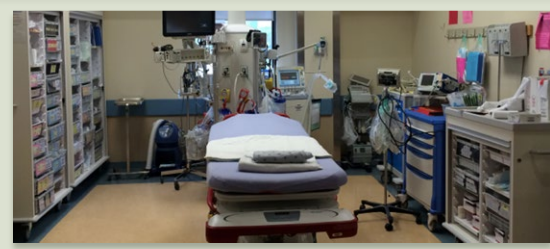


# Postpartum Hemorrhage Case



## Section I: Scenario Demographics

Scenario Title:	Postpartum Hemorrhage		
Date of Development:	Sept 2019		
Target Learning Group:	<input type="checkbox"/> Juniors (PGY 1 - 2)	<input type="checkbox"/> Seniors (PGY $\geq$ 3)	<input checked="" type="checkbox"/> All Groups

## Section II: Scenario Developers

Scenario Developer(s):	Kristi Kyle – updated by Drew Delany
Peer Review:	Jeanne Macleod February, 2022

## Section III: Curriculum Integration

Learning Goals & Objectives	
Educational Goal:	To help participants develop an approach and management of a patient with postpartum hemorrhage
CRM Objectives:	1) Prioritize interventions in the management of postpartum hemorrhage 2) Communicate priorities effectively with team members.
Medical Objectives:	1) Stabilize postpartum patient 2) Demonstrate approach to managing postpartum hemorrhage

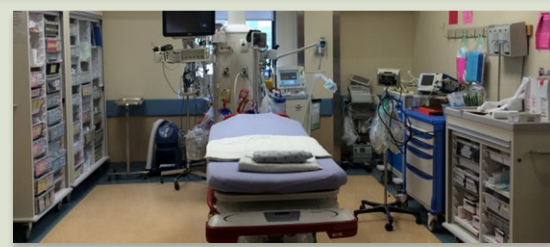
### Case Summary: Brief Summary of Case Progression and Major Events

A 25 year old who is 3 days postpartum. She presents with vaginal bleeding and feeling faint. She is drowsy, pale and tachycardic. The nurses are worried about the heavy vaginal bleeding. Learners are expected to stabilize the patient, start medical treatment and eventually require Bakri insertion. The case ends after the patient has all appropriate medications and insertion of the Bakri balloon.

