

## EMERGENCY MANAGEMENT PLANS

### OBSTETRIC HEMORRHAGE EMERGENCY MANAGEMENT PLAN: CHECKLIST FORMAT

CMQCC

#### Obstetric Hemorrhage Emergency Management Plan: Checklist Format

Revision 9/10/14

#### Stage 0: All Births – Prevention & Recognition of OB Hemorrhage Prenatal Assessment & Planning

- Identify and prepare for patients with special considerations:** Placenta Previa/Accreta, Bleeding Disorder, or those who Decline Blood Products
- Screen and aggressively treat severe anemia:** if oral iron fails, initiate IV Iron Sucrose Protocol to reach desired Hgb/Hct, especially for at risk mothers.

#### Admission Assessment & Planning

Verify Type & Antibody Screen from prenatal record

*If not available,*

- Order Type & Screen (lab will notify if 2<sup>nd</sup> specimen needed for confirmation)

*If prenatal or current antibody screen positive (if not low level anti-D from Rho-GAM),*

- Type & Crossmatch 2 units PRBCs

*All other patients,*

- Send specimen to blood bank

- Evaluate for **Risk Factors** on admission, throughout labor, and postpartum. (At every handoff)

*If medium risk:*

- Order Type & Screen
- Review Hemorrhage Protocol

*If high risk:*

- Order Type & Crossmatch 2 units PRBCs
- Review Hemorrhage Protocol
- Notify OB Anesthesia

*Identify women who may decline transfusion*

- Notify OB provider for plan of care
- Early consult with OB anesthesia
- Review Consent Form

#### Ongoing Risk Assessment

- Evaluate for development of additional risk factors in labor:

- Prolonged 2<sup>nd</sup> Stage labor
- Prolonged oxytocin use
- Active bleeding
- Chorioamnionitis
- Magnesium sulfate treatment

- Increase Risk level (see below) and convert to Type & Screen or Type & Crossmatch**

- Treat multiple risk factors as High Risk**

- Monitor women postpartum for increased bleeding**

#### Admission Hemorrhage Risk Factor Evaluation

Low (Clot only)	Medium (Type and Screen)	High (Type and Crossmatch)
No previous uterine incision	Prior cesarean birth(s) or uterine surgery	Placenta previa, low lying placenta
Singleton pregnancy	Multiple gestation	Suspected Placenta accreta or percreta
≤ 4 previous vaginal births	> 4 previous vaginal births	Hematocrit < 30 AND other risk factors
No known bleeding disorder	Chorioamnionitis	Platelets < 100,000
No history of PPH	History of previous PPH	Active bleeding (greater than show) on admit
	Large uterine fibroids	Known coagulopathy

#### All Births – Prophylactic Oxytocin, Quantitative Evaluation of Blood Loss, & Close Monitoring

**Active Management of Third Stage**

- Oxytocin infusion: 10-40 units oxytocin/1000 ml solution titrate infusion rate to uterine tone; or 10 units IM; do not give oxytocin as IV push

**Ongoing Quantitative Evaluation of Blood Loss**

- Using formal methods, such as graduated containers, visual comparisons and weight of blood soaked materials (1gm = 1ml)

**Ongoing Evaluation of Vital Signs**

**If: Cumulative Blood Loss > 500ml vaginal birth or > 1000ml C/S with continued bleeding -OR-  
Vital signs > 15% change or HR ≥ 110, BP ≤ 85/45, O2 sat < 95% -OR- Increased bleeding during recovery or postpartum,  
proceed to STAGE 1**

