

## Appendix U: Sample Code Crimson Postpartum Hemorrhage Management



Note: This is a SAMPLE developed for a particular facility as an example to work from. You may need to adjust based on the individual circumstances of your facility.

<b>SUBJECT:</b>	Code Crimson: Management of Postpartum Hemorrhage (PPH)	
The following MemorialCare affiliates have adopted this: <input checked="" type="checkbox"/> Policy & Procedure or <input type="checkbox"/> Policy (only) or <input type="checkbox"/> Procedure (only)	<input type="checkbox"/> MemorialCare Shared Services <input type="checkbox"/> Long Beach Medical Center <input checked="" type="checkbox"/> Miller Children’s & Women’s Hospital Long Beach <input type="checkbox"/> Orange Coast Medical Center <input type="checkbox"/> Saddleback Medical Center <input type="checkbox"/> MemorialCare Medical Foundation <input type="checkbox"/> Select Health Plan <input type="checkbox"/> Memorial Medical Center Foundation <input type="checkbox"/> Saddleback Memorial Foundation	REFERENCE:  PAGE: 1 OF: 2  EFFECTIVE: PENDING
	<b>MANUAL:</b>	
	<b>OWNER:</b>	Patient Care Services

### I. Policy

- A. Goals for postpartum hemorrhage (PPH) management include timely optimal patient care through preparation, early identification and prompt intervention.
- B. One third of women who have a hemorrhage have no risk factors; therefore, regardless of risk factors, every birth has to be considered to have risk, reinforcing the need for universal vigilance.
- C. Code Crimson is triggered upon reaching a quantitative blood loss of 500 ml following vaginal delivery, or 1000 ml following cesarean delivery and patient is still bleeding.
- D. Code crimson is activated by any member of the healthcare team by dialing \*2 and informing the PBX operator: “Code Crimson” followed by unit where the patient is bedded. Staff on that unit direct responders to the room of the event. A physician order is not required.
- E. The overhead page of Code Crimson mobilizes resources to the bedside/patient location and sets in motion evidence-based interventions based on responder role (Attachment U-1).
- F. Code Crimson responders include:
- |  |                                   |
|--|-----------------------------------|
| 1. Maternal Fetal Medicine (MFM) physician | 5. Women’s OR coordinator         |
| 2. OB Hospitalist                          | 6. Mother Baby Unit coordinator   |
| 3. OB Resident                             | 7. Labor and Delivery Coordinator |
| 4. Women’s anesthesiologist                | 8. BirthCare Center RN staff      |

G. PPH evidence-based emergency response medications, suggested diagnostic testing, treatments and interventions, including activation of Massive Transfusion Procedure (MTP) are contained within the *ACUTE POSTPARTUM HEMORRHAGE OBGYN (LBM/MCH) [1254] order set*.

H. Standardized PPH Carts are stocked and available for emergency use in Labor & Delivery (L&D), Women's Operating Room (WOR), BCC PACU and Mother-Baby Unit (MBU).

I. Evidence based PPH emergency response medications are immediately available in all obstetrical units.

J. It is generally expected that most PPH events will occur in the BirthCare Units, however, the other locations where an PPH event could occur are in the Long Beach Medical Center (LBMC) Emergency Department, Intensive Care Unit (ICU), Critical Cardiac Unit (CCU), Post Anesthesia Recovery Unit (PACU) or Operating Rooms (OR).

1. An OB care team consisting of an OB RN and physician provide initial obstetrical assessment, interventions, and documentation appropriate to the clinical situation, which includes guidance on the management/oversight of the PPH and activation of Code Crimson in the ICU/CCU and OR/PACU.
2. OB RN will continue to be available of ongoing obstetrical assessments as needed, including needs and provision for lactation assistance.

