tab is tapped (students are not prompted to this), the tabbed content will read, "Have you called the provider?"
        - If "No" is selected, the iPad will read, "You need to call the provider to advance to Level 2."
        - If "Yes" is selected, the iPad will read, "The iPad is now set to Level 2. You have new orders to review."

LEVEL UP

- The **QR Code: Chest** must be scanned for the Level up option to appear.
- When the Level Up tab is tapped (students are not prompted to this), the tabbed content will read, “Have you called the provider?”
    - If “No” is selected, the iPad will read, “You need to call the provider to advance to Level 2.”
    - If “Yes” is selected, the iPad will read, “The iPad is now set to Level 2. You have new orders to review.”

STATE 2

NEW ORDERS & REASSESSMENT

- Patient Overview
    - The patient continues to be short of breath. He is anxious and scared about his current condition while remaining gruff and sarcastic.
- Expected Student Behaviors
    - Perform appropriate infection control
    - Effectively communicate with the patient
    - Draw Arterial Blood Gas prior to BiPAP initiation
    - Initiate BiPAP
    - Reassess the patient
    - Interpret ABG and chest x-ray results
    - Communicate with the provider using SBAR format
    - Document appropriately
- Technician Prompts
    - The patient is still short of breath. He doesn't like the idea of either the ABG or the BiPAP. Student(s) will need to convince him to do both. Once on the BiPAP, all verbal communication by the patient should be extremely muffled – almost incoherent.
    - Patient responses can include:
        - "I can't breathe." "I'm scared."
        - "What do I need that for?"
        - "I'm not sure about that."
    - When updating the provider (technician or facilitator is playing this role):
        - Student(s) should communicate using SBAR format.
            - Ensure current vitals, ABG's and x-ray results are accurate.
            - Ensure update regarding BiPAP settings, patient tolerance, etc... are accurate.

- Give student(s) the following orders:
  - Intubate and place on mechanical ventilation per protocol
  - Consult pulmonology
- Student(s) should repeat orders back using closed-loop communication.

- Possible Facilitator Questions
  - How will you prioritize the new orders you've received?
  - How will you address Mr. Fullerton's concerns regarding the ABG and BiPAP orders?
  - Describe how you will maintain proper infection control during the ABG draw and BiPAP implementation?
  - Interpret the ABG results: how will the results affect the management of this patient?
  - Review the chest x-ray: does the image correspond to Mr. Fullerton's physical signs and symptoms? Why or why not?
  - What initial BiPAP settings are appropriate for this patient and why?
  - What is the best patient interface for this patient and why?
  - After reassessing the patient, do you have any concerns? If so, how will you address them?
  - How often should the patient be reassessed/monitored? Why?
  - How does the SBAR format facilitate interprofessional communication?
- Tabbed iPad Prompts & Content
  - Lab/Diagnostics
    - When the Lab/Diagnostics tab is tapped, the iPad will read, "Has the ABG been drawn?"
      - If "No" is selected, the iPad will read, "An ABG needs to be drawn per the new provider orders."
      - If "Yes" is selected, the iPad will read, "ABG results will be available soon." When tapped after this, the Lab/Diagnostics tabbed content will change to the content below.

- Imaging
    - When the Imaging tab is tapped, the iPad will read, “Has an x-ray been taken?”
        - If “No” is selected, the iPad will read, “An x-ray needs to be taken per the new provider orders.”
        - If “Yes” is selected, the iPad will read, “X-ray results will be available soon.” When tapped after this, the Imaging tabbed content will change to the content below.
- Level Up
    - When the Level Up tab is tapped (students are not prompted to this), the tabbed content will read, “Have you called the provider?”
        - If “No” is selected, the iPad will read, “You need to call the provider to advance to Level 3.”
        - If “Yes” is selected, the iPad will read, “The iPad is now set to Level 3. You have new orders to review.”

