

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Respiratory distress, apnea and bradycardia-Pediatric Resuscitation 4 months	
Original Scenario Developer(s)	M.Gilbert, MA, BSN, RN; M. Solakian, MSN, RN, CPNP	
Date - original scenario	04/08	
Validation:	05/08	
Revision Dates:	08/18 M. Solakian, MSN, RN, CPNP (changed story)	
Pilot testing:		
QSEN revision:	11/10	
Estimated Scenario Time: 15-20 minutes Debriefing time: 30-40 minutes		
<p><u>Target group:</u> New graduates in Pediatrics, Pediatric staff nurses in acute care or ambulatory clinic</p> <p><u>Core case:</u> The patient is a 4-month-old who was admitted to PICU 2 days ago for respiratory distress, paroxysmal cough and apnea. She received antibiotics, bronchodilators and fluid therapy for pneumonia. She has tapered to room air and is taking oral feedings but has been increasingly fussy today. She was transferred to the Pediatric ward 2 days ago.</p> <p><u>QSEN/IOM Competencies:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Patient Centered Care <input type="checkbox"/> Safety <input type="checkbox"/> Teamwork and Collaboration <p><u>Brief Summary of Case:</u> Simone Phillips is a 4-month old who was admitted to the PICU for 5 days. She was mechanically ventilated for 2 days and received IV fluids, bronchodilators & antibiotic therapy for respiratory distress, R/o sepsis. She made a good recovery and was transferred out of ICU to the acute care unit 2 days ago. She is now on room air and taking feedings well. She has a peripheral IV and discharge is planned in next 24 hours.</p> <p>During the case she begins to deteriorate ranging from fussiness to showing signs of increasing respiratory distress associated with copious amounts of nasal secretions. Respiratory distress rapidly deteriorates into respiratory failure and bradycardia.</p> <p>Learners must recognize respiratory distress/failure, call Emergency/Code Blue team and resuscitate according to PALS guidelines.</p>		

EVIDENCE BASE / REFERENCES (APA Format)
Harless, J., Ramaiah, R., & Bhanaker, S.M. (2014). Pediatric Airway Management, <i>International Journal of Critical Illness and Injury Science</i> , 4(1), 65-70.
American Heart Association (2006) <i>Pediatric Advanced Life Support Course Guide</i> . Wheeling, IL., Worldpoint ECC, Inc.
Hazinski, M.F. (2013). <i>Nursing Care of the Critically Ill Child</i> , St. Louis, MO: Elsevier
Hockenberry, M.J., Loudermilk, & Wilson, D. (2014). <i>Maternal Child Nursing Care</i> (5 th Ed.). Maryland Heights, MO: Mosby Elsevier
Rose, E. & Claudius, I. (2014). Pediatric Critical Care, <i>Emergency Medicine Clinics of North America</i> , 32, 939-954.

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES	
Learning Outcomes	
1. Utilize critical thinking and clinical decision making to interpret data and implement appropriate interventions in a pediatric emergency situation.	
2. Provide patient/family centered care, utilizing safety principles to reduce risk and minimize risk of error.	
3. Communicate with interprofessional team members valuing each role and using standard tools (SBAR) & closed loop communication.	
Specific Learning Objectives	
1. Recognize early signs of respiratory distress/failure in the infant.	
2. Differentiate between respiratory distress and failure in the pediatric patient.	
3. Recognize and implement appropriate early interventions in respiratory distress and failure.	
4. Evaluate/assess effectiveness of interventions for infant with respiratory distress and failure.	
5. Prioritize care of the pediatric patient in respiratory distress and failure.	
6. Recognize and identify potential causes for bradycardia in pediatric patient.	
7. Recognize need and implement effective resuscitation (CPR)	
8. Use SBAR to communicate critical patient information to interprofessional team.	
9. Identify value of and demonstrate closed loop communication with IP team.	
Critical Learner Actions	
1. Demonstrate a systematic patient assessment.	
2. Demonstrate proper techniques to manage a compromised airway.	
3. Demonstrate appropriate interventions to provide adequate oxygenation, ventilation and circulation.	
4. Demonstrate correct placement of cardiac leads and multifunction pads monitor to patient.	
5. Demonstrate accurate communication of critical patient information to interprofessional team	
6. Demonstrate effective CPR.	
7. Demonstrate or delegate support & information to parents in code situation.	

