

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Total Knee Replacement_post-operative respiratory depression	
Original Scenario Developer(s):	Marjorie A. Miller, MA, RN, CHSE; Anne B. Lucero, MSN	
Date - original scenario	09/08	
Validation:	09/08	
Revision Dates:	09/10, 09/13, 01/14, 07/18	
Pilot testing:	09/08	
QSEN revision:	01/14 M. Miller, MA, RN, CHSE	
Estimated Scenario Time: 10-15 minutes Debriefing time: 30-40 minutes		
Target group: Prelicensure nursing students, new graduates		
Core case: Post-op respiratory depression in first hour after return from PACU		
QSEN Competencies: Patient Safety Patient/Family Centered Care Teamwork and Collaboration		
Brief Summary of Case: Patient is a 50 year old healthy male following right knee replacement surgery under general anesthesia. He is in stable condition with stable vital signs. Estimated blood loss was 350 mL. Patient received 3 doses of IV Morphine of 2 mg each for pain level of 8/10. Last dose was 10 minutes prior to discharge from PACU. Patient had relief; pain level reported at 2/10.		
Learners are expected to take hand-off report, connect equipment, begin to set up PCA. Patient is responsive to questions and joking with wife and with nurses. After about 5 minutes, patient begins to experience decreased responsiveness and decreasing respiratory rate and depth. Learners are to respond to emergency and family distress, attempt to arouse patient, check orders, place oxygen, call rapid response, prepare Narcan and administer according to orders, and reassess.		
Patient responds to Narcan. Rapid response arrives either during or following situation. SBAR.		

EVIDENCE BASE / REFERENCES (APA Format)
Hoch, C. R. (2016). Nursing Management: Postoperative Care. In S. L. Lewis, S. R. Dirksen, M. M. Heitkemper (Eds.).
Dolansky, M.A., and Moore, S.M. (2013). Quality and safety education for nurses (QSEN): The key is systems thinking. <i>Online Journal of Issues in Nursing</i> , 18(3), Manuscript 1.
2018 National Patient Safety Goals (Hospital) retrieved from: http://www.jointcommission.org/

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES

Learning Outcomes

1. Provide nursing care that promotes safety and minimizes risk of error.
2. Apply clinical decision making skills in interpreting and analyzing data in evolving situations.
3. Prioritize interventions to provide care that is safe and patient-centered.
4. Communicate effectively with members of the inter-professional team.

Specific Learning Objectives

1. Identify findings from a physical assessment indicating risk of complications in a postoperative patient.
2. Demonstrate accurate assessment with focus on respiratory system.
3. Identify and interpret significant assessment findings requiring immediate reporting and/or intervention.
4. Accurately prioritize immediate interventions required for a patient with an unexpected change in status.
5. Evaluate effectiveness of interventions by reassessing critical parameters.
6. Effectively communicate change in status to physician/charge RN, RRT or RT utilizing SBAR tool.
7. Effectively communicate with patient/family throughout simulation to keep informed and relieve anxiety.
8. Apply safety and infection control measures appropriate to situation.

Critical Learner Actions

1. Wash hands, introduce selves and roles, identify patient (with 2 patient identifiers) upon entering room.
2. Take report from PACU nurse.
3. Primary nurse delegates tasks to precepting nurse.
4. Primary nurse performs 60 second environmental assessment.
5. Precepting nurse connects equipment and takes initial vital signs.
6. Primary nurse performs initial post op assessment.
7. Recognize decreasing responsiveness and stimulate patient (“shake and shout”)
8. Apply oxygen per agency protocol.
9. Check orders and administer Narcan according to order.
10. Call for rapid response team; deliver SBAR on arrival.
11. Reassess patient at appropriate intervals.

B. PRE-SCENARIO LEARNER ACTIVITIES

Prerequisite Competencies

Required prior to participating in the scenario

Knowledge	Skills/ Attitudes
<input type="checkbox"/> Post-operative complications	<input type="checkbox"/> Airway management; adjuncts & delivery systems
<input type="checkbox"/> National Patient Safety Goals	<input type="checkbox"/> Focused post-operative assessment
<input type="checkbox"/> Airway assessment and protection	<input type="checkbox"/> 60 second environmental assessment
<input type="checkbox"/> Structured Communication Tool (SBAR)	<input type="checkbox"/> Therapeutic communication in escalating situations
<input type="checkbox"/> Pharmacology of morphine and narcan	<input type="checkbox"/> Requesting assistance in escalating situations
<input type="checkbox"/>	<input type="checkbox"/> Administration of IV medications & reassessment

SECTION III: SCENARIO SCRIPT

A. Case summary

Patient is a 50 year old healthy male following right knee replacement surgery under general anesthesia. He is in stable condition with stable vital signs. Estimated blood loss was 350 mL. Patient received 3 doses of IV Morphine of 2 mg each for pain level of 8/10. Last dose was 10 minutes prior to discharge from PACU. Patient had relief with pain level reported at 2/10.