K. Escalation: The Labor and Delivery team of obstetricians, nurses and anesthesiologists are generally considered as first responders, but there may be a number of clinical circumstances which require consultation with other specialties and transfer to a higher level of care. The Maternal Fetal Medicine physician who responds to the Code Crimson event determines if patient requires specialized interventions not available in the BirthCare Units and collaborates/consults with providers in those specialty units to ensure both obstetrical and medical conditions are being addressed.

L. All staff and providers who treat pregnant/postpartum patients will receive role-specific education regarding the hospital's evidence-based PPH procedures at orientation, whenever changes to the procedure occur, or every two years.

## II. Definitions

A. BMI: body mass index

B. Code Crimson: The term used to define the management of PPH events in the BirthCare Center (BCC).

C. Code Crimson Stage 1: QBL > 500 ml for Vaginal delivery or > 1000mls for Cesarean Section AND still bleeding.

D. Code Crimson Stage 2: QBL > 1500 ml Vaginal Delivery or Cesarean Delivery AND still bleeding.

E. Massive Hemorrhage: Blood loss of 1500 ml or greater regardless of mode of delivery

F. Massive Transfusion Procedure (MTP): MCWH Policy, Massive Transfusion Procedure, PL-524 addresses the appropriate mix of blood and blood components for a patient experiencing significant blood loss. Implementation of the MTP is indicated for a patient who is likely to require the rapid transfusion of greater than 6 units of blood and blood components within two hours and has the potential to progress to consumptive coagulopathy and uncontrolled hemorrhage.

G. Postpartum Hemorrhage (PPH): The cumulative blood loss of greater than 500 ml with vaginal birth or greater than 1000 ml with cesarean birth

H. QBL: Quantified Blood Loss determined by direct measurement in graduated containers or by weight of blood-soaked items.

### III. Procedure for birthcare units

A. Equipment required:

1. Scale
2. PPH Cart (See cart checklist in related documents)
3. Calculator

B. Evaluate hemorrhage risk factors upon admission, after delivery, prior to transfer, and thereafter once per shift.

C. Verify blood type and antibody screen from prenatal record.

D. Verify that patient will accept blood/blood products and document acceptance in the electronic health record (EHR).

E. For patients who indicate non-acceptance of blood:

1. Provide educational handout A patient's guide to blood transfusion.
2. Obtain signature on the refusal to permit blood transfusion form.
3. Determine what, if any, alternative treatments and/or therapies the patient will accept.
4. Inform the primary care provider of patient's refusal status and what alternative treatments and/or therapies the patient will accept.

F. Obtain physician order(s) for the blood bank based on the following conditions/PPH Final Risk Assessment result:

1. Low - medium risk, order Type and Screen.
2. High risk patient, order Type and Cross match for 2 units Packed red blood cells (PRBC).
3. If antibody screen positive (not low-level anti-D from Rho-GAM), order Type & Cross match for 2 units PRBC.

G. Obtain patient consent when blood transfusion is ordered.

H. Ongoing Risk Assessment:

1. Notify the physician to update orders when additional hemorrhage risk factors are identified after prior assessment that would change the PPH Risk Assessment score.
2. Consider classification of patients with multiple risk factors as high risk.

I. Perform Quantification of Blood Loss (QBL) (see Attachment U-2), at delivery, the immediate postpartum period, and in delayed postpartum hemorrhage events. QBL is a team effort.

J. Preferred methods and processes for QBL include weighing of blood-soaked items and direct measurement with graduated collection devices as described in Attachment U-2.

K. When QBL meets Stage 1 Code Crimson criteria, activate and initiate interventions, including uterotonic medications for uterine atony and any blood products to infuse, with physician order, as described in Code Crimson response matrix Attachment U-1.

L. When QBL meets Stage 2 Code Crimson, escalate interventions as defined by the response matrix Attachment B, which may include activation of Massive Transfusion Procedure (MTP).

M. Initiate order set ACUTE POSTPARTUM HEMORRHAGE OBGYN (LBM/MCH) [1254]and/or see policy Blood and Blood Components: Emergent/Massive Transfusion Procedure (MTP): Adult (PL-524).

