SECTION I: SCENARIO OVERVIEW

Scenario Title:	Post-Partum Hemorrhage
Original Scenario Developer(s):	Heidi Torkelsen, RN, BSN, CCRN, heiditorkelsenrn@yahoo.com; Connie Lopez, RNC, MSN, CNS connie.m.lopez@kp.org; Susan Cantrell, MSN, RNC scantrell@samuelmerritt.edu
Date - original scenario	3/21/2007
Validation:	4/01/2010
Revision Dates:	10/06/2012 – Nory Sargeant, CPN, BSN, MBA Jodee Noll, BSN, Adele Lauderbach, BSN, Lacy Chandler, ADN Marjorie A. Miller, MA, RN, CHSE
Pilot testing:	4/01/2010
QSEN revision:	10/06/2012

Estimated Scenario Time: 15- 20 minutes **Debriefing time:** 30-40 minutes

Target group: Perinatal nurses, FNP students, Perinatal interprofessional teams, pre-licensure RN students in Perinatal rotation

Core case: 33 year old 30 minutes post delivery of 4.2 gram infant with post partum hemorrhage

QSEN Competencies:

- ❑ Teamwork and Collaboration
- ❑ Patient Safety
- ❑ Patient Centered Care
- ❑ Evidence based practice

Brief Summary of Case:

G3 P3 33 year old woman 30 minutes post-delivery of 4.2 kg infant. Unit is very busy with multiple discharges to make room for newly delivered patients. Maternal history of previous PPH with 2nd delivery and borderline H/H prenatally. Mother is exhausted after pushing and delivery of large infant. Large amount of blood noted on chux, fundus is boggy. Learners are expected to recognize the problem, call for help, increase the IV rate and follow through with PPH Protocol, identifying stage and managing case appropriately. Father of baby is sleeping on a cot next to patient's bed and is essentially "in the way" of nurses trying to provide care for patient.

EVIDENCE BASE / REFERENCES (APA Format)

Cunningham, F.G., Leveno, K., Bloom, S., Hauth, J., Rouse, D, Spong, C.(2010) *Williams Obstetrics 23rd Edition.* United States: McGraw-Hill.

Mattson, S., & Smith, J.E. (Eds.) (2010). AWHOON *Core Curriculum for Maternal Newborn Nursing*. 4th Edition. St. Louis: Elsevier & Saunders.

Simpson, K.R. & Creehan, P. (2012). *AWHONN Perinatal Nursing 3rd Edition.* Philadelphia: Lippincott Williams & Wilkins.

California Maternal Quality Comprehensive (CMQCC) Hemorrhage Task Force (2009) www.CMQCC.org

Toolkit for OB Hemorrhage Drill. Sutter Maternity & Surgery Center-Perinatal Department. May 2012.

Nursing Management in Patient with Post-Partum Hemorrhage (2011). *Sutter Maternity & Surgery Center: Perinatal Services Manual*

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES
Learning Outcomes
1. Demonstrate focused post-partum assessment
2. Apply clinical decision making skills in analyzing complex patient data and assessment findings.
3. Prioritize and manage care according to accurate analysis of data and principles of safety
4. Demonstrate principles of patient-centered care, teamwork and collaboration, evidence based practice
Specific Learning Objectives
1. Assess risk of patient for post-partum hemorrhage.
2. Anticipate and provide for pain management needs (for fundal massage)
3. Accurately estimate and stage patient according to blood loss
4. Anticipate uterotonic medications for treatment of hemorrhage (administer as ordered)
5. Apply pulse oximeter and administer oxygen according to protocol.
6. Draw Lab work (blood for hemoglobin and hematocrit (compare to admission labs), type and crossmatch, coag studies (fibrinogen, prothrombin time, partial thromboplastin time, fibrin split products, and fibrin degradation products), blood chemistry)
7. Insert Foley catheter to empty bladder and allow accurate measurement of output
8. Continuously monitor for hypotension, continuous bleeding, tachycardia or shock
9. Provide emotional support and explanations for the woman and her family
10. Recognize need and initiate staff assistance early
Critical Learner Actions
1. Position patient flat; assess fundal tone & amount of lochia.
2. Fundal massage for uterine atony.
3. Call for help early. Accurately communicate change in patient status (Human Factors / SBAR) Check vital signs every five minutes (hypotension, tachycardia, tachypnea)
4. Initiate IV fluid resuscitation (Fluid bolus, Oxytocin, , second-largest bore IV access, blood)
5. Administer uterotonic medications as ordered. (methergine, hemabate & misoprostol - cytotec)
6. Utilize Team STEPPS in delegation, call out's, closed loop communication and situation awareness.

