

NEWBORN

Estimated Time: 40 minutes • Debriefing Time: 30 minutes



Scan to Begin



Patient Name: Noah Brooks

SCENARIO OVERVIEW

Noah is a 9-month-old infant who is brought to the ED by his mother with complaints of increased respiratory difficulties. He tested positive for RSV and Bronchiolitis. Noah was admitted to the pediatric floor secondary to low SpO₂ values and dehydration. Students will apply O₂, nasotracheal suction, and administer an albuterol nebulizer (ordered later in the scenario as the patient has taken them at home since he was 2 weeks old.)

LEARNING OBJECTIVES

1. Demonstrate proper infection control
2. Obtain accurate vital signs for a 9-month-old
3. Perform a focused respiratory assessment on a 9-month-old
4. Evaluate pediatric patient data
5. Perform therapeutic procedures on a 9-month-old
6. Effectively communicate with the interprofessional team
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 SURVEY

- Perform pulse oximetry
- Review the medical record utilizing medical record keeping and charting methods consistent with hospital policy and procedures
- Utilize infection control principles
- Evaluate patient data
- Perform a basic cardiovascular assessment
- Perform a respiratory assessment
- Obtain vital signs

RESPIRATORY THERAPEUTICS I

- Perform procedures to assess oxygenation

- Evaluate oxygenation
- Demonstrate the use of medical gas equipment
- Assess the need for medical gas therapy
- Demonstrate medication delivery devices

RESPIRATORY DISEASE

- Analyze signs, symptoms, etiology, pathogenesis and treatment for infectious lung disorders

RESPIRATORY PHARMACOLOGY

- Examine the pharmacodynamics of bronchodilators

RESPIRATORY NEO/PEDS CARE

- Differentiate cardiopulmonary diseases/disorders of the neonatal/pediatric patient
- Evaluate cardiopulmonary status of the neonatal/pediatric patient
- Evaluate radiologic images of neck and chest

RESPIRATORY AIRWAY MANAGEMENT

- Demonstrate skill of secretion removal

CLINICAL PRACTICE

- Apply standard precautions
- Assess vital signs
- Perform pulse oximetry
- Perform chart review
- Perform a pulmonary exam
- Administer oxygen therapy
- Administer aerosolized medication therapy
- Perform nasotracheal suction

SIMULATION LEARNING ENVIRONMENT & SET-UP

ENVIRONMENT

Inside room: Patient in bed

Inside or outside room: Hand sanitizer and/or sink

Outside room: Computer or form(s) for documentation

PATIENT PROFILE

Name: Noah Brooks

Allergies: NKDA

DOB: 9 months ago

Admitting Diagnosis: Acute Bronchiolitis secondary to RSV (J21.0)

Age: 9 months old

Code Status: Full

MR#: 091171

Ethnicity: Caucasian

Gender: Male

Maternal History: PROM at 32 2/7 weeks; GBS negative; G1, P1, A0

Height: 67.3 cm (26.5 in)

Weight: 7.3 kg (16 lbs 2 ounces)

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- In diaper and sleeper, needs normal saline IV
- Nares are full of thick, yellow secretion
- ID band present with QR code