B. Key contextual details

PACU nurse report is hurried; PACU very busy.

C. Scenario Cast

Patient/ Client	<input type="checkbox"/> High fidelity simulator	
	<input type="checkbox"/> Mid-level simulator	
	<input type="checkbox"/> Task trainer	
	<input type="checkbox"/> Hybrid (Blended simulator)	
	<input type="checkbox"/> Standardized patient	
Role	Brief Descriptor (Optional)	Standardized Participant (SP) or Learner (L)
RN #1	Primary	Learner
RN #2	Preceptee	Learner
PACU Nurse	Gives hurried hand off report	Standardized Participant (SP)
Rapid Response	Responds to call; takes SBAR	Standardized Participant (SP)

D. Patient/Client Profile				
Last name:	Markam		First name:	Robb
Gender: Male	Age: 50	Ht: 5'10"	Wt: 175#	Code Status: Full
Spiritual Practice: Protestant		Ethnicity: Caucasian		Primary Language spoken: English
1. History of present illness				
Multiple past knee injuries playing soccer; cortisone injections, physical therapy, pain medications and arthroscopic surgery failed to relieve problems. "Bone on bone" demonstrated on MRI. Walking & exercise limited due to pain and deformity.				
Primary Medical Diagnosis		Right knee		

2. Review of Systems	
CNS	Alert and oriented x 3. All senses intact. Wears glasses for reading
Cardiovascular	S1, S2; no murmurs or gallops heard; sinus rhythm at 66 bpm
Pulmonary	Lungs clear to A/P; no history of smoking
Renal/Hepatic	No flank tenderness; no hepatic enlargement
Gastrointestinal	ABS x 4
Endocrine	Normal middle aged male; no diabetes or other endocrine abnormalities
Heme/Coag	Within normal limits, no history of excessive bruising
Musculoskeletal	Moves all extremities in full range of motion except right knee
Integument	Clear and intact; multiple scars right knee
Developmental Hx	Lives with wife; 2 sons in high school
Psychiatric Hx	None
Social Hx	No recreational drugs; drinks beer on weekends

Medication allergies:	None reported	Reaction:	
Food Allergies:	None reported	Reaction:	

3. Current medications	Drug	Dose	Route	Frequency
	Celebrex	200 mg	PO	Twice per day
	Acetaminophen	650 mg	PO	Morning and evening for pain

4. Laboratory, Diagnostic Study Results					
Na: 140	K: 4.0	Cl: 101	CO ₂ : 24	BUN: 20	Cr: 0.60
Ca: 9.0	Mg:	Phos:	Glucose: 75	HgA1C:	
Hgb: 15.0	Hct: 45	WBC: 8.0	MCV: 90	MCH: 30	MCHC: 35
PT:	PTT	INR:	Troponin:	BNP:	
LDL:	HDL:	Chol:	Albumin:	Lactate:	
ABG-pH:	paO ₂ :	paCO ₂ :	HCO ₃ /BE:	SaO ₂ :	
AST:	ALT:	Herpes:	HIV:	Total Proteins:	
CXR:		ECG:			
CT:		MRI:			
Other:					

E. Baseline Simulator/Standardized Patient State

(This may vary from the baseline data provided to learners)

1. Initial physical appearance					
Gender: male		Attire: hospital gown			
Alterations in appearance (moulage): blonde/grey wig Wrap right knee with bulky dressings with drain attached to Hemovac with 50 cc dark red blood in chamber. Cover dressings and drain with Ace Wrap.					
x	ID band present, accurate information		ID band present, inaccurate information		ID band absent or not applicable
	Allergy band present, accurate information		Allergy band present, inaccurate information	x	Allergy band absent or not applicable

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: 120/70	HR: 80	RR: 18	T: 98.6	SpO ₂ : 98%
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO ₂ :	FHR:		
Lungs: Sounds/mechanics	Left: clear		Right: clear	
Heart:	Sounds:	S1, S2		
	ECG rhythm:	sinus		
	Other:			
Bowel sounds:	Active x 4		Other:	