N. Provide support to mother and partner in care by:

1. Allowing families and/or partner in care to remain present during the event whenever possible for added emotional support of the mother. If families must separate (return to the OR, infant to the nursery, transfer to another department) make every attempt to provide an estimate for when they may be reunited.
2. Providing full information to patient and partners about the medical condition and prognosis of both the mother and the infant as it happens and as it continues.
3. Reassure patients and families and provide social services or spiritual care referrals when appropriate.

O. For all cases of ongoing hemorrhage, document, tally, and report intake and output measurements to the team at frequent intervals.

P. Initiate a team debrief for Code Crimson Stage 2 events utilizing the MCWH debriefing tool.

1. Upon completion of the debriefing tool, return form to designated location on the unit.
2. Collect forms regularly and send to the Perinatal Performance Improvement Patient Safety Collaborative Committee for review of effectiveness of the care, treatment, and services provided by the hemorrhage response team.

Q. Provide education to all patients (and their families including the designated support person whenever possible) about the signs and symptoms/when to alert the healthcare team of postpartum hemorrhage (sudden gush of blood or clots, heavy bleeding into pad, lightheadedness or dizziness).

R. At discharge, provide printed discharge instructions with the signs and symptoms of delayed postpartum hemorrhage and when to seek immediate care. Review these instructions with patient and their support person (if possible) to validate understanding.

#### **IV. Documentation**

A. Document in the EHR:

1. PPH risk assessments.
2. QBL:
  - a) Record Method of Quantification as “Direct measure” or “Weight of blood-soaked items”.
  - b) Complete QBL documentation in the EHR by the primary care RN or designee. Record ongoing quantification of blood loss during delivery and in the immediate postpartum period routinely for all patients.

c) Blood loss recorded on the Delivery Summary or on the Recovery Record will appear on Intake & Output (I&O) Report and Hemorrhage Report in the EHR.

d) After completing calculations, record volume of blood loss in EHR. For cases of ongoing hemorrhage, calculate intake and output measurements, document sequentially in the EHR and report to the team at frequent intervals.

3. Code Crimson/PPH interventions and a significant event note by the primary care RN and/or the designated scribe.

## V. References/authority

A. Association of Women's Health and Obstetric and Neonatal Nursing Practice Brief: Quantification of Blood Loss: AWHONN Practice Brief Number 1; Nursing for Women's Health. (Feb-Mar 2015) 19 (1):96-98.

B. California Maternal Quality Care Collaborative (CMQCC) Improving Healthcare Response to Obstetrical Hemorrhage Version 2.0. A California Quality Improvement Toolkit. (2015)

C. Main, E. K., Goffman, D., Scavone, B. M., Low, L. K., Bingham, D., Fontaine, P. L., Gorlin, J.B., Lagrew, D.C. & Levy, B. S. (2015). National partnership for maternal safety consensus bundle on obstetric hemorrhage. *Journal of midwifery & women's health*, 60(4), 458-464.

D. Shields, L. E., Goffman, D., & Caughey, A. B. (2017). Postpartum Hemorrhage. *Obstetrics and Gynecology*, 130(4), E168-E186.

E. Smith, C. M., Borders, A. E., & King, T. L. (2019). ACOG committee opinion no. 794. Quantitative blood loss in obstetric hemorrhage. *Obstet Gynecol*, 134(794), 150-156.