### References



# Postpartum Hemorrhage Case

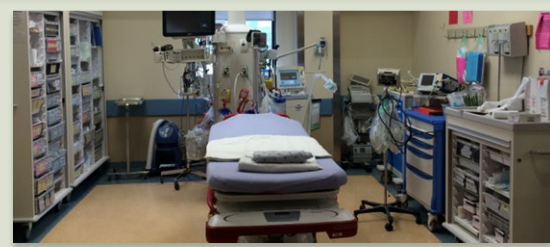


## Section IV: Scenario Script

A. Scenario Cast & Realism				
Patient:	<input type="checkbox"/> Computerized Mannequin	Realism:	<input checked="" type="checkbox"/> Conceptual	
	<input checked="" type="checkbox"/> Mannequin		<input checked="" type="checkbox"/> Physical	
	<input type="checkbox"/> Standardized Patient		<i>Select most important dimension(s)</i>	<input type="checkbox"/> Emotional/Experiential
	<input type="checkbox"/> Hybrid			<input type="checkbox"/> Other:
	<input type="checkbox"/> Task Trainer			<input type="checkbox"/> N/A
Confederates	Brief Description of Role			
RN	Gives patient history, makes it clear they are worried about the quality of vaginal bleeding.			
B. Required Monitors				
<input checked="" type="checkbox"/> EKG Leads/Wires	<input type="checkbox"/> Temperature Probe	<input type="checkbox"/> Central Venous Line		
<input checked="" type="checkbox"/> NIBP Cuff	<input type="checkbox"/> Defibrillator Pads	<input type="checkbox"/> Capnography		
<input checked="" type="checkbox"/> Pulse Oximeter	<input type="checkbox"/> Arterial Line	<input type="checkbox"/> Other:		
C. Required Equipment				
<input checked="" type="checkbox"/> Gloves	<input checked="" type="checkbox"/> Nasal Prongs	<input type="checkbox"/> Scalpel		
<input checked="" type="checkbox"/> Stethoscope	<input type="checkbox"/> Venturi Mask	<input type="checkbox"/> Tube Thoracostomy Kit		
<input type="checkbox"/> Defibrillator	<input checked="" type="checkbox"/> Non-Rebreather Mask	<input type="checkbox"/> Cricothyroidotomy Kit		
<input checked="" type="checkbox"/> IV Bags/Lines	<input checked="" type="checkbox"/> Bag Valve Mask	<input type="checkbox"/> Thoracotomy Kit		
<input checked="" type="checkbox"/> IV Push Medications	<input type="checkbox"/> Laryngoscope	<input type="checkbox"/> Central Line Kit		
<input checked="" type="checkbox"/> PO Tabs	<input type="checkbox"/> Video Assisted Laryngoscope	<input type="checkbox"/> Arterial Line Kit		
<input checked="" type="checkbox"/> Blood Products	<input type="checkbox"/> ET Tubes	<input checked="" type="checkbox"/> <b>Other: Bakri Balloon</b>		
<input type="checkbox"/> Intraosseous Set-up	<input type="checkbox"/> LMA	<input checked="" type="checkbox"/> <b>Other: Foley catheter</b>		
D. Moulage				
Hospital gown, fake blood / clots, wig				
E. Approximate Timing				
Set-Up:	5 min	Scenario:	15 min	
		Debriefing:	15 min	



# Postpartum Hemorrhage Case



## Section V: Patient Data and Baseline State

### A. Clinical Vignette: To Read Aloud at Beginning of Case

Josie is a 25 G2P1A1 who delivered a healthy baby girl 3 days ago. She had a spontaneous vaginal delivery without complications. She was discharged from hospital yesterday. She complains to the triage nurse that she is feeling faint and worried about her heavy vaginal bleeding.

### B. Patient Profile and History

Patient Name: Josie Sang	Age: 25	Weight: 60kg	
Gender: <input type="checkbox"/> M <input checked="" type="checkbox"/> F	Code Status: Full code		
Chief Complaint: Vaginal Bleeding			
Josie is upset, looks pale and			
Past Medical History: Healthy	Medications:	Prenatal vitamins Vitamin D	
Past Surgical History: D&C post miscarriage 2 years ago. No complications			
Allergies: None.			
Social History: Married. No drugs or alcohol. Loves baseball.			
Family History: No pertinent FamHx			
Review of Systems:	CNS:	Drowsy	
	HEENT:	Nil	
	CVS:	Nil	
	RESP:	Nil	
	GI:	Cramps	
	GU:	Complains of heavy vaginal bleeding	
	MSK:	Nil	INT:

### C. Baseline Simulator State and Physical Exam

<input type="checkbox"/> No Monitor Display	<input checked="" type="checkbox"/> Monitor On, no data displayed	<input type="checkbox"/> Monitor on Standard Display	
HR: 145/min	BP: 105/60	RR: 18/min	O <sub>2</sub> SAT: 95%
<b>T: 36.7°C</b>	<b>Glucose: 6.2 mmol/L</b>	<b>GCS: 14 (E3V5M6)</b>	
General Status: Drowsy and pale.			
CNS:	GCS 14.		
HEENT:	PERLA 3mm.		
CVS:	No murmur, tachy, no murmur		
RESP:	Normal		
ABDO:	Soft, Palpable uterus above umbilicus		
GU:	Heavy vaginal bleeding with clots		
MSK:	Normal. No signs trauma.	SKIN:	Pale