Monitor Settings

- No monitor
- Simulator vitals: HR 152, RR 36, Temp 37.1, Sat = 89 % on RA

Supplies

- General
 - Bulb suction
 - Respiratory Equipment

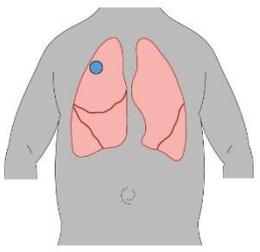
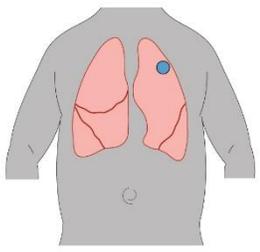
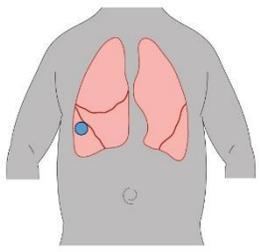
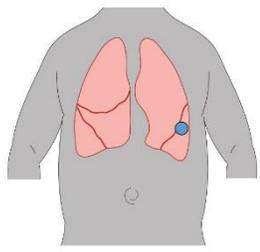
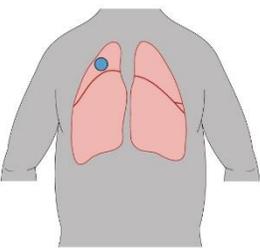
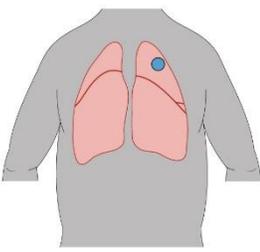
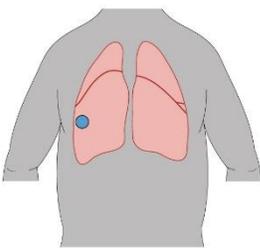
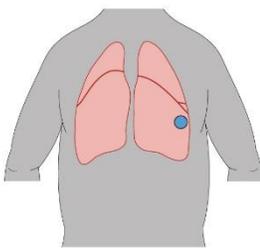
- Pulse oximetry probe, attached to patient
- Pediatric oxygen and suction supplies
- Nebulizer with pediatric mask
- Medications
 - Albuterol – Unit dose

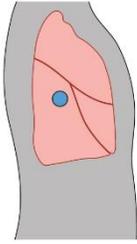
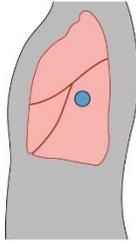
QR CODES

START 	PATIENT 	REPORT 	PATIENT ID 
FACILITATOR 	ALBUTEROL NEB 	NASAL DISCHARGE 	

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	ANTERIOR 3	ANTERIOR 6	ANTERIOR 7
			
			
POSTERIOR 0	POSTERIOR 1	POSTERIOR 4	POSTERIOR 5
			

	
<p>RIGHT AXILLARY 1</p> 	<p>LEFT AXILLARY 1</p> 

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?
 - How will your patient interaction differ with this infant as opposed to an adult?
- View “Patient” video on iPad
 - Possible Facilitator Questions
 - How does your evaluation of this 9-month-old differ from that of an adult?
- 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: All medications in the MAR and all are linked to Dailymed.
- Tabbed iPad Content

ORDERS

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Provider Orders

Date	Time	Order
Today	1 hour	Admit to Pediatric Floor
	ago	Diagnosis: Bronchiolitis secondary to RSV and mild hypoxia
		Vital Signs, Monitoring and Nursing Orders:
		1. Assess vital signs every 2 hours. Call if temp > 103,
		1. respiratory rate < 12 or > 45, heart rate < 90 or > 150
		2. Continuous pulse oximetry monitoring. Call if SpO ₂ < 90
		2. on up to 4 lpm nasal cannula or 40 % O ₂
		3. Daily Weight. Monitor I & O.
		4. Normal diet as tolerated. Call for vomiting or diarrhea.
		Respiratory Therapy Orders:
		1. Provide oxygen via mask, hood, or cannula for SpO ₂ <
		3. 90%, respiratory distress, or cyanosis
		2. Suction nares with bulb as needed to keep clear.
		3. May perform nasotracheal suction as needed when bulb
		4. isn't effective. Call if required > 4 times/day.
		Medications:
		1. Normal Saline IV at 30 ml/hour
		2. May instill a few drops of normal saline into nares as
		5. needed to thin mucus
		3. Acetaminophen oral suspension – 80 mg every 4 hours
		6. as needed for pain or fever. Maximum of 5 doses/day.
		-----Paula Detrician, MD

MAR

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Medication Administration Record

Continuous Infusion

Normal Saline at 30 ml/hour	Started
	In ED
PRN	
Normal Saline (5 ml nebulas) into nares to thin mucus	Last Given
Acetaminophen oral suspension – 80 mg every 4 hours as needed for pain or fever. Maximum of 5 doses/day.	Last Given

DAILY RECORD

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Daily Record

Vitals	Today 1 hour ago				
Pulse	152				
Resp. Rate	32				
BP Systolic					
BP Diastolic					
Temp (°C)	37.4				
O2 Saturation (%)	94				
Applied Oxygen	RA				
Pain					

Daily Weight (kg)	Today 1 hour ago				
	7.3 kg				

VITALS

The iPad shows the “enterable” vitals screen.