LAB-DIAGNOSTICS

Labs-Diagnostics

Patient Name: Clint D. Fullerton **DOB: 02/26/19XX** **MR#: 0508**

Blood Glucose

Date	Y-day	Today		Units	Reference Range
Time	AM	AM			
Glucose	210	208		mg/dL	Fasting 70-105

Chem 7

Date	Y-day	Today		Units	Reference Range
Time	AM	15 min. ago			
Glucose	210	115		mg/dL	Fasting 70-105
BUN	28	31		mg/dL	10-25
Creatinine	1.4	1.7		mg/dL	F: 0.4-1.4/M: 0.5-1.5
Sodium	156	146		mEq/L	135-145
Potassium	3.8	3.9		mEq/L	3.5-5.3
Chloride	98	101		mEq/L	98-108
Carbon Dioxide	26	27		mEq/L	23-27

CBC with Differential

Date	Y-day	Today		Units	Reference Range
Time	AM	15 min. ago			
WBC	13.2	11.4		$x10^3uL$	4.5-11
RBC	3.9	4.2		$x10^6uL$	F: 4.2-5.4/M: 4.6-6.2
HgB	12.1	12.6		g/dL	F:13.0-15.0/M:14.0-17.0
HCT	38.1	38.7		%	F: 38-47/M: 42-52
MCV	85.3	84.6		fL	80-90
MCH	27.8	28.2		pg	27-32
MCHC	33.6	33.9		g/dL	32-36
RDW	13.2	13.0		%	11.5-14.5
Platelet	204	196		$x10^9uL$	150-450
MPV	7.8	7.2		fL	6.0-12.0
Neutro	74			%	40-70
Lymph	21.5			%	22-40
Mono	2.3			%	1-10
Eos	1.4			%	1-7
Baso	0.8			%	0-2

Wound Culture

Date	Y-day	Today		Units	Reference Range
Time	AM	AM			
Bacterial Growth	0	0			No growth

Stool Culture

Date	Y-day			Units	Reference Range
Time	AM				
Clostridium difficile	Positive				Negative

Vancomycin Peak Level

Date	Y-day			Units	Reference Range
Time	2315				
Vancomycin	76			mcg/mL	15-20

eGFR

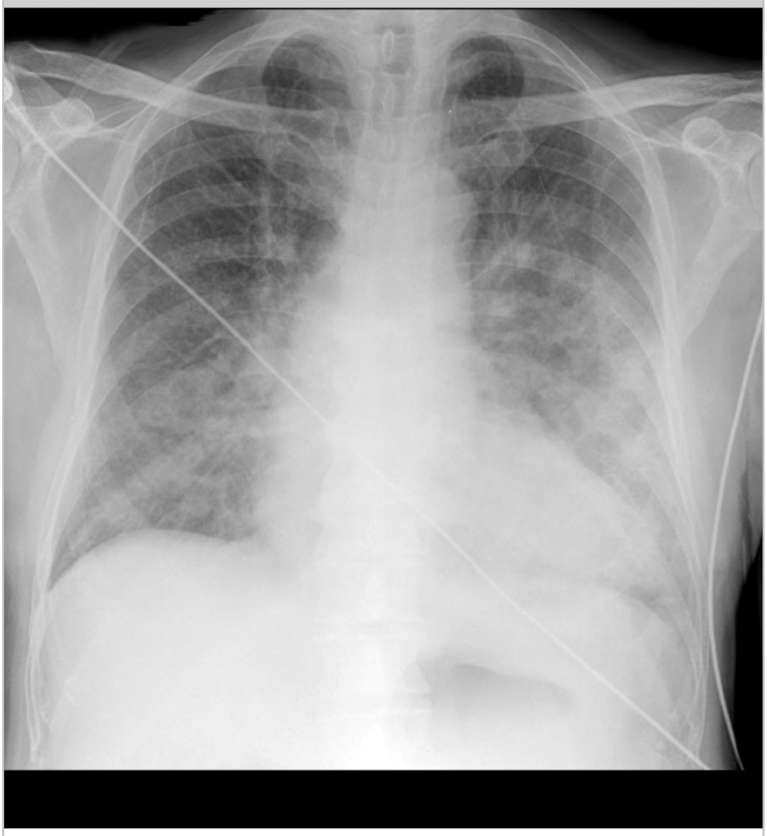
Date	Today			Units	Reference Range
Time	15 min. ago				
eGFR	31			mL/min	90-120

Arterial Blood Gas (ABG)					
Date	Today			Units	Reference Range
Time	Now				
pH	7.21			units	7.35-7.45
$PaCO_2$	68			mmHg	35-45
PaO_2	58			mmHg	80-100
HCO_3	24			mmol/L	22-26
Base Excess (BE)	1			mmol/L	0+/-3
SaO_2	88			%	

Continue >

IMAGING

XRAY Result



Patient: Clint D. Fullerton
MR#: 0508
Date: Today

Continue >

LEVEL UP

- When the Level Up tab is tapped (students are not prompted to this), the tabbed content will read, “Have you called the provider?”
    - If “No” is selected, the iPad will read, “You need to call the provider to advance to Level 3.”
    - If “Yes” is selected, the iPad will read, “The iPad is now set to Level 3. You have new orders to review.”