<b>STAGE 1: OB Hemorrhage</b> <b>Cumulative Blood Loss &gt;500ml vaginal birth or &gt;1000ml C/S with continued bleeding -OR- Vital signs &gt;15% change or HR ≥ 110, BP ≤ 85/45, O2 sat &lt;95% -OR- Increased bleeding during recovery or postpartum</b>		
MOBILIZE	ACT	THINK
<p><b>Primary nurse, Physician or Midwife to:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Activate OB Hemorrhage Protocol and Checklist</li> </ul> <p><b>Primary nurse to:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Notify obstetrician or midwife (in-house and attending)</li> <li><input type="checkbox"/> Notify charge nurse</li> <li><input type="checkbox"/> Notify anesthesiologist</li> </ul> <p><b>Charge nurse:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assist primary nurse as needed or assign staff member(s) to help</li> </ul>	<p><b>Primary nurse or designee:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Establish IV access if not present, at least 18 gauge Increase IV Oxytocin rate, 500 mL/hour of 10-40 units/500-1000 mL solution; Titrate infusion rate to uterine tone</li> <li><input type="checkbox"/> Apply vigorous fundal massage</li> <li><input type="checkbox"/> Administer Methergine 0.2 mg IM per protocol (if not hypertensive); give once, if no response, move to alternate agent; if good response, may give additional doses q 2 hr (If Misoprostol standard, misoprostol 800 mcg SL per protocol)</li> <li><input type="checkbox"/> Vital Signs, including O2 sat &amp; level of consciousness (LOC) q 5 minutes</li> <li><input type="checkbox"/> Weigh materials, calculate and <b>record</b> cumulative blood loss q 5-15 minutes</li> <li><input type="checkbox"/> Administer oxygen to maintain O2 sats at &gt;95%</li> <li><input type="checkbox"/> Empty bladder: straight cath or place Foley with urimeter</li> <li><input type="checkbox"/> Type and Crossmatch for 2 units Red Blood Cells STAT (if not already done)</li> <li><input type="checkbox"/> Keep patient warm</li> </ul> <p><b>Physician or midwife:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Rule out retained Products of Conception, laceration, hematoma</li> </ul> <p><b>Surgeon (if cesarean birth and still open)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inspect for uncontrolled bleeding at all levels, esp. broad ligament, posterior uterus, and retained placenta</li> </ul>	<p>Consider potential etiology:</p> <ul style="list-style-type: none"> <li>• Uterine atony</li> <li>• Trauma/Laceration</li> <li>• Retained placenta</li> <li>• Amniotic Fluid Embolism</li> <li>• Uterine Inversion</li> <li>• Coagulopathy</li> <li>• Placenta Accreta</li> </ul> <p><b>Once stabilized:</b> Modified Postpartum management with increased surveillance</p>
<p><b>If: Continued bleeding or Continued Vital Sign instability, and &lt; 1500 mL cumulative blood loss proceed to STAGE 2</b></p>		