3. Initial Intravenous line set up						
x	Saline lock #1	Site:	Rt. arm			IV patent (Y/N)
x	IV #1	Site:	Rt. arm	Fluid type: D5 ½ NS w/20 mEq KCl added	Initial rate: 150 mL/hr	IV patent (Y/N)
	Main					
	Piggyback					
	IV #2	Site:		Fluid type:	Initial rate:	IV patent (Y/N)
	Main					
	Piggyback					
4. Initial Non-invasive monitors set up						
x	NIBP		x	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)	CVP Site:	PAC Site:
6. Other monitors/devices						
x	Foley catheter			Amount: 200 mL		Appearance of urine: clear yellow
	Epidural catheter		x	Infusion pump: Alaris w 3 mod	Pump settings: Primary Piggyback (2 nd channel)	150 mL/hr
	Fetal Heart rate monitor/tocometer				Internal	External
Environment, Equipment, Essential props						
Recommend standardized set ups for each commonly simulated environment						
1. Scenario setting: (example: patient room, home, ED, lobby)						
Patient room						

2. Equipment, supplies, monitors						
(In simulation action room or available in adjacent core storage rooms)						
x	Bedpan/ Urinal		x	Foley catheter kit	Straight cath. kit	x Incentive spirometer
x	IV Infusion pump			Feeding pump	Pressure bag	x Wall suction
	Nasogastric tube			ETT suction catheters	x Oral suction catheters	Chest tube insertion kit
	Defibrillator			Code Cart	12-lead ECG	Chest tube equip
x	PCA infusion pump			Epidural infusion pump	Central line Insertion Kit	x Dressing Δ equipment
x	IV fluid Type:	D5 ½ NS w/20 mEq KCl		IV fluid additives:		Blood product ABO Type: # of units:

3. Respiratory therapy equipment/devices							
x	Nasal cannula		Face tent	x	Simple Face Mask	x	Non re-breather mask
x	BVM/Ambu bag		Nebulizer tx kit		Flowmeters (extra supply)		

4. Documentation and Order Forms							
x	Health Care Provider orders	x	Med Admin Record	x	H & P	x	Lab Results
x	Progress Notes	x	Graphic record		Anesthesia/PACU record		ED Record
x	Medication reconciliation		Transfer orders		Standing (protocol) orders		ICU flow sheet
x	Nurses' Notes		Dx test reports		Code Record		Prenatal record
x	Actual medical record binder, constructed per institutional guidelines				Other Describe:		

5. Medications (to be available in sim action room)								
#	Medication	Dosage	Route		#	Medication	Dosage	Route
	PCA module - Morphine		IV					
	Narcan	0.4 mg/1 mL	IV					
	Zofran							

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
<p>Initiation of Scenario : 50 year old male patient returned from PACU following right total knee replacement in stable condition. PACU nurse giving bedside report @ 4:30 pm.</p> <p>Report: 50 year old patient, Robb Markam, of Dr. Brandon Bone. He had a total right knee replacement this afternoon without complications and a blood loss of approximately 350 mL. He has no significant medical history except for multiple injuries and treatment of sports injuries involving the right knee.</p> <p>His vital signs are stable: T. 97, P. 68, RR. 18, BP 120/70, EKG: NSR, O2 sats: 98%</p> <p>He received 3 doses of Morphine 2 mg IV for complaints of pain; the last one was 10 minutes ago for pain rated “8”/10 which was effective, reducing his pain level to “2”/10.</p>			
STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline</p> <p>Patient in low fowler’s position wearing hospital gown.</p> <p>Knee dressing dry and intact with Hemovac drainage – approximately 50 mL dark red drainage.</p> <p>Patient groggy & sleepy, but responds to nurses. Joking with nurses about pain number – says “you’re asking for my phone number?” Reports pain as “2”/10.</p>	<p>Operator</p> <p>Monitor, BP cuff and O2 sat monitor available but not yet attached to patient. Keep IDLE until learners attach equipment.</p> <p>T - 97°F. HR – 88 RR – 18 BP – 120/70 O2 sats – 98% EKG – NSR</p> <p>During assessment, begin to slowly drop RR & O2 sats</p> <p>Triggers: Actions completed within 5 minutes</p>	<p>Learner Actions</p> <ol style="list-style-type: none"> 1. PACU nurse gives report (above) to primary and precepting nurse and leaves room. 2. Nurses introduce selves, role and identify patient. 3. Primary nurse delegates tasks to precepting nurse. 4. Primary nurse immediately begin focused assessment 5. Precepting nurse connects equipment; takes and reports vital signs. 	<p>Debriefing Points:</p> <p>National Patient Safety Goals re. hand hygiene, patient identification.</p> <p>Teamwork and collaboration – clear assignment of roles</p> <p>60 second environmental assessment.</p>