STATE 3

NEW ORDERS

- Patient Overview
    - The patient continues to be short of breath while on BiPAP. He is less gruff and more scared and worried about his current condition.
- Expected Student Behaviors
    - Perform appropriate infection control
    - Effectively communicate with the patient
    - Communicate new orders to the interprofessional team
    - Gather supplies for intubation and mechanical ventilation
    - Assist with intubation
    - Initiate mechanical ventilation per protocol
    - Document appropriately
- Technician Prompts
    - The patient is still short of breath while on the BiPAP. He is trying to ask questions about the intubation and mechanical ventilation and seems quite nervous. However, while on the BiPAP all verbal communication should be muffled and almost incoherent.
    - Patient responses can include:
        - "Will it hurt?"
        - "Will I be awake?"
        - "Why do I need this?"
        - "How long will I need this?"
    - When communicating new orders to the interprofessional team (technician, facilitator or other students are playing these roles):
        - Student(s) should communicate using SBAR format.
            - Ensure history, current vitals, and orders are accurate.
- Possible Facilitator Questions

- How will you prioritize the new orders you've received?
- How will you address Mr. Fullerton's concerns regarding the intubation and mechanical ventilation?
- Describe how you will maintain proper infection control during the intubation and mechanical ventilation initiation?
- What medications will help facilitate the intubation and mechanical ventilation?
- How do you ensure the intubation was successful?
- What initial mechanical ventilation settings are appropriate for this patient and why?
- After reassessing the patient, do you have any concerns? If so, how will you address them?
- How often should the patient be reassessed/monitored? Why?
- How does the SBAR format facilitate interprofessional communication?

- Tabbed iPad Prompts & Content
  - Level Up/Exit
    - The Level Up tab automatically changes to an Exit tab after the iPad advances to this state (students are not prompted to this).
    - When the Exit tab is tapped, the iPad will read, "Are you sure you have completed the simulation? When you exit, all iPad progress 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.

ORDERS

Orders

Date	Time	Order
Admit	1800	Admit to Med Surg
		CBC with differential, Stool and Wound culture STAT
		Diabetic Diet
		Lisinopril 20mg PO daily
		Ibuprofen 200mg PO 1-2 tablets Q 4-6 PRN for pain or fever/td>
		Saline lock flush 10mL IVP PRN
		0.9% Normal Saline IV at 75mL/hr
		Call if CDiff positive
		Lantus insulin 0.2 units/kg/daily subcutaneously
		Novolin R insulin Sliding Scale subcutaneously with meals:

Fingerstick glucose level (mg/dL)	Novolin R (units)
150-200	4
201-250	8
251-300	12
301-350	16
351-400	20

		Dress L ankle wound with Tegaderm and compressive ACE wrap and consult wound care nurse
		----------Dr. Robert Bennett
Yesterday	0800	Chem 7 STAT
		Vancomycin 25 mg/kg IVPB over 1 hour x 1 dose STAT then
		Vancomycin 15 mg/kg IVPB over 1 hour every 12 hours
		PICC line
		Heparin 100IU/mL flush 10mL IVP PRN
		Peak Vancomycin levels x 1, trough Vancomycin levels daily
		Contact precautions ---------Dr. Robert Bennett
Today		CBC, Chem 7 & eGFR STAT
		Consult Nephrology
		Hold Vancomycin. Call with trough result.

		Consult Infectious Disease
		Monitor I&O
		Change NS IV to TKO
		Lasix 40mg IVP STAT
		O2 to keep Sat >90% & RT Consult --Dr. Robert Bennett
Today	1 hr ago	STAT ABG and Portable Chest x-ray - call with results
		BiPAP per protocol ----------Dr. Robert Bennett
Today	Now	Intubate and place on mechanical ventilation per protocol
		Consult Pulmonology ---------Dr. Robert Bennett
		Adult Mechanical Ventilator Initiation & Management Protocol This protocol requires the following conditions: 1. An adult patient (18 years old or >) not diagnosed with ARDS or ALI. 2. A provider order for both intubation and mechanical ventilation per protocol. 3. Any deviation from this protocol requires a provider order. 4. A pulmonary consult is ordered whenever this protocol in initiated. Initial Ventilator Settings and Management 1. **MODE:**A volume-based mode of ventilation (ie. VC or VC+) will be used for all patients. If peak pressures rise over 40 cm H2O or plateau pressures rise over 30 cm H2O, then consult the provider for consideration of pressure ventilation. 2. **TIDAL VOLUME:**Set tidal volume between 6 - 8 ml/kg IBW. If plateau pressures rise about 30 cm H2O, consult provider to discuss lower set volume. 3. **RATE:**Set at 10-16 breaths/minute. Adjust to keep pH 7.35 - 7.45.