<b>STAGE 2: OB Hemorrhage</b> Continued bleeding or Vital Sign instability, and < 1500 mL cumulative blood loss		
MOBILIZE	ACT	THINK
<p><b>Primary nurse (or charge nurse):</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Call obstetrician or midwife to bedside</li> <li><input type="checkbox"/> Call Anesthesiologist</li> <li><input type="checkbox"/> Activate Response Team: <b>PHONE #:</b> _____</li> <li><input type="checkbox"/> Notify Blood bank of hemorrhage; order products as directed</li> </ul> <p><b>Charge nurse:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Notify Perinatologist or 2<sup>nd</sup> OB</li> <li><input type="checkbox"/> Bring hemorrhage cart to the patient's location</li> <li><input type="checkbox"/> Initiate OB Hemorrhage Record</li> <li><input type="checkbox"/> If considering selective embolization, call-in Interventional Radiology Team and second anesthesiologist</li> <li><input type="checkbox"/> Notify nursing supervisor</li> <li><input type="checkbox"/> Assign single person to communicate with blood bank</li> <li><input type="checkbox"/> Assign second attending or clinical nurse specialist as family support person or call medical social worker</li> </ul>	<p><b>Team leader (OB physician or midwife):</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Additional uterotonic medication: Hemabate 250 mcg IM [if not contraindicated] <b>OR</b> Misoprostol 800 mcg SL               <ul style="list-style-type: none"> <li>o Can repeat Hemabate up to 3 times every 20 min; (note-75% respond to first dose)</li> </ul> </li> <li><input type="checkbox"/> Continue IV oxytocin and provide additional IV crystalloid solution</li> </ul> <p><b>Do not delay other interventions (see right column) while waiting for response to medications</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bimanual uterine massage</li> <li><input type="checkbox"/> Move to OR (if on postpartum unit, move to L&amp;D or OR)</li> <li><input type="checkbox"/> Order 2 units PRBCs and bring to the bedside</li> <li><input type="checkbox"/> Order labs STAT (CBC/PLTS, Chem 12 panel, Coag Panel II, ABG)</li> <li><input type="checkbox"/> <b>Transfuse PRBCs based on clinical signs</b> and response, <b>do not wait for lab results; consider emergency O-negative transfusion</b></li> </ul> <p><b>Primary nurse (or designee):</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Establish 2<sup>nd</sup> large bore IV, at least 18 gauge</li> <li><input type="checkbox"/> Assess and announce Vital Signs and cumulative blood loss q 5-10 minutes</li> <li><input type="checkbox"/> Set up blood administration set and blood warmer for transfusion</li> <li><input type="checkbox"/> Administer meds, blood products and draw labs, as ordered</li> <li><input type="checkbox"/> Keep patient warm</li> </ul> <p><b>Second nurse (or charge nurse):</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Place Foley with urimeter (if not already done)</li> <li><input type="checkbox"/> Obtain portable light and OB procedure tray or Hemorrhage cart</li> <li><input type="checkbox"/> Obtain blood products from the Blood Bank (or send designee)</li> <li><input type="checkbox"/> Assist with move to OR (if indicated)</li> </ul> <p><b>Blood Bank:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Determine availability of thawed plasma, fresh frozen plasma, and platelets; initiate delivery of platelets if not present on-site</li> <li><input type="checkbox"/> Consider thawing 2-4 FFP (takes 30 min), use if transfusing &gt; 2 units PRBCs</li> <li><input type="checkbox"/> Prepare for possibility of massive hemorrhage</li> </ul>	<p><b>Sequentially advance through procedures</b> and other interventions based on etiology:</p> <p><b>Vaginal birth</b> If <b>trauma (vaginal, cervical or uterine):</b></p> <ul style="list-style-type: none"> <li>• Visualize and repair</li> </ul> <p>If <b>retained placenta:</b></p> <ul style="list-style-type: none"> <li>• D&amp;C</li> </ul> <p>If <b>uterine atony</b> or lower uterine segment bleeding:</p> <ul style="list-style-type: none"> <li>• Intrauterine Balloon</li> </ul> <p>If <b>above measures unproductive:</b></p> <ul style="list-style-type: none"> <li>• Selective embolization (Interventional Radiology if available &amp; adequate experience)</li> </ul> <p><b>C-section:</b></p> <ul style="list-style-type: none"> <li>• B-Lynch Suture</li> <li>• Intrauterine Balloon</li> </ul> <p>If <b>Uterine Inversion:</b></p> <ul style="list-style-type: none"> <li>• Anesthesia and uterine relaxation drugs for manual reduction</li> </ul> <p>If <b>Amniotic Fluid Embolism:</b></p> <ul style="list-style-type: none"> <li>• Maximally aggressive respiratory, vasopressor and blood product support</li> </ul> <p>If <b>vital signs are worse than estimated or measured blood loss:</b> possible uterine rupture or broad ligament tear with internal bleeding; <b>move to laparotomy</b></p> <p><b>Once stabilized:</b> Modified Postpartum management with increased surveillance</p>
<p><b>Re-Evaluate Bleeding and Vital Signs</b>  <b>If cumulative blood loss &gt; 1500ml, &gt; 2 units PRBCs given, VS unstable or suspicion for DIC,</b>  <b>proceed to STAGE 3</b></p>		