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	Skills/ Attitudes
❑ Pathophysiology, risk factors, clinical manifestations, interventions and expected outcomes for post-partum hemorrhage	❑ Assessment of fundal tone, lochia and proper techniques in fundal massage ❑ Recognition of hypovolemia and initial interventions
❑ CMOCC Obstetric Hemorrhage Care Summary ❑ Rationale for prioritization/ PPH interventions	❑ IV assessment and initiation of IV to support rapid fluid resuscitation and blood product administration
❑ Pharmacology and administration of uterotonic medications	❑ Administration of uterotonic medications
❑ Effective communication for reporting change in condition to patient/family	❑ Oxygen saturation assessment and delivery systems ❑ EKG and vital signs monitoring including pain
❑ Effective communication for reporting change in condition to interprofessional team	❑ Foley catheter insertion and output monitoring

SECTION III: SCENARIO SCRIPT

A. Case summary
33-year-old G3 P3 (now) woman on post-partum unit 30 minutes after delivering a 4.2kg baby. Large amount of blood and clots noted on chux, boggy uterus. RN to: - Provide fundal massage - Increase IV fluid rate (w/oxytocin) - Position patient to increase venous return - Call for help (update team re: pt. status) using standardized communication tool (SBAR) - Assign roles to assisting staff while maintaining Primary Nurse role - Uses Team STEPPS communication skills (call-outs, closed loop communication, situation awareness) - Estimate blood loss and initiate CMQCC Hemorrhage Protocol based on stage assessed - Anticipate and provide second IV large bore IV access - Anticipate and administer drugs (oxytocin, methergine, Hemabate, misoprostol - cytotec) - Draw lab work (Stat CBC, T&C for 2 units) - Apply pulse ox and O_2 (ECG leads & monitor prn) - Communicate effectively with patient/family regarding change in condition and plan of care

B. Key contextual details
Setting: Patient transferred to post-partum unit 30 minutes after delivery . **Situation:** Maternal exhaustion after extensive pushing and delivering a large infant only one hour ago. Patient is also very tired after caring for children at home. Father of baby is sleeping on a fold-out bed next to patient's bed in the post-partum room. He is "in the way" for providing care to the patient. **Systems Issues**: Patient-nurse ratio (four couplets to one nurse) Short-staffed in L&D and post-partum

C. Scenario Cast		
Patient/Client	❑ High Fidelity Simulator – Sim Mom	❑ Mid-Fidelity simulator
	❑ Task Trainer	❑ Hybrid (blended simulator)
	❑ Standardized Patient	
Role	Brief Descriptor (Optional)	Learner or Confederate (Actor)
RN 1 – Primary Nurse		Learner
RN 2 – Assisting Nurse		Learner
Provider	Attending or resident	Learner or Actor depending on scenario
Partner, father of baby	Asleep at first, but becomes very anxious, (hates sight of blood)	Actor