PROGRESS NOTES

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Progress Notes

Date/Time	Note
Today/ 3 hours ago	I was called to the ER to administer a nebulizer on a 9 month old infant. Upon my arrival, infant is being held by mom. He appears ill and slightly lethargic. VS per RN flowsheet. Of note, SpO ₂ was 92% on RA when I arrived, but the RN stated she saw it as low as 89%. We will continue to monitor this and apply O ₂ if needed. BBS are diminished with scattered inspiratory and expiratory wheezing throughout. Albuterol nebulizer was administered via mask without incident. No changes in VS or BBS post treatment. I also performed an RSV swab and sent to lab. Patient did cough a few times. Cough was fair and loose. His nose was a little snotty, so I bulb suctioned him for a moderate amount of thick yellow. MD and RN aware of status. Will continue to monitor.----- E. Alemayehu, RRT

LABS-DIAGNOSTICS

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Laboratory Results

Respiratory Syncytial Virus		
	1 1/2 hours ago	Reference Range
Rapid RSV Antigen Test	Positive	Negative

IMAGING

No reports available.

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 & INTERVENTIONS

- Patient Overview
 - When students arrive to the room, Noah is sleeping and his Sats are 85% on RA. (No family present – single mom who had to go make arrangements for the care of her other children. She will be back in a few hours). In addition, his nose is full of snot. Students must suction (bulb vs catheter) as well as select and apply appropriate O₂. Towards the end of this State and while performing these tasks, an RN tells the students that the Provider has just ordered nebs because the patient already takes them at home. He needs one now.
- Expected Student Behaviors
 - Perform appropriate hand hygiene and infection control
 - Introduce themselves and verify the patient (can scan **QR Code: Patient ID**)
 - Obtain vital signs and perform a chest exam on a 9-month-old as well as interpret the findings
 - Students may enter correct vitals in the iPad, but it is not tied to any programming.
 - Inspection – Scan **QR Code: Nasal Discharge**
 - This image shows the nasal discharge present upon student arrival to room.
 - 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 throughout all lung fields:
 - Faint inspiratory crackles with a low-pitched expiratory wheeze
 - Suction the patients nose
 - Students can choose to wipe the nose, bulb suction and/or nasotracheal suction.

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 when **QR Code: Facilitator** is scanned.

STATE 2

NEW ORDERS RECEIVED

- Patient Overview
 - Students will administer the albuterol nebulizer as ordered. Breath sounds are unchanged, but SpO₂ levels have improved secondary to interventions. Students need to communicate with the patient's nurse.
- Expected Student Behaviors
 - Review new provider orders and MAR
 - Administer albuterol nebulizer
 - Scan **QR Code: Albuterol Neb** for a realistic medication label.
 - Must scan **QR Code: Patient ID** prior to scanning the albuterol or students will receive an error message.
 - Reassess the patient to assure oxygenation status improved
 - Discuss interventions with the patient's RN
 - Students should discuss all interventions with the patient's RN – may use SBAR format.
 - Tap on the Level 2 tab to view a plaque that reads, “Have you talked to the patient's nurse?”
 - Document accurately
- Technician Prompts
 - Baby should still cry/whine occasionally.
 - Someone needs to play the role of the RN
 - Students should discuss required applied O₂, suctioning, and the nebulizer.
- Facilitator Questions
 - Discuss RSV and evidenced-based treatment options.
 - Why is it necessary to reassess your patient?
 - Are there any other interventions you would recommend at this time or in the future?

- Describe how SBAR communication improves the interprofessional communication process.