# Attachment U-1

<b>CODE CRIMSON Stage 1: QBL &gt; 500ml Vaginal Delivery Or &gt; 1000ml Cesarean Section AND STILL BLEEDING</b>										
Responder	Time	Primary RN:	L&D/MBU Coord:	QBL Role:	Scribe Role:	2nd RN:	OB First Responder:	Anesthesiologist:		
Tasks		Call *2 = Code Crimson	To bedside-Receive SBAR	QBL w/Call Out q5-10min	Begin Scribe	OBH Cart to Location	To bedside-Receive SBAR	To bedside-Receive SBAR		
		Continuous Fundal Massage	Assign Roles to Responders w/Call Out			Ensure IV access/#16 or 18g-restart/2nd line/Labs	Patient assessment	Ensure IV access #16 or 18g-restart/2nd line/Labs		
		VS w/Call Out q5-10min	Request Primary OB to bedside			Apply Warm Blankets	Assist/support Primary OB	Provide Pain Management		
		Apply O <sub>2</sub> & Pulse Ox	Provide Family Support. Notify Social Services for follow up.			<b>Administer meds as directed per MD:</b>	Bimanual uterine massage	Assist/Manage/Direct Hemodynamic Intervention in tandem with MFM		
		SBAR to Responders	L&D Coordinator will bring ultrasound machine to location of event.			<b>Methergine 0.2mg IM</b> (methylergonovine maleate) <b>(Do not give if asthmatic)</b>	Provide orders as appropriate			
		Standardized PPH dosing of IV Dose				<b>remabate 250mcg IM</b> (carboprost tromethamine) <b>(Do not give if asthmatic)</b> ; may repeat q20min	Perform procedural interventions as required			
		Per MD order, initiate ACUTE POSTPARTUM HEMORRHAGE OBGYN (LBM) [1254] order set.					<b>TXA 1gm IV in 10ml over 10min</b> (tranexamic acid = Cylklok apron) (May repeat if still bleeding p30min or stopped and restarted within 24hrs of the first dose)	Decision to move pt to higher level of care and/or location		
		If MTP activated per MD order, initiate Adult Rapid Response Team (RRT) to run Rapid Infuser via *2 call.					<b>Cytotec (Misoprostol 1000mcg per rectum)</b>			
		<b>Adult Rapid Response Team (RRT) *2</b>					Insert Foley Catheter w/ Urimeter			<b>Delivery Time:</b> _____
						Obtain Blood Warmer				<b>Delivery QBL:</b> _____
					Notify Blood Bank / Type&Cross / Obtain blood products & administer via blood warmer per MFM Order					
Code Crimson Pages To: L&D Coordinator, MBU Coordinator, WOR Coordinator, OBC Resident, MFM Physician and Anesthesiologist.										
<b>CODE CRIMSON Stage 2: QBL &gt; 1500ml Vaginal Delivery Or Cesarean Section AND STILL BLEEDING</b>										
Responder	Time	Primary RN/Circulator:	L&D/MBU Coordinator:	QBL Role:	Scribe Role:	2nd RN/Circulator:	RRT (RN/RCP/House Sup):	OB First Responder:		
Tasks		Move pt to next location	Activate MTP per MD Order/Notify RRT	QBL with Call Out q5-10min	Continue scribe	Apply SCDs	To bedside-Receive SBAR	Procedural / Surgical Interventions		
		Assist Anesthesiologist	Notify DR/IR			Apply Bair Hugger	Activate MTP per MD Order			
			Notify 2nd Anesthesiologist			Repeat Labs per MD Order	Transfuse via Rapid Infuser	<b>Anesthesiologist:</b>		
			Notify Social Services & Spiritual Care				ISTAT as appropriate	Continue pain management		
								Assume hemodynamic management		
								Assume VS w/Call Out q5-10min		

WOR Desk x32740	L&D Coordinator x85120	ICU Desk x37180	CCU Desk x33003	Blood Bank x30815	Central Equipment Supply x81395
WOR Coordinator x82128	MBU Coordinator x35898	ICU RN Cisco x82569	CCU RN Cisco x82405	Venipuncture x30744	Central Supply x31957
Anesthesia x85126				Interventional Radiology x31550	

## Attachment U-2

### Quantitative Blood Loss Methods and Procedures in the Obstetrical Patient

1. Measure by weight of blood-soaked items. This is the most accurate and practical method of determining blood loss. Blood loss: 1 gram = 1 mL