		4. **PEEP:**Set at 5-8 cm H2O and increase secondary to FiO2 requirements. Provider must be notified of PEEP requirements at or > than 12 cm H2O. 5. **FiO2:**Adjust to keep SpO2 > 90%. If more than 60% O2 required, increase PEEP in increments of 2 cm H2O up to 12 cm H2O. Notify Provider if > 60% O2 required while also set at 12 cm H2O of PEEP. Wean patient to the lowest FiO2 and PEEP levels needed to keep SpO2 > 90%. 6. Assess readiness to wean each morning and throughout the day as appropriate (done in agreement with the patient's nurse and the critical care team) according to the following criteria: ▪ Underlying disease or condition that led to intubation/mechanical ventilation is stable or improving. ▪ ABG's are normalized. ▪ SpO2 > 90% on FiO2 of < 50% and PEEP < 8 cm H2O. ▪ PaO2/FiO2 > 200 ▪ Ve < 10 - 15 lpm ▪ RSBI < 100 ▪ Hemodynamically stable and without significant dysrhythmias. ▪ No anemia, fever, or electrolyte imbalances. ▪ Patient is without neuromuscular blockades and awakens when sedation lowered. If the patient meets the above criteria, initiate the "Adult Mechanical Ventilator Weaning Protocol" and begin a SBT.

Continue >

LEVEL UP/EXIT

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        - 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 Mr. Fullerton?
3. Review understanding of learning objective: demonstrate proper infection control.
    a. What infection control measures did you institute for Mr. Fullerton and why?
    b. Where you able to ensure proper infection control throughout the simulation? Why or why not?
    c. From an infection control standpoint, would you do anything differently? What?
4. Review understanding of learning objective: complete a respiratory assessment and evaluation.
    a. What did concerns did you find during your initial assessment and evaluation?
    b. How did those concerns relate to the patient's overall state at the time?
5. Review understanding of learning objective: recognize and respond to abnormal findings.
    a. What abnormal findings did you find in the vital signs, physical assessment or labs? How did you respond to these findings?
6. Review understanding of learning objective: recommend appropriate treatment(s) to provider.
    a. Based on your assessment and evaluation, what recommendations did you make to the provider and why?
    b. Would you change what you recommended and why?
7. Review understanding of learning objective: safely implement all respiratory therapy orders.
    a. Describe the orders implemented and procedures performed on Mr. Fullerton.
    b. If you could change how you performed the ABG or BiPAP initiation, what would it be and why?

c. If you could change how you assisted with the intubation and initiated mechanical ventilation what would it be and why?

d. Discuss the mechanical ventilation protocol. How will the protocol affect Mr. Fullerton's care?

e. Did you agree with the orders you received? Why or why not?

f. How did you prioritize the orders you received?

8. Review understanding of learning objective: effectively communicate with the interprofessional team and patient.

    a. Describe the information you used for SBAR communication with the provider.

    b. Was this communication effective? Why or Why not?

    c. If you could change anything about your SBAR communications, what would it be and why?

    d. How did you communicate the intubation and mechanical ventilation orders with the interprofessional team? What it effective? Why or why not?

    e. Describe the communication techniques you used with Mr. Fullerton.

    f. Were your techniques effective?

    g. Did any barriers occur?

    h. If you could "do over," how would you change your communication with Mr. Fullerton?

9. Review understanding of learning objective: document accurately.

    a. Describe the documentation you performed after assessing, evaluating and implementing the provider orders for Mr. Fullerton.

    b. If you could change anything about your documentation, what would it be and why?

10. Summary/Take away Points

    a. "Today you cared for a patient with increasing respiratory distress that eventually required intubation and mechanical ventilation as a result of renal failure and fluid overload. 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. Questions

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

CREDITS

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