D. Patient/Client Profile				
Last name:	O'Leary		First name:	Shannon
Gender: Fe	Age: 33	Ht: 5'5"	Wt: 170 lbs. (77kg)	Code Status: Full
Spiritual Practice: Catholic		Ethnicity: Irish American		Primary Language spoken: English
1. Prenatal and past history				
3rd pregnancy. Delivered vaginally 30 minutes ago. Large baby (4.4 kg). Estimated blood loss: 350 ml. during delivery. Minor 1st ° perineal laceration, repaired in delivery room. Plans to breast feed infant. Patient is exhausted after pushing for two hours (and from "taking care of 2 children at home"). History of 1st stage PPH with 2nd delivery, controlled with uterotonic medications.				
Primary Medical Diagnosis	Normal Spontaneous Vaginal Delivery with minor 1st ° perineal laceration			

2. Review of Systems	
CNS	Within normal limits
Cardiovascular	Within normal limits
Pulmonary	Within normal limits
Renal/Hepatic	Within normal limits
Gastrointestinal	Within normal limits
Endocrine	Within normal limits
Heme/Coag	EBL: 350 mL with vaginal delivery and laceration. Borderline pre-natal H/H
Musculoskeletal	Within normal limits
Integument	First degree laceration of perineum (repaired)
Developmental Hx	Within normal limits
Psychiatric Hx	Within normal limits
Social Hx	Married. c/o exhaustion d/t caring for 2 children and pregnancy
Alternative/ Complementary Medicine Hx	None reported

Medication allergies:	NKDA	Reaction:	NA
Food/other allergies:	NKA	Reaction:	NA

3. Current medications	**Drug**	**Dose**	**Route**	**Frequency**
	Colace	100 mg	PO	Twice a day
	Iron (ferrous sulfate)	325 mg	PO	Daily
	Ibuprofen	600 mg	PO	PRN q6h (mild pain)
	Norco Hydrocodone 5mg/Acetaminophen 325 mg	i-ii tabs	PO	q4h PRN (severe pain)
	Lactated Ringers w/20 Units Pitocin	1000 mL	IV	@ 125 mL/hr

4. Laboratory, Diagnostic Study Results					
Na:	K:	Cl:	HCO3:	BUN:	Cr:
Ca:	Mg:	Phos:	Glucose:	HgA1C:	
Hgb: 10.5 gm	Hct: 32	Plt: 150,000	WBC: 10,000	ABO Blood Type: O+	
PT	PTT	INR	Troponin:	BNP:	
ABG-pH:	paO2:	paCO2:	HCO3/BE:	SaO2:	
VDRL: Non react	GBS: neg	Herpes: no hx	HIV: neg		
CXR:		ECG:			

E. Baseline Simulator/Standardized Patient State

1. Initial physical appearance

Gender: Female	Attire: hospital gown

Alterations in appearance (moulage):
Skin: Pale, cold and clammy: Pack face, arms and upper chest in ice prior to simulation. Rub thin layer of Vaseline over face, arms and chest; spray with glycerin water solution just prior to learners entering room.
Hair: red wig with hair damp and in disarray. Infant in bassinette – not a factor in simulation.
Boggy Uterus: Prepare 750 mL solution in 1000 mL IV bag colored to mimic blood . Attach secondary IV tubing. Place bag under skin to mimic a boggy uterus. As fundus is massaged, blood fake blood will trickle out in a steady stream. Secure bag in position with ace wrap, belly band or something else suitable.
Hemorrhage: Place golf ball size clots (black cherry jello) in vaginal vault, along with 100 mL or so fake blood. Place chux under patient with 300 mL fake blood with some clots under patient. Have another chux ready with 250 mL fake blood and clots. When first chux is removed to be weighed and clean chux under patient, place reserved chux under patient while nurse is weighing chux.
Urine: Place 250 mL clear amber fluid in urine reservoir
Set up manikin with air and urine reservoirs full. Will not be able to have patient maintain a boggy uterus and continue to bleed. Rationale for bypassing with IV solution instead of manikin function.

x	ID band present, accurate Mother, father, 2 on baby		ID band present, inaccurate		ID band absent or not applicable
	Allergy band present, accurate		Allergy band inaccurate		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