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>2.</p> <p>Patient becomes less responsive to nurses questions as respiratory status decreases</p>	<p>Operator:</p> <p>↓ RR rate to 16 - 14</p> <p>↓ O2 sats to 95% - 93%</p> <p>Continue to trend above VS down slowly</p> <p>Make respirations more shallow as RR decreases.</p> <p>Triggers: Actions completed within 2 – 3 minutes.</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Primary nurse turns attention to IV & PCA set up 2. Precepting nurse alerts primary nurse to slight ↓ in responsiveness. 3. Primary nurse validates assessment. 4. Nurses notice ↓ in Respiratory status and ↑ O2 liter flow. 	<p>Debriefing Points:</p> <ol style="list-style-type: none"> 1. Communication of slight change in status with patient family member in room. 2. O2 delivery systems and flow rates 3. Possible causes for decreasing respiratory status.
STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>3.</p> <p>Patient unresponsive and hypoventilating.</p>	<p>Operator:</p> <p>RR – 10 – 8</p> <p>O2 SATS – 88-90 %</p> <p>BP 110/70</p> <p>HR – 60</p> <p>Triggers: Performs action within 5 minutes</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Nurses notice change in status. 2. Communicates states with team 3. Changes NC to non-rebreather and increases flow rate 4. Checks orders for Narcan 5. Calls for Rapid Response Team 	<p>Debriefing Points:</p> <ol style="list-style-type: none"> 1. Strategies for keeping calm in escalating situations 2. Strategies for keeping family member appraised of situation without undue alarm. 3. Strategies for increasing respiratory status.

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
4. Patient remains unresponsive.	Operator: ↓ RR to 7 ↓ O2 sats to 88%	Learner Actions: 1. Primary nurse administers Narcan per order titrating dose to response	Debriefing Points 1. Potential complications of Narcan administration.
<i>1 minute after Narcan given</i>			
Patient slowly regains responsiveness and returns to normal state. Asks what happened. Reports pain level at "3"/10	↑RR to 12 ↑O2 sats to 94% HR – 68 BP – 120/70	2. Communicates with SBAR to RRT as they arrive 3. Reassesses patient with nursing team.	2. Comparison of Morphine with Narcan r/t to onset, peak and duration of medication 3. Communication with patient and family following incident to increase confidence and allay anxiety. 4. Implications of "too much morphine" to patient/family willingness for pain control.
Scenario End Point: Scenario ends with patient response after 0.2 mL Narcan			
Suggestions to <u>decrease</u> complexity: Patient responds to "shake and shout" or RRT administers Narcan Suggestions to <u>increase</u> complexity: <ul style="list-style-type: none"> • Patient drops respiratory status and responsiveness again and requires 2nd dose of Narcan • Family member becomes hysterical and requires further intervention • IV malfunctions and alarms, diverting nurses attention 			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

<p>Patient Name: Robb Markam</p> <p>DOB: 12/24/1963</p> <p>Age: 50</p> <p>MR#: 345678</p>	<p>Diagnosis: right total knee replacement</p>
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No Known Allergies
 Allergies & Sensitivities

Date	Time	HEALTH CARE PROVIDER ORDERS AND SIGNATURE
		Admit to monitored Sim unit with Dx: right total knee replacement
		Clear liquid diet as tolerated tonight; regular diet as tolerated beginning in a.m.
		Bedrest. Up with PT in a.m.
		VS every 4 hours
		IV: D5 ½ NS w/20 mEq KCl at 150 mL/hr tonight; ↓ rate to 125 mL/hr in a.m.
		PCA Morphine
		Narcan (naloxone) 0.2 mg IV push for respiratory rate 8 or below and no response to “shake and shout”. Notify physician.
		Repeat Narcan (naloxone) 0.2 mg every 1-2 minutes until respiratory rate is greater than 8 and patient is responding to verbal stimuli.
		Foley Catheter to gravity drainage
		O2 to keep sats at 92% or above
		Incentive spirometer 10 x/every hour while awake
		<i>Brandon Bone, MD</i>
Signature		

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:			