<b>STAGE 3: OB Hemorrhage</b> Cumulative blood loss > 1500ml, > 2 units PRBCs given, VS unstable or suspicion for DIC		
MOBILIZE	ACT	THINK
<p><b>Nurse or Physician:</b></p> <input type="checkbox"/> Activate Massive Hemorrhage Protocol	<p><b>Establish team leadership and assign roles</b></p> <p><b>Team leader</b> (OB physician + OB anesthesiologist, anesthesiologist and/or perinatologist and/or intensivist):</p> <input type="checkbox"/> <b>Order Massive Hemorrhage Pack</b> (RBCs + FFP + 1 apheresis pack PLTS—see note in right column) <input type="checkbox"/> <b>Move to OR</b> if not already there	<p><b>Selective Embolization (IR)</b></p> <p><b>Interventions based on etiology not yet completed</b></p> <p><b>Prevent hypothermia, acidemia</b></p> <p><b>Conservative or Definitive Surgery:</b></p> <ul style="list-style-type: none"> <li>• Uterine Artery Ligation</li> <li>• Hysterectomy</li> </ul>
<p>PHONE #: _____</p> <p><b>Charge Nurse or designee:</b></p> <input type="checkbox"/> Notify advanced Gyn surgeon (e.g. Gyn Oncologist)	<input type="checkbox"/> Repeat CBC/PLTS, Coag Panel II STAT and Chem 12 panel q 30-60 min	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>For Resuscitation:</b></p> <p><b>Aggressively Transfuse</b></p> <p><b>Based on Vital Signs, Blood Loss</b></p> <p><b>After the first 2 units of PRBCs use</b></p> <p><b>Near equal FFP and RBC for massive hemorrhage:</b></p> <p><b>4-6 PRBCs: 4 FFP: 1 apheresis Platelets</b></p> </div>
<input type="checkbox"/> Notify adult intensivist	<p><b>Anesthesiologist</b> (as indicated):</p> <input type="checkbox"/> Arterial blood gases	<p><b>Unresponsive Coagulopathy:</b></p> <ul style="list-style-type: none"> <li>• Role of rFactor VIIa is very controversial. After 8-10 units PRBCs and coagulation factor replacement with ongoing hemorrhage, may consider risk/benefit of rFactor VIIa in consultation with hematologist or trauma surgeon</li> </ul>
<input type="checkbox"/> Call-in second anesthesiologist	<input type="checkbox"/> Central hemodynamic monitoring	<p><b>Once Stabilized:</b> Modified Postpartum Management with increased surveillance; consider ICU</p>
<input type="checkbox"/> Call-in OR staff	<input type="checkbox"/> CVP or PA line	
<input type="checkbox"/> Ensure hemorrhage cart available at the patient's location	<input type="checkbox"/> Arterial line	
<input type="checkbox"/> Reassign staff as needed	<input type="checkbox"/> Vasopressor support	
<input type="checkbox"/> Call-in supervisor, CNS, or manager	<input type="checkbox"/> Intubation	
<input type="checkbox"/> Continue OB Hemorrhage Record (In OR, anesthesiologist will assess and document VS)	<input type="checkbox"/> Calcium replacement	
<input type="checkbox"/> If transfer considered, notify ICU	<input type="checkbox"/> Electrolyte monitoring	
<p><b>Blood Bank:</b></p> <input type="checkbox"/> Prepare to issue additional blood products as needed – <b>stay ahead</b>	<p><b>Primary nurse:</b></p> <input type="checkbox"/> Announce VS and cumulative measured blood loss q 5-10 minutes	
	<input type="checkbox"/> Apply upper body warming blanket if feasible	
	<input type="checkbox"/> Use fluid warmer and/or rapid infuser for fluid & blood product administration	
	<input type="checkbox"/> Apply sequential compression stockings to lower extremities	
	<input type="checkbox"/> Circulate in OR	
	<p><b>Second nurse and/or anesthesiologist:</b></p> <input type="checkbox"/> Continue to administer meds, blood products and draw labs, as ordered	
	<p><b>Third Nurse (or charge nurse):</b></p> <input type="checkbox"/> Recorder	