IDLE until BP cuff placed and monitor turned on

BP: 90/60	HR: 112	RR: 24	T:98.6°F.	SpO²: 96%
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO²:	FHR:		
Lungs: Sounds/mechanics	Left: clear		Right: clear	
Heart:	Sounds:	S1, S2		
	ECG rhythm:	Sinus tachycardia		
	Other:			
Bowel sounds:			Other:	

ALL DATA IN THIS SCENARIO IS FICTICIOUS

3. Initial Intravenous line set up						
	Saline lock #1	Site:				IV patent (Y/N)
x	**IV #1**	Site: Rt. Forearm 18 gauge	Fluid type: Ringers Lactate w/ 20 Units Pitocin	Initial rate: 125 mL/hr		IV patent (Y/N) Yes
x	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	x	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				
	Foley catheter w/urometer	Amount: 250 mL *When Foley placed*	Appearance of urine: amber	
	Epidural catheter	Infusion pump:	Pump settings:	
	Fetal Heart rate monitor/tocometer		Internal	External

Environment, Equipment, Essential props

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

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		Pressure bag		Wall suction
	Nasogastric tube		ETT suction catheters		Oral suction catheters		Chest tube insertion kit
	Defibrillator		Code Cart		12-lead ECG		Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit		Dressing Δ equipment
x	IV fluid Type:	1000 mL LR	IV fluid additives: 20 U Pitocin		Blood product ABO Type: A+ # of units: 4 Units PRC's with blood tubing		

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	x	Anesthesia/PACU record		ED Record
x	Medication reconciliation		Transfer orders	x	Standing (protocol) orders		ICU flow sheet
x	Nurses' Notes	x	Dx test reports		Code Record	x	Prenatal record
x	Actual medical record binder, constructed per institutional guidelines				Other Describe:		

5. Medications (to be available in sim action room) Hemorrhage Cart								
#	Medication	Dosage	Route		#	Medication	Dosage	Route
2	Methergine	0.2 mg/mL	IM		10	Misoprostol	100/200 mcg	R
1	Hemabate	250 mcg/m:	IM		2	Ibuprofen	600 mg	PO
2L	LR w/ 20 U Pit	125 mL/hr	IV		2	Norco Hydrocodone/Acetaminophen	5/325	PO
5	Pitocin	10 U/mL	IM					

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
Initiation of Scenario : Shannon O'Leary is nursing in her post-partum room. Off going nurse is giving bedside report to oncoming nurse. Shannon delivered about 30 minutes ago, a 4.2 kg male infant who is in a crib in her room. She had a first-degree perineal laceration repair. She has a patent IV in her right forearm of LR w/20 units pitocin/1000 mL running at 125 m/hr. Her EBL is 350 mLs. She has not eaten. She states the patient reported a pain level of 2/10. VS have been stable; BP 100/60. P: 84, RR: 20, O^2sats: 97%, T: 98.6°F (37°C). (baseline BP = 110/70) Her husband "Sean" is in the chair in her room with cell phone talking excitedly and taking pictures. The other children are with their grandmother and expected to visit at any time.			
STATE / PATIENT STATUS	**DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
1. Baseline Patient nursing baby in bed, covered up to chest with bed linens (chux covered in fake blood and clots under patient, but not visible unless covers are pulled back). Patient responds to RN, but states, "I'm not feeling very well.I am so tired. Can you take the baby please?" "I feel weak and exhausted." "I just want to sleep like Sean." "I felt a gush a little bit ago."	**Operator** IDLE until learners perform task of putting on BP cuff or taking pulse/resp. **BP** 90/60 **HR** 112 **RR** 24 **O^2 sats** 96% **T** 98.6° F. **Triggers:** **Learner Actions** complete within 3-5 minutes **Cue** Patient states 'why am I so wet down there?" or "what's happening to me?"	**Learner Actions** 1. Identifies self and role 2. Identifies patient 3. Recognizes pale, cold and clammy skin 4. Checks vital signs 5. Positions patient flat in bed 6. Assesses fundus and lochia 7. Massages fundus for 15 seconds minimum 8. Calls for immediate help 9. Increases IV fluid rate 10. Administers O^2 per mask @ 10L/min. 11. Requests warm blankets	**Debriefing Points:** Hemorrhage Protocol Assessment of stage @ Stage 1 1. BP 90/60 = > 15% ↓ baseline 110/70 2. HR ≥ 110 3. Estimated blood loss – 350 mL in delivery with vaginal laceration 4. Visualization clearly larger than 400 mL total. 5. Do not delay calling for help as stage 1 is very short. 6. Signs/symptoms of PPH