# Postpartum Hemorrhage Case



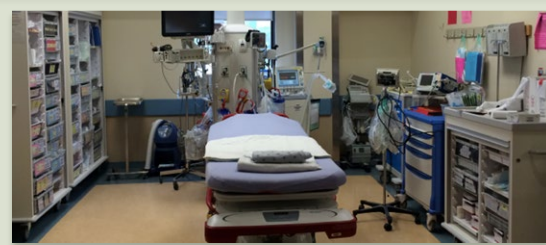
## Section VI: Scenario Progression

### Scenario States, Modifiers and Progression

Patient State	Patient Status	Learner Actions, Modifiers & Triggers to Move to Next State	
<p><b>1. Baseline State</b>                      Rhythm: sinus tach                      HR: 145/min                      BP: 105/60                      RR: 18/min                      O<sub>2</sub>SAT: 95%                      T: 36.7°C                      Glucose: 6.2</p>	<p>GCS 14                      Lying in bed, looks pale and drowsy and weak.                      Occasional moans from cramps</p>	<p><u>Learner Actions</u>                      - <input type="checkbox"/> Set of vitals                      - <input type="checkbox"/> Review chart and history with RN                      - <input type="checkbox"/> Physical exam                      - <input type="checkbox"/> 2 Large bore IV access                      - <input type="checkbox"/> Order labs (CBC, cross-match, INR)                      - <input type="checkbox"/> Start IV bolus with oxytocin 40 units/L wide open                      - <input type="checkbox"/> Call for help (extra MD, RNs, OBGYN)                      - <input type="checkbox"/> Place oxygen on patient</p>	<p><u>Modifiers</u>                      Changes to patient condition based on learner action                      If IVF with oxytocin not started patient becomes more hypotensive</p> <p><u>Triggers</u>                      For progression to next state                      -Learner actions complete → <b>Stage 2. Deterioration</b></p>
<p><b>2. Deterioration</b>                      HR: 160/ min                      BP: 85/40                      RR: 22/min                      O<sub>2</sub>SAT: 95%</p>	<p>Increased cramping and large gush of blood from vagina.                      Ongoing Vagbleed.                      Complains of feeling faint.</p>	<p><u>Learner Actions</u>                      - <input type="checkbox"/> Oxytocin running in IVF                      - <input type="checkbox"/> Misoprostol 400-800 mcg SL or buccal                      - <input type="checkbox"/> Methylergonovine (ergot) 0.2 mg IM or IV                      - <input type="checkbox"/> Hemabate 0.25mg IM                      - <input type="checkbox"/> TXA 1 g IV                      - <input type="checkbox"/> call for or start transfusion of 2 units pRBCs                      - STAT Group and SCREEN LAB                      -2g Fibrinogen Concentrate</p>	<p><u>Modifiers</u>                      If uterotonic medications given prior to IV bolus → <b>Stage 4. Syncope</b></p> <p><u>Triggers</u>                      - Learner actions complete → <b>3. Improvement but continued bleeding- initiation of the Massive Transfusion Protocol- Notify Blood Bank of immediate need for fibrinogen concentrate.</b></p>
<p><b>3. Improvement but continued bleeding</b>                      HR: 140/min                      BP: 100/52                      RR: 22/min                      O<sub>2</sub>SAT: 95% RA</p>	<p>Patients hemodynamics improving but vaginal bleeding still ongoing</p>	<p><u>Learner Actions</u>                      - <input type="checkbox"/> "Scoop the goop" – remove clots from uterus                      - <input type="checkbox"/> Bimanual massage                      - <input type="checkbox"/> Insert foley catheter                      - <input type="checkbox"/> Insert Bakri balloon</p>	<p><u>Modifiers</u>                      If scoopgoop/bimanual done prior to IV bolus → <b>Stage 4. Syncope</b></p> <p><u>Triggers</u>                      - Learner actions complete → <b>5. Resolution</b></p>