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	Skills/ Attitudes
<input type="checkbox"/> Differentiating signs in respiratory distress and respiratory failure in Pediatric patient	<input type="checkbox"/> Systematic patient assessment
<input type="checkbox"/> Treatment options for Pediatric patient in respiratory distress/failure	<input type="checkbox"/> Airway management techniques
<input type="checkbox"/> Bradycardia algorithm	<input type="checkbox"/> CPR
<input type="checkbox"/> Differential causes for bradycardia	<input type="checkbox"/> SBAR Communication
<input type="checkbox"/> Therapeutic communication with parents in escalating situation	<input type="checkbox"/> Parent observation during code situation

SECTION III: SCENARIO SCRIPT

A. Case summary

A 4-month-old was admitted to the PICU one week ago for respiratory distress and pneumonia. She was mechanically ventilated for 2 days. She transferred to the Pediatric Unit 2 days ago after responding well to azithromycin, bronchodilators and fluid therapy. At the beginning of the scenario the patient is on room air and taking oral feedings but has been increasingly fussy throughout the shift. She develops signs of respiratory distress, then suddenly deteriorates into respiratory failure with an associated bradycardia that doesn't respond to oxygen administration. Throughout the scenario learners must recognize and intervene appropriately to the early signs of respiratory distress. The learner must recognize when to call for assistance, activating the Rapid Response Team (RRT) or the code blue team and resuscitate the patient according to PALS guidelines.

B. Key contextual details

Patient is a recent transfer from the PICU, to an acute care pediatric unit. She is on room air, has a peripheral IV saline lock in her right antecubital. Her vital signs have been stable since transfer and she is currently not attached to a monitor while in mother's arms. Her mother calls the nurse to address her concerns that her baby is having difficulty breathing.

C. Scenario Cast

Patient/ Client	<input type="checkbox"/> High fidelity simulator Sim Baby <input type="checkbox"/> Mid-level simulator <input type="checkbox"/> Standardized patient	
Role	Brief Descriptor (Optional)	Standardized Participant (SP) or Learner (L)
Mother	<i>Mom is calm and concerned that the patient is having difficulty breathing. She does not interfere with care</i> <i>Frame 1: If the learner doesn't recognize a problem with the respiratory rate and pattern mom asks 'what's going on with her breathing?'</i>	SP
Doctor RRT Team Leader Code Team Leader	<i>Frame 2: Orders Bronchodilator (asks learner for recommendation if not provided)</i> <i>Frame 3: Arrives when called. Prompts ABC management if not already performed. Prompts learner to give report (SBAR) if not given. Asks learner 'What do you think is going on?' 'What do you think we should do?' 'What meds do you think we should use. To wrap up asks team what could be going on?'</i>	SP (experienced RN/MD)
Primary Nurse	<i>Assessment, directs interventions (respiratory care/airway management, attaches to monitor, call EMRT/code team/CN, etc.</i>	L
Second Nurse	<i>Performs interventions as directed, uses closed loop communication</i>	L
Respiratory Therapist	<i>Arrives if called. Prompts RT interventions</i>	L

D. Patient/Client Profile

Last name:	Phillips	First name:	Simone
Gender: Female	Age: 4 mos.	Ht: 24" (60.9 cm)	Wt: 6 kg
Spiritual Practice: Christian	Ethnicity: Caucasian		Code Status: Full
			Primary Language spoken:

1. History of Present Illness

Simone Phillips is a 4-month old female admitted to PICU 7 days ago with cough and respiratory distress. Patient presented in respiratory failure with central cyanosis, apnea and poor air movement, required intubation and mechanical ventilation for 2 days. Her condition was managed with IV fluids, bronchodilator nebulized treatments and antibiotic therapy. She was extubated 3 days ago and weaned from 35% oxygen, to 2 liters NC to room air yesterday. She was stable and transferred to the Pediatric Ward 2 days ago. Current status: room air, taking oral feedings and has a PIV in the right antecubital to saline lock. Nebulized bronchodilators are given every 4 hours. Discharge is planned in next 24 hours. Today she has been increasingly fussy and beginning to show signs of respiratory distress.

Immunizations: Hepatitis B at birth. No other vaccines given.