#### Vaginal Delivery

- ▶ At the conclusion of the delivery, weigh sponges, underpad, and other bloody items.
- ▶ Place underpad or red bag on scale and “zero”.
- ▶ Place bloody items on underpad or in red bag and record weight.
- ▶ Refer to dry weights of common items posted on scales.
- ▶ Calculate total dry weight and subtract from weight of bloody items.
- ▶ Add amount of blood loss determined by weight plus amount determined by direct measure (see number 4. below for direct measure) and record on Delivery Summary.
- ▶ Identify method of quantification as “Weight of blood-soaked items” and “Direct measure” in the EHR.

#### Cesarean Delivery

- ▶ During a case, OR Scrub staff passes bloody lap sponges off scrub table.
- ▶ Circulator places in hanging lap sleeve bags (5 sponges/sleeve), see policy Count Policy, PC-062.
- ▶ Zero scale prior to weighing bloody sponges/lap sleeves.
- ▶ Circulator weighs bloody sponges and lap sleeve bags all together near end of case (sponges left in sleeves).
- ▶ Enter total weight, # sponges weighed, # hanging sleeves weighed, in EHR calculator.
- ▶ EHR auto calculates QBL from entered data.

#### Immediate Postpartum Vaginal or Cesarean Delivery Recovery Period

- ▶ Following delivery, use standard pack of items with known dry weight (underpad, absorbent pad, peri-pad, ice pack, etc.).
- ▶ At the conclusion of the recovery period, or sooner if excessive blood loss is suspected, or at any time of removal/changing of peri-pads, weigh all bloody items.
- ▶ Place clean underpad or red bag on scale and “zero” the scale.
- ▶ Place bloody items on underpad or in red bag and record weight.
- ▶ Refer to dry weights of standard pack and other common items posted on scales.
- ▶ Calculate total dry weight of items and subtract dry weight from weight of blood-soaked items.
- ▶ Record blood loss on Recovery Record.
- ▶ Record Method of Quantification as “Weight of blood-soaked items”.

2. Direct Measure (measured with graduated containers)

#### Vaginal Delivery

- ▶ Use graduated “pouch” under the buttock’s drapes for vaginal deliveries.
- ▶ Physician or nurse notes the volume in the pouch at the time of delivery of the infant whenever clinically possible (attributed to amniotic fluid, amnioinfusion, and/or urine).
- ▶ Upon completion of delivery of the placenta, immediate stabilization and repairs, note the volume in the pouch.

- ▶ Subtract the volume at the time of delivery from the final volume.
- ▶ In most deliveries, rupture of membranes has occurred well before delivery of the infant. Therefore, amniotic fluid volume collected in the pouch is usually minimal. If such is the case, even if volume is not noted, record QBL by direct measure after delivery of the placenta.
- ▶ Add amount of blood loss determined by direct measure plus the amount determined by weight, if any (see number 3 for weight measurement.) and record on Delivery Summary in the EHR.

### Cesarean Delivery

- ▶ Set up a surgical suction system and set to “zero” prior to start of surgery.
- ▶ After delivery of the infant, but before delivery of the placenta, scrub tech and/or assistant surgeon suctions amniotic fluid into the system’s canister and circulator either notes the volume in the canister or resets the cannister to zero.
- ▶ Before use of any irrigation, note the volume in the system cannister, and subtract the volume at the time of delivery (amniotic fluid) from the final volume (if the cannister wasn’t zero’ d).
  - a) If cannister volume was not obtained prior to use of irrigation, subtract irrigation volume used from the cannister volume.
- ▶ Add amount of blood loss determined by direct measure plus the amount determined by weight.
- ▶ Report final volume to anesthesiologist for documentation in the EHR.