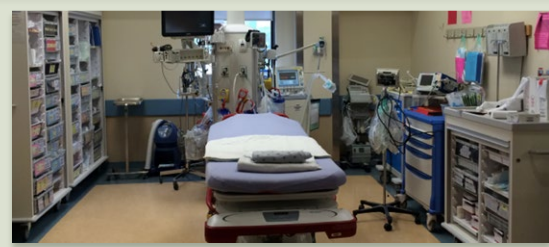
# Postpartum Hemorrhage Case



<p><u>NOTE: SKIP THIS STEP IF ABOVE STAGES MANAGED APPROPRIATELY</u></p> <p><b>4. Synope (only if indicated)</b></p> <p>HR: 60/min BP: 60/20 RR: 22/min O<sub>2</sub>SAT: -</p>	<p>If incorrect management in stage 2 or 3 then – Patient feels awful, vomits and syncopal.</p>	<p><u>Learner Actions</u></p> <ul style="list-style-type: none"> <li>- <input type="checkbox"/> Head down positioning</li> <li>- <input type="checkbox"/> Bolus fluids</li> <li>- <input type="checkbox"/> Recognize syncope</li> </ul>	<p><u>NOTE: SKIP THIS STAGE IF ABOVE STAGES MANAGED APPROPRIATELY</u></p> <p><u>Triggers</u></p> <p>- Learner actions complete → <b>5. Resolution</b></p>
<p><b>5. Resolution</b></p> <p>HR: 100/min BP: 110/72 RR: 18/min O<sub>2</sub>SAT: 95% RA</p>	<p>Patients hemodynamics improving, bleeding stops, she feels and looks better</p>	<p><u>Learner Actions</u></p> <ul style="list-style-type: none"> <li>- <input type="checkbox"/> Summarize</li> <li>- <input type="checkbox"/> Handover care / discuss with OBGYNE</li> <li>- <input type="checkbox"/> Discuss plan for disposition, further management</li> </ul>	<p><u>END OF SCENARIO</u></p>



# Postpartum Hemorrhage Case

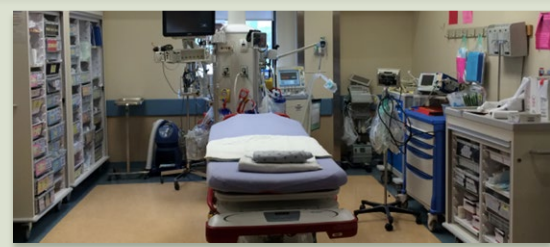


## Section VII: Supporting Documents, Laboratory Results, & Multimedia

Laboratory Results	
<b><u>Labs: (now)</u></b> WBC: 8.0 Neuts: 4.0 Hgb: 90 Plt: 280 INR: 1.0  Cross-match Pending	<b><u>Labs: ( 3 days ago)</u></b> WBC: 9.0 Neuts: 4.5 Hgb: 113 Plt: 283 INR: 1.0 Bili: 12 GGT: 40 AST: 45 Lipase: 85



# Postpartum Hemorrhage Case



## Section VIII: Debriefing Guide

General Debriefing Plan	
<input type="checkbox"/> Individual	<input checked="" type="checkbox"/> Group
<input type="checkbox"/> With Video	<input type="checkbox"/> Without Video
Objectives	
Educational Goal:	To help participants develop an approach and management of a patient with postpartum hemorrhage
CRM Objectives:	3) Prioritize interventions in the management of postpartum hemorrhage Communicate priorities effectively with team members.
Medical Objectives:	1) Stabilize postpartum patient 3) Demonstrate approach to managing postpartum hemorrhage
Sample Questions for Debriefing	
<ol style="list-style-type: none"> <li>1) How did it feel at the outset of the case? Did the team feel like the priorities were clear?</li> <li>2) What are the consequences of uterine exploration without adequate fluid resuscitation?</li> <li>3) In a patient who has heavy vaginal bleeding how do you determine when to provide blood transfusion? How did you / your team decide to give(or not give) blood?</li> <li>4) Explain your reasoning of medication choices for this patient?</li> </ol>	
Key Moments	
<ul style="list-style-type: none"> <li>- Initial recognition of unstable bleeding?</li> <li>- Recognition of need for Bakri insertion?</li> <li>- Initiate the Massive Transfusion protocol which also involves obtaining Stat Lab. If available, viscoelastic tests may be used as a guide to provide fibrinogen but are not available in most centres. If STAT lab available can wait until Fibrinogen level is back prior to Administration. However, if in rural area or STAT lab not available, some weak evidence in providing fibrinogen empirically.</li> <li>- If fibrinogen level &lt; 2g/L, then provide 2g fibrinogen concentrate.</li> <li>- REFERENCE: Fbgn concentrates for post partum haemorrhage? Do not miss the most relevant population! B. Ickx, C.M. Samama British Journal of Anaesthesia, Vol.114; 4, April 2015, 548-550.</li> </ul>	