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
2. Husband awakens with all the noise. Asks anxiously " Why is my wife so sweaty?" Patient anxiously asks "What's wrong? I feel so weak and dizzy." Husband notices all the blood and becomes dizzy. Says "Oh my god, look at all that blood!"	**Operator:** **BP** 90/50 **HR** 120 **RR** 26 **O^2 sats** 95% Continuous blood leaking with fundal massage – Weighs 600 mL **Triggers:** **Learner Actions** complete within 2-3 minutes **Cues:** If delayed, husband loudly says…" somebody call the doctor. My wife is getting worse."	**Learner Actions:** 1. Primary Nurse delegates vitals to first person responding, including O^2 sats 2. PN continues fundal massage 3. PN delivers SBAR to charge nurse 4. CN calls for any OB provider on unit, primary provider & anesthesiologist 5. Primary nurse delegates weighing of chux to after vitals taken. (600 mL) 6. Vitals and EBL q 5-10 min. 7. Primary nurse maintains ↑ IV fluid rate (with Pitocin) 8. Administers Methergine 0.2 mg IM 9. Insert Foley cath with urometer and measure output. (250 mL) 10. Order labs – type and cross for 2 Units PRC's (or more) 11. Assign one nurse (nursing supervisor) to husband to him calm and keep informed 12. Continue talking with patient to calm and keep informed	**Debriefing Points:** 1. Hemorrhage Protocol continues 2. Communication with blood bank 3. Team STEPPS teamwork and collaboration 4. Team STEPPS situation awareness 5. Closed loop communication 6. Strategies for keeping calm in intense situations 7. Strategies for keeping patient/family calm in intense situations.

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
3. Patient complains about fundal massage and complains of shivering, but is becoming less responsive	**Operator:** **BP** 86/50 **HR** 128 **RR** 28 **O^2 sats** 93% Continuous blood leaking with fundal massage (up to 1500 mL total **Triggers:** Learner Actions completed within 5 minutes. Provider arrives. Receives SBAR communication from primary nurse.	**Learner Actions:** 1. Proceeds to Stage 2 PPH Protocol 2. Initiates 2nd IV with large bore needle and blood tubing 3. Draws labs per order 4. Administers Hemabate 250 mcg IM 5. Administers Misoprostol 800-1000 mcg per rectum 6. Considers social worker for family support. 7. Provider may perform bimanual massage in room	**Debriefing Points:** 1. criteria for Stage 2 PPH protocol 2. signs of decreasing hemodynamic status 3. SBAR communication with provider 4. Communication with blood bank for additional units of PRC's; begin thawing FFP's
Scenario End Point: Provider arrives. SBAR received. Physician communicates with patient and husband alerting to status and plan of care. Consents signed (or verbal consent given if too emergent) Patient transfer to OR.			
Suggestions to <u>decrease</u> complexity: Patient responds to 2nd stage uterotonic medications with increased fundal tone, decreased bleeding and return of stable vital signs. Suggestions to <u>increase</u> complexity: Progresses to Stage 3 PPH. Transfer to OR for bimanual exam, intrauterine balloon, hysterectomy.			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: **DOB:** **Age:** **MR#:**	**Diagnosis:**

† No Known Allergies
† Allergies & Sensitivities

Date	Time	**HEALTH CARE PROVIDER ORDERS AND SIGNATURE**
Signature		

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

Initial scene

Under blankets prior to simulation

Photos of Sim Mom set up

Photos of Sim Mom set up