# Attachment U-3

Inventory: Obstetric Hemorrhage Cart Expiration Log Month: \_\_\_\_\_

Year: \_\_\_\_\_

Drawer 1			Drawer 4		
1	Tamponade Balloon-EBB	EXP	1	IV pressure bag	
1	Tamponade Balloon -Bakri	EXP	2	IV start kit (macro)	EXP
			1ea	Med Adm kit: TXA, methylergonovine, carboprost	EXP
2	60 ml syringes	EXP	2	21 gauge 1" needle	EXP
			2	21 gauge 1.5" needle	EXP
1	500 ml NS	EXP		-	-
1	1000 ml NS	EXP	3	Filter needles	EXP
1	Dry erase marker		2	IV cath #16	EXP
	<b>MEDs ALL AVAILABLE IN ACUDOSE</b>		4	IV cath #18	EXP
	OBH MED BOX:		1	1000 ml LR	EXP
	Select Patient, then OVERRIDE, you will see		1	1000 ml NS	EXP
	OBH Meds. Pull the whole package of meds		1	500 ml Normal Saline	EXP
2	Yellow locks for after cart is stocked		1	Y-type blood set with pump	EXP
Drawer 2			2	Twin-site extension set	EXP
3	Ring forcep (sponge stick)	EXP	1	Trifuse extension set	EXP
			2	Primary IV set (pump tubing)	EXP
			2	Primary IV set (free flow)	EXP
2	Vaginal packing (2 inch)		1	Transfusion Recommendations	
2	Mini-Lap sponges		2	Lab draw set w/3 tubes (red,blue,lavender/covers coag's/cbc)	EXP
				Additional Lab tubes in the drawer(CMP:add mint green;T&C:add pink)	EXP
2	Large lap sponges			Please list earliest EXP date of all lab tubes	
			1	Lab Test Guide (hanging on cart)	
			4	Blunt fill needles	EXP
1	Medium Speculum		2	10ml syringes	EXP
1	Large Speculum		2	5 ml syringes	EXP
			2	3 ml syringes	EXP
1	Hunters or Bumm curette		1	1 ml syringe	EXP
1	Right angle retractor		2	NS flush 10ml syringe	EXP

1	Jackson retractor			Alcohol wipes/Gauze 2x2's/ tape	
1	Eastman retractor			-	-
			1	Betadine	EXP
1	Flashlight (open and check batteries)	EXP	Drawer 5		
			1	Foley catheter kit 16 fr	EXP
Drawer 3			1	Drainage bag (for tamponade balloon)	EXP
2 ea	Sterile gloves size 6, 6 ½, 7, 7 ½, 8, 8½	EXP	1	Urometer with bag (for foley)	EXP
6	Lubricating jelly	EXP	1	Rapid Infuser set up	EXP
			1ea	All BP cuff sizes	
2	Surgical Gowns		2	Stethoscopes	
2	Gown Sleeves		1	Oxygen mask	
3	Mask w/shield		4	Pulse Ox sensor	EXP
	-	-	1	Oxisensor cable	
2	Red bio-hazard bags (or roll is fine)		1	Bedpan	
			1	Pillow case	
			1	Utz Gel	EXP
			1	Pkg of White or blue chux	
				B-Lynch sutures: 0 & #1 Vicryl on CTXB	EXP
				B-Lynch sutures: #1Vicryl on CTB-1	EXP
				WEIGHTED speculum	
Top Side of Cart					
	Bakri instructions			Scale	
	EBB instructions			Calculator	
	Code Crimson Workflow			OBH binder	
				MTP instructions	
<p><b>FIRST OF THE MONTH:</b> open cart and check all supplies; any to expire in the month REPLACE. Please mark the date of all items with an expiration. This current month log sheet is to be kept in the OBH Binder ON the OBH cart. To be filed with Daily Cart Log at the end of the month.</p>					
Thank you for being part of the solution :)			Women's.CARTS. OBHemorrhage Cart 1.07.2020		