Primary Medical Diagnosis	Respiratory Distress, pneumonia rule out pertussis
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2. Review of Systems

CNS	wnl
Cardiovascular	Sinus tachycardia
Pulmonary	tachypnea, crackles on auscultation, moderate retractions, nasal flare and secretions
Renal/Hepatic	wnl
Gastrointestinal	wnl
Endocrine	wnl
Heme/Coag	wnl
Musculoskeletal	wnl
Integument	wnl
Developmental Hx	Lifts head, smiles hands to mouth
Psychiatric Hx	N/A
Social Hx	Lives with parents, no siblings
Alternative/ Complementary Medicine Hx	N/A

Medication allergies:	None known	Reaction:	
Food/other allergies:	None known	Reaction:	

3. Current medications	Drug	Dose	Route	Frequency
		None		

4. Laboratory, Diagnostic Study Results					
Na: 140 mEq/L	K: 4,5 mEq/L	Cl: 98 mEq/L	HCO3:	BUN:	Cr:
Ca:	Mg:	Phos:	Glucose:	HgA1C:	
Hgb: 11g/dl	Hct: 37%	Plt:	WBC:	ABO Blood Type:	
PT	PTT	INR	Troponin:	BNP:	
ABG-pH:	paO2:	paCO2:	HCO3/BE:	SaO2:	
Nasal Swab: P	GBS:	Herpes:	HIV:	CXR: Pna	EKG

E. Baseline Simulator/Standardized Patient State

1. Initial physical appearance					
Gender: female		Attire: girl baby wear and diaper			
Alterations in appearance (moulage):					
x	ID band present, accurate		ID band present, inaccurate		ID band absent or not applicable
	Allergy band present, accurate		Allergy band inaccurate	x	Allergy band absent or N/A

2. Initial Vital Signs Monitor display in simulation action room:					
	No monitor display	x	Monitor on, but no data displayed		Monitor on, standard display
BP: 78/48	HR: 140	RR: 45	T: 99 F	SpO ² : 95%	
CVP:	PAS:	PAD:	PCWP:	CO:	
AIRWAY: copious nasal, airway secretions			ETCO ² :	FHR:	
Lungs:	Left: crackles	Right: crackles	retractions		
Heart:	Sounds: S1S2 no murmur				
	ECG rhythm:		SR		
	Other:		Pale, normal Cap Refill		
Bowel sounds:	Normoactive			Other:	

3. Initial Intravenous line set up					
x	Saline lock #1	Site:	RAC		IV patent (Y/N)
	IV #1	Site:	CVC	Fluid type:	Initial rate:
	Main				IV patent (Y/N)
	Piggyback				

4. Initial Non-invasive monitors set up					
x	NIBP		ECG First lead:		ECG Second lead:
x	Pulse oximeter		Temp monitor/type		Other:

5. Initial Hemodynamic monitors set up					
	A-line Site:		Catheter/tubing Patency (Y/N)	CVC Site:	PAC Site:

6. Other monitors/devices					
	Foley catheter	Amount:		Appearance of urine:	
	Epidural catheter	X	Infusion pump:	Pump settings:	
	Fetal Heart rate monitor/tocometer			Internal	External

Environment, Equipment, Essential props

1. Scenario setting: (example: patient room, home, ED, lobby)

Pediatric patient room, held at bedside by mother.

2. Equipment, supplies, monitors

(In simulation action room or available in adjacent core storage rooms)

	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit		Incentive spirometer
x	IV Infusion pump		Feeding pump	x	Pressure bag	x	Wall suction
	Nasogastric tube	x	ETT suction catheters	x	Oral suction catheters		Chest tube kit
	Defibrillator	x	Code Cart		12-lead ECG		Chest tube equip
	PCA infusion pump		Epidural pump		Central line Kit		Dressing Δ equip
x	IV fluid Type: NS		IV fluid additives:		Blood products: _____	ABO Type: ____	# of units: __

x	Nasal cannula	x	Face tent	x	Simple Face Mask	x	Non-rebreather mask
x	BVM/Ambu bag	x	Nebulizer tx kit	x	Flowmeters (extra supply)		

4. Documentation and Order Forms

x	Provider orders	x	Med Admin Record		Hx & Physical	x	Lab Results
	Progress Notes		Graphic record		Anes/PACU record		ED Record
	Med Reconciliatn		Transfer orders		Standing orders		ICU flow sheet
x	Nurses' Notes		Dx test reports	x	Code Record		Prenatal record
x	Actual medical record binder			x	Electronic Medical Record		

5. Medications (to be available in sim action room)

#	Medication	Dose	Route	#	Medication	Dosage	Route
X	Nebulized Xopenex	0.31 mg	Neb		Epinephrine (1:10,000)		IV

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES

Initiation of Scenario: Simone Phillips is a 4-month old female admitted to PICU 7 days ago with respiratory distress. Patient presented in respiratory failure with central cyanosis, apnea and poor air movement, required intubation and mechanical ventilation for 2 days. Her condition was managed with IV fluids, bronchodilator nebulized treatments and antibiotic therapy. She was extubated 3 days ago and weaned from 35% oxygen, to 2 liters NC to room air yesterday. She was stable and transferred to the Pediatric Ward 2 days ago. Current status: room air, taking oral feedings and has a PIV in the right antecubital to saline lock. Nebulized bronchodilators are given every 4 hours with naso-tracheal suctioning. Discharge is planned in next 24 hours. Today she has been increasingly fussy and begins to show signs of respiratory distress. Simone is sitting in her mother’s lap and is off the monitor. She has just been breastfed, and spit up a little with burping.

STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline Restless, fussy with ↑respiratory rate, pale.</p> <p>Mother expresses concern because her breathing has changed, is grunting and with moderate subcostal retractions.</p> <p>Nasal: flaring, copious nasal secretions</p> <p>Pulses: central & peripheral present; Capillary refill <2 seconds, skin warm to touch</p>	<p>Operator Display vital signs as learner assesses & attaches patient to oximetry. RR: 45/min, retractions, Lungs: bibasilar crackles with expiratory wheeze SpO²: 95% RA HR: SR @ 140 BP: 76/50 T: 99.0 F.</p> <p>Triggers: If learner completes bulb suction (ineffective) or utilizes wall aspirator to suction nasal airway, change settings: ↓RR 45 – 40, retractions ↑SpO² 95- 96%. HR stays at 140</p>	<p>Learner Actions</p> <ol style="list-style-type: none"> 1. Perform a rapid pediatric assessment 2. Attach pulse oximetry 3. Prepare to administer oxygen 4. Inform mom the baby needs to be suctioned. 5. Bulb suction - if mom has been doing suction, observe her. If found to be ineffective, learner to perform nasal suctioning with wall suction and nasal aspirator. 6. Reassess lungs, and vital signs 7. Call Respiratory Therapist for assessment 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ❑ Increase oxygen requirements ❑ Investigate and identify cause to initiate appropriate interventions ❑ Early intervention improves patient outcomes ❑ Small airways obstruct easily. Small amounts of secretions can increase work of breathing and lead to fatigue if not treated.

	<p>Triggers (con't.) If learner does NOT perform bulb suction ↑ RR from 45 – 65 over 3 min ↓ SpO² 95% to 92% over 3 ↑ HR from 140-165 over 3 If actions are not complete within 10 min., STOP</p>		
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STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>2. ↑respiratory distress, Resp rate 65/min, retractions restless</p>	<p>Operator: Lung sounds: bilateral expiratory wheeze and crackles (↑volume if learner having trouble hearing the wheezes) ↓ SpO² - 92-89% RA HR: 165, CRF<2 seconds, PP BP: 80/48 T: 99 F.</p> <p>Triggers: Learner Actions completed in 5 minutes.</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Administer oxygen 2. Reposition patient 3. Call rapid response 4. Notify physician; deliver SBAR, request order for bronchodilator 5. Administer bronchodilator as ordered 6. Communicate status and treatment plan to mother 7. Reassess after delivering treatments 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ❑ Early interventions improve outcomes, ❑ Reassessment in pediatric patients in respiratory distress is important as they can decompensate quickly. ❑ Difference between upper & lower airway obstruction ❑ Differentiate treatment for lower airway obstruction versus upper airway obstruction ❑ Difference between respiratory distress and failure ❑ Bronchodilator used as patient treated with bronchodilators previously ❑ Pertussis pneumonia effects on bronchial tubes, thick secretions and paroxysmal cough, apnea and bradycardia.

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>3. Patient's condition deteriorates.</p> <p>Respiratory rate 10/min, see saw pattern</p>	<p>Operator: RR: 10/min, see saw pattern ↓ SpO² - 89 – 75%</p> <p>HR & rhythm: 60 SR Central & periph. pulses weak ↓BP from 80/48 to 48/28</p> <p>Triggers: Learners should start to initiate actions within 1 minute.</p> <p>Stop Scenario if learners have not initiated CPR within 3 minutes.</p> <p>Continue in frame until at least x 1 dose of Epinephrine administered</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Delegate activation of EMRT/Code Blue Team & getting Crash cart 2. Open airway 3. Bag mask ventilate 4. Assesses effectiveness of BVM Ventilation 5. Feel for femoral or brachial pulse 6. Place infant on back board & Attach patient to monitor/defib 7. Start compressions 8. Push hard and fast 100/min 9. Ensure full recoil 10. Minimize interruptions in chest compressions 11. 2 rescuers =Ratio 15:2 Method – 2 thumb – encircling hands 12. When Team arrives give report using SBAR 13. Start preparing meds as directed: ***Epinephrine 14. Continue for 5 cycles approx 2 minutes 15. Check rhythm, Resume CPR 16. Administer epinephrine 0.1ml/kg (0.01mg/kg) = 1.0 mls 17. Can repeat every 3 to 5 mins 18. Reassess following interventions 19. identify potential cause (discussion can be initiated by MD) 20. 	<p>Debriefing Points:</p> <ul style="list-style-type: none"> ❑ Bedside nurses role in code blue; recognize, call for help, initiate effective CPR, initiate actions as directed by team leader ❑ Importance of reassessment following intervention especially to identify whether a pulse is present ❑ Possible causes of Bradycardia: ❑ Hypovolemia, Hypoxia or ventilation problems, Hydrogen ion (acidosis), Hypo - /hyperkalemia, Hypoglycemia, hypothermia, Toxins, Tamponade cardiac, Tension pneumothorax, Thrombosis (coronary or pulmonary), Trauma