ORDERS

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Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Provider Orders

Date	Time	Order
Today	1 1/2 hours	Admit to Pediatric Floor
	ago	Diagnosis: Bronchiolitis secondary to RSV and mild hypoxia
		Vital Signs, Monitoring and Nursing Orders:
		1. Assess vital signs every 2 hours. Call if temp > 103,
		respiratory rate < 12 or > 45, heart rate < 90 or > 150
		2. Continuous pulse oximetry monitoring. Call if SpO ₂ < 90
		on up to 4 lpm nasal cannula or 40 % O ₂
		3. Daily Weight. Monitor I & O.
		4. Normal diet as tolerated. Call for vomiting or diarrhea.
		Respiratory Therapy Orders:
		1. Provide oxygen via mask, hood, or cannula for SpO ₂ <
		90%, respiratory distress, or cyanosis
		2. Suction nares with bulb as needed to keep clear.
		3. May perform nasotracheal suction as needed when bulb
		isn't effective. Call if required > 4 times/day.
		Medications:
		1. Normal Saline IV at 30 ml/hour
		2. May instill a few drops of normal saline into nares as
		needed to thin mucus
		3. Acetaminophen oral suspension – 80 mg every 4 hours
		as needed for pain or fever. Maximum of 5 doses/day.
		-----Paula Detrician, MD

Today	Now	RT to administer 2.5 mg Albuterol via nebulizer now and as
		needed for Wheezing and SOB. (Patient has used at home since 2
		weeks old.)
		-----Paula Detrician, MD

MAR

Patient Name	DOB	MR#
Noah Brooks	9 months ago	091171
Allergies	Height (cm)	Admission Weight (kg)
NKDA	67.3	7.3

Medication Administration Record

Scheduled		
Albuterol 2.5 mg via nebulizer, once, now	Due Today	Last Given
	now	
Continuous Infusion		
Normal Saline at 30 ml/hour	Started	
	In ED	
PRN		
Normal Saline (5 ml nebules) into nares to thin mucus	Last Given	
Acetaminophen oral suspension – 80 mg every 4 hours as needed for pain or fever. Maximum of 5 doses/day.	Last Given	
Albuterol 2.5 mg via nebulizer, every 4 hours as needed for Wheezing or SOB	Last Given	

LEVEL 2/EXIT

- When the Level 2 tab is tapped, the iPad displays a plaque that reads, “Have you talked to the patient’s nurse?”

- If “No,” the iPad reads, "You must talk with the patient’s nurse before advancing."
- If “Yes,” the iPad reads, “You have completed the learning objectives for this scenario and may exit.”
- The Level 2 tab automatically disappears at this time.
- When the Exit tab is tapped, the iPad displays a plaque that reads, “Scenario objectives have been met. Are you sure you want to exit the game?”
 - If “No,” the iPad returns to the tabbed content.
 - If “Yes,” the iPad advances to the “Thank you for helping me.” Image.

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 Noah?
3. Review understanding of learning objective: Demonstrate proper infection control.
 - a. What infection control issues did you encounter with Noah?
 - b. Discuss RSV at this time.
4. Review understanding of learning objective: Obtain accurate vital signs for a 9-month-old.
 - a. What, if any, challenges did you encounter in obtaining Noah's vitals?
 - b. How do vitals differ in this population?
5. Review understanding of learning objective: Perform a focused respiratory assessment on a 9-month-old.
 - a. What concerns did you find during your physical assessment and evaluation?
 - b. Is this what you would expect in this patient? Why or why not?
6. Review understanding of learning objective: Evaluate pediatric patient data.
 - a. What pieces of data were significant in Noah's chart?
7. Review understanding of learning objective: Perform therapeutic procedures on a 9-month-old.
 - a. Describe how you prioritized the interventions you performed on Noah.
 - b. If you could "do over," how would you change the interventions you performed?
8. Review understanding of learning objective: Effectively communicate with the interprofessional team.
 - a. Were the communication techniques you used with the RN effective? Why or Why not?
 - b. If you could "do over," how would you change your communication with the RN?
9. Review understanding of learning objective: Document accurately.

- a. What is important to document in your assessments and interventions?

10. Summary/Take Away Points

- a. “Today you cared for a 9-month-old patient with bronchiolitis secondary to RSV who needed increased O₂ secondary, nasotracheal suctioning, and an albuterol nebulizer. 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
 - 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.



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

CREDITS

Neonatal Pneumonia Chest X-ray has been adapted from Case 2 by Dr Aneta Kecler-Pietrzyk at

<https://radiopaedia.org/articles/neonatal-pneumonia>

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Retractions, IV and Pulse Oximetry images purchased from shutterstock

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