PQCNC

STAGE 1: OB Hemorrhage

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

MOBILIZE

Primary Nurse, Physician or Midwife:

- ☐ Activate OB Hemorrhage Protocol and Checklist

Primary Nurse:

- ☐ Notify obstetrician or midwife (in-house and attending)
- ☐ Notify charge nurse
- ☐ Notify anesthesiologist

Charge Nurse:

- ☐ Assist primary nurse as needed or assign staff member(s) to help

Patient and Family Support Designee:

- ☐ Initiate Patient and Family Support Checklist for OBH

ACT

Primary Nurse or Designee:

- ☐ 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
- ☐ Apply vigorous fundal massage
- ☐ 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)
- ☐ Vital Signs, including O2 sat & level of consciousness (LOC) q 5 minutes
- ☐ Weigh materials, calculate and **record** cumulative blood loss q 5-15 minutes
- ☐ Administer oxygen to maintain O2 sats at >95%
- ☐ Empty bladder: straight cath or place Foley with urimeter
- ☐ Type and Crossmatch for 2 units Red Blood Cells STAT (if not already done)
- ☐ Keep patient warm

Physician or Midwife:

- ☐ Rule out retained Products of Conception, laceration, hematoma

Surgeon (if cesarean birth and still open)

- ☐ Inspect for uncontrolled bleeding at all levels, esp. broad ligament, posterior uterus, and retained placenta

Patient and Family Support Designee:

- ☐ Introduce yourself and your role to the family
- ☐ Explain to the family what has happened; remain with the family during the event and describe what is happening
- ☐ If patient is stabilized, provide family your contact information in case they need further support

THINK

Consider Potential Etiology:

- Uterine Atony
- Trauma/Laceration
- Retained Placenta
- Amniotic Fluid Embolism
- Uterine Inversion
- Coagulopathy
- Placenta Accreta

Once Stabilized:

- Modified postpartum management with increased surveillance

Patient and Family Support Designee:

- Be in touch with family at least every hour

If Continued Bleeding or Continued Vital Sign Instability and < 1500 mL Cumulative Blood Loss Proceed to STAGE 2

Adapted from: California Department of Public Health, 2014; supported by Title V funds. Developed in partnership with California Maternal Quality Care Collaborative Task Force. Visit www.cmqcc.org for more details.

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STAGE 2: OB Hemorrhage

Continued bleeding or Vital Sign instability, and < 1500 mL cumulative blood loss

MOBILIZE

Primary Nurse or Charge Nurse:

- ☐ Call obstetrician or midwife to bedside
- ☐ Call anesthesiologist
- ☐ Activate Response Team: PHONE #:

  _____
- ☐ Notify blood bank of hemorrhage; order products as directed

Charge Nurse:

- ☐ Notify perinatologist or 2nd OB
- ☐ Bring hemorrhage cart to the patient's location
- ☐ Initiate OB Hemorrhage Record
- ☐ If considering selective embolization, call-in Interventional Radiology Team and second anesthesiologist
- ☐ Notify nursing supervisor
- ☐ Assign single person to communicate with blood bank
- ☐ Assign second attending or clinical nurse specialist as family support person or call medical social work

Patient and Family Support Designee:

- ☐ Continue to provide support as described in the Patient and Family Support Checklist for OBH

ACT

Team Leader (OB Physician or Midwife):

- ☐ Additional uterotonic medication: Hemabate 250 mcg IM [if not contraindicated] **OR** Misoprostol 800 mcg SL
  - Can repeat Hemabate up to 3 times q 20 min; note-75% respond to first dose
- ☐ Continue IV oxytocin and provide additional IV crystalloid solution

Do not delay other interventions (see right column) while waiting for response to medications

- ☐ Bimanual uterine massage
- ☐ Move to OR (if on postpartum unit, move to L&D or OR)
- ☐ Order 2 units PRBCs and bring to the bedside
- ☐ Order labs STAT (CBC/PLTS, Chem 12 panel, Coag Panel II, ABG)
- ☐ **Transfuse PRBCs based on clinical signs** and response, **do not wait** for lab results; consider emergency O-negative transfusion

Primary Nurse or Designee:

- ☐ Establish 2nd large bore IV, at least 18 guage
- ☐ Assess and announce Vital Signs and cumulative blood loss q 5-10 minutes
- ☐ Set up blood administration set and blood warmer for transfusion
- ☐ Administer meds, blood products and draw labs, as ordered
- ☐ Keep patient warm

Second Nurse or Charge Nurse:

- ☐ Place Foley with urimeter (if not already done)
- ☐ Obtain portable light and OB procedure tray or hemorrhage cart
- ☐ Obtain blood products from the blood bank (or send designee)
- ☐ Assist with move to OR (if indicated)

Blood Bank:

- ☐ Determine availability of thawed plasma, fresh frozen plasma, and platelets initiate delivery of platelets if not present on-site
- ☐ Consider thawing 2-4 FFP (takes 30 min), use if transfusing > 2 units PRBCs
- ☐ Prepare for possibility of massive hemorrhage

Patient and Family Support Designee:

- ☐ Remain with family during escalation of care; describe what is happening
- ☐ If patient is moved, explain why and offer to move family to new room away from where hemorrhage took place; explain that the purpose of maintaining soiled linens etc. is to enable accurate measurement of blood loss

THINK

Sequentially advance through procedures and other interventions based on etiology:

Vaginal Birth:

If **trauma (vaginal, cervical or uterine):**

- Visualize and repair

If **retained placenta**:

- D&C

If **uterine atony** or lower uterine segment bleeding:

- Intrauterine Balloon

If **above measures unproductive:**

- Selective embolization (Interventional Radiology if available & adequate experience)

C-Section:

- B-Lynch Suture
- Intrauterine Balloon

If **Uterine Inversion**:

- Anesthesia and uterine relaxation drugs for manual reduction

If **Amniotic Fluid Embolism**:

- Maximally aggressive respiratory, vasopressor and blood product support

If **vital signs are worse than estimated or measured blood loss**: possible uterine rupture or broad ligament tear with internal bleeding; **move to laparotomy**

Once stabilized: Modified Postpartum management with increased surveillance

Patient and Family Support Designee:

- Confirm that the family still has your contact information
- Be in touch with family at least hourly

Re-Evaluate Bleeding and Vital Signs; If Cumulative Blood Loss > 1500ml, > 2 Units PRBCs Given, VS Unstable or Suspicion for DIC, Proceed to STAGE 3

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STAGE 3: OB Hemorrhage

Cumulative blood loss > 1500ml, > 2 units PRBCs given, VS unstable or suspicion for DIC

MOBILIZE

Nurse or Physician:
- ☐ Activate Massive Hemorrhage Protocol

Charge Nurse or Designee:
- ☐ Notify advanced gyn surgeon (e.g. gyn oncologist)
- ☐ Notify adult intensivist
- ☐ Call-in second anesthesiologist
- ☐ Call-in OR staff
- ☐ Ensure hemorrhage cart available at the patient's location
- ☐ Reassign staff as needed
- ☐ Call-in supervisor, CNS, or manager
- ☐ Continue OB Hemorrhage Record (in OR, anesthesiologist will assess and document VS)
- ☐ If transfer considered, notify ICU

Blood Bank:
- ☐ Prepare to issue additional blood products as needed – stay ahead

Patient and Family Support Designee:
- ☐ Continue to provide support as described in the Patient and Family Support Checklist for OBH

ACT

Establish team leadership and assign roles

Team Leader (OB Physician + OB Anesthesiologist, Anesthesiologist and/or Perinatologist and/or Intensivist):
- ☐ **Order Massive Hemorrhage Pack** (RBCs + FFP + 1 apheresis pack PLTS—see note in right column
- ☐ **Move to OR** if not already there
- ☐ Repeat CBC/PLTS, Coag Panel II STAT and Chem 12 panel q 30- 60 min

Anesthesiologist (as indicated):
- ☐ Arterial blood gases
- ☐ Central hemodynamic monitoring
- ☐ CVP or PA line
- ☐ Arterial line
- ☐ Vasopressor support
- ☐ Intubation
- ☐ Calcium replacement
- ☐ Electrolyte monitoring

Primary Nurse:
- ☐ Announce VS and cumulative measured blood loss q 5-10 minutes
- ☐ Apply upper body warming blanket if feasible
- ☐ Use fluid warmer and/or rapid infuser for fluid & blood product administration
- ☐ Apply sequential compression stockings to lower extremities
- ☐ Circulate in OR

Second Nurse and/or Anesthesiologist:
- ☐ Continue to administer meds, blood products and draw labs, as ordered

Third Nurse or Charge Nurse: ☐
- ☐ Recorder

Patient and Family Support Designee:
- ☐ Remain with family during escalation of care, describe what is happening
- ☐ Provide updates to patient on how her baby is doing
- ☐ Offer emotional support by way of a social worker or chaplain

THINK

Selective Embolization (IR)

Interventions based on etiology not yet completed

Prevent hypothermia, academia

Conservative or Definitive Surgery:
- Uterine Artery Ligation
- Hysterectomy

For Resuscitation:
Aggressively Transfuse
Based on Vital Signs, Blood Loss
After the first 2 units of PRBCs use
Near equal FFP and RBC for massive hemorrhage:

4-6 PRBCs: 4 FFP: 1 apheresis Platelets

Unresponsive Coagulopathy:
- Role of rFactor VIIa is very controversial; sfter 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

Once Stabilized:
- Modified postpartum management with increased surveillance; consider ICU; ensure continued patient and family support as outlined in Patient and Family Support Checklist for OBH

Patient and Family Support Designee:
- Act as a liaison between the family and other units in order to provide timely updates

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