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE
Scenario End Point:	<ol style="list-style-type: none">1. End scenario in Frame 1 if Learner Actions not completed within 10 minutes2. End scenario in Frame if CPR not started within 3 minutes3. End scenario after Frame 3 and administration of at least 1 dose of epinephrine and discussion with physician
Suggestions to <u>decrease</u> complexity: None	Suggestions to <u>increase</u> complexity: <ol style="list-style-type: none">1. Have patient go into V Fib. Learner will need to recognize no pulse & change in rhythm, continue CPR and follow algorithm for Ventricular fibrillation2. Have MD order external pacing at end of scenario

APPENDIX A: HEALTH CARE PROVIDER ORDERS

<p>Patient Name: Simone Phillips</p> <p>DOB: 11/07/XX</p> <p>Age: 4 months Weight: 6 kg</p> <p>MR#:</p>	<p>Diagnosis: Respiratory Failure with Pneumonia; rule out Pertussis</p>
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† **No Known Allergies**

Date	Time	Pediatric Intensive Care Unit Admission Orders
Day 3		Transfer to Pediatric Ward- Dr. Sweet
		VS: every 4 hours
		Diet: May Breastfeed ad lib on demand; strict I & O
		PIV: Heplock with routine NS flushes
		Nebulizer Tx: Xopenex 0.31 mg every 4 hours, suction as needed.
		Maintain saturations > 92%; oxygen as needed
		Medications: Acetaminophen (10 mg/KG) 60 mg PO/PR Q 4 Hours for T> 38.1C
		Call for T< 36.5 or > 38.1 C; HR< 80 or > 180; RR <10 or >50; BP sys<70 or >140
Signature		Dr. Sweet

APPENDIX B: Digital images of manikin and/or scenario milieu

Insert digital photo here

Insert digital photo here

Insert digital photo here

Insert digital photo here

APPENDIX C: DEBRIEFING GUIDE

General Debriefing Plan			
<input type="checkbox"/> Individual	<input type="checkbox"/> Group	<input type="checkbox"/> With Video	<input type="checkbox"/> Without Video
Debriefing Materials			
<input type="checkbox"/> Debriefing Guide	<input type="checkbox"/> Objectives	<input type="checkbox"/> Debriefing Points	<input type="checkbox"/> QSEN
QSEN Competencies to consider for debriefing scenarios			
<input type="checkbox"/> Patient Centered Care	<input type="checkbox"/> Teamwork/Collaboration	<input type="checkbox"/> Evidence-based Practice	
<input type="checkbox"/> Safety	<input type="checkbox"/> Quality Improvement	<input type="checkbox"/> Informatics	
Sample Questions for Debriefing			
<ol style="list-style-type: none"> 1. How did the experience of caring for this patient feel for you and the team? 2. Did you have the knowledge and skills to meet the learning objectives of the scenario? 3. What GAPS did you identify in your own knowledge base and/or preparation for the simulation experience? 4. What RELEVANT information was missing from the scenario that impacted your performance? How did you attempt to fill in the GAP? 5. How would you handle the scenario differently if you could? 6. In what ways did you check feel the need to check ACCURACY of the data you were given? 7. In what ways did you perform well? 8. What communication strategies did you use to validate ACCURACY of your information or decisions with your team members? 9. What three factors were most SIGNIFICANT that you will transfer to the clinical setting? 10. At what points in the scenario were your nursing actions specifically directed toward PREVENTION of a negative outcome? 11. Discuss actual experiences with diverse patient populations. 12. Discuss roles and responsibilities during a crisis. 13. Discuss how current nursing practice continues to evolve in light of new evidence. 14. Consider potential safety risks and how to avoid them. 15. Discuss the nurses' role in design, implementation, and evaluation of information technologies to support patient care. 			
Notes for future sessions:			