Obstetric Hemorrhage Care Guidelines: Checklist Format

STAGE 0: All Births: Prevention & Recognition of OB Hemorrhage

Active Management of Third Stage

- ☐ Oxytocin infusion: 30 units oxytocin/500 ml NS, bolus 250 mL then decrease to 100mL/h; or 10 units IM; do not give oxytocin as IV push
- ☐ Vigorous **fundal** massage for ***at least*** 15 seconds
- ☐ Continuous cord traction

Ongoing Quantitative Evaluation of Blood Loss

- ☐ Using formal methods, such as graduated containers, visual comparisons and weight of blood soaked materials (**1gm = 1ml**), **QBL for all C Sections**

Ongoing Evaluation of Vital Signs and Output

If: Cumulative Blood Loss > 500ml vaginal birth or > 1000ml C/S - 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

UTEROTONIC AGENTS for POSTPARTUM HEMORRHAGE						
Drug	**Dose**	**Route**	**Frequency**	**Side Effects**	**Contraindications**	**Storage**
Pitocin ® (Oxytocin) 10 units/ml	10-40 units per 1000ml, rate titrated to uterine tone	IV infusion	Continuous	Usually none Nausea, vomiting, hyponatremia ('water intoxication') with prolonged IV admin. ↓ BP and ↑ HR with high doses, esp IV push	Hypersensitivity to drug	Room temp
Methergine ® (Methylergonivine) 0.2 mg/ml	0.2 mg	IM (**not** given IV)	-Q 2-4 hrs -If no response after first dose, it is unlikely that additional doses will be of benefit	Nausea, vomiting Severe hypertension, esp. with rapid administration or in patients with HTN or PIH	**Hypertension**, PIH, Heart disease Hypersensitivity to drug **Caution** if multiple doses of ephedrine have been used, may exaggerate hypertensive response w/possible cerebral hemorrhage	Refrigerate Protect from light
Hemabate ® (Carboprost Tromethamine) 250 mcg/ml	250 mcg	IM or intra-myometrial (**not** given IV)	- Q 15-90 min - Not to exceed 8 doses/24hrs - If no responses after 3 doses, it is unlikely that additional doses will be of benefit.	Nausea, vomiting, diarrhea Fever (transient), headache Chills, shivering Hypertension Bronchospasm	Caution in women with hepatic disease, **asthma**, hypertension, active cardiac or pulmonary disease Hypersensitivity to drug	Refrigerate
Cytotec ® (Misoprostol) 200 mcg tablets	800 – 1000mcg	Per rectum (PR)	One time	Nausea, vomiting, diarrhea Shivering, fever (transient) Headache	Rare Known allergy to prostaglandin Hypersensitivity to drug	Room temp

Antifibrinolytic Therapy: Tranexamic Acid – Off label use. Dose: 1gm IVPB, may repeat in 30 minutes, 3gm maximum dose. "Best results if given within 3 hours of onset of bleeding."

STAGE 1: OB Hemorrhage

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

MOBILIZE	ACT	THINK
Primary nurse or Physician to: ☐ Activate OB Hemorrhage Policy and Checklist **Primary nurse** to: ☐ Notify obstetrician (in-house or attending) ☐ Notify L&D charge nurse ☐ Notify anesthesiologist	**Primary nurse**: ☐ Establish IV access if not present, at least 18 gauge ☐ Increase IV fluids rates (Lactated Ringers preferred) and increase Oxytocin rate (250 mL/hour of 30 units/500mL NS); Titrate Oxytocin infusion rate to uterine tone ☐ Continue vigorous fundal massage ☐ Administer Methergine 0.2 mg IM per physician order (if not hypertensive); give once, if no response, move to alternate agent; if good response, may give additional doses q 2 hr ☐ Vital Signs, including O2 sat & level of consciousness (LOC) q 5-15 minutes ☐ Administer oxygen to maintain O2 sats at >95% ☐ Empty bladder: straight cath or place Foley with urimeter ☐ Bair Hugger, keep patient warm ☐ Crossmatch for 2 units PRBC's STAT (if not already done) ☐ Consider hemorrhage pack **Charge Nurse** ☐ Bring Hemorrhage cart and ultrasound machine to the room ☐ Apply Hgb Sat. monitor ☐ Weigh materials, calculate and **record** cumulative blood loss q 5-15 minutes **OB Physician:** ☐ Rule out retained Products of Conception, laceration, hematoma ☐ Consider discontinuing Magnesium Sulfate if applicable ☐ QBL – Constant report ☐ Consider move to OR ☐ If Cesarean section inspect for uncontrolled bleeding at all levels, esp. broad ligament, posterior uterus, and retained placenta	Consider potential etiology: • Uterine atony (80% of hemorrhages) • Trauma/Laceration • Retained placenta • Amniotic Fluid Embolism • Uterine Inversion • Coagulopathy • Placenta Accreta • Uterine Rupture **Once stabilized:** Modified Postpartum management with increased surveillance

If: Continued bleeding or Continued Vital Sign instability,
and < 1500 mL cumulative blood loss proceed to

STAGE 2

STAGE 2: OB Hemorrhage

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

MOBILIZE

Primary nurse (or charge nurse):

- ☐ Call Obstetrician to bedside
- ☐ Call Anesthesiologist to bedside

Charge nurse:

- ☐ Call Operator and ask to activate OB Hemorrhage Beepers. (Notifies Dr Pearse, Lab, ADON, Intensivist, ICU nurse)
- ☐ L&D to fax copy (205-6139) of transfusion requisition to BB and tube original to BB, Station #225 Lab will call Charge nurse for further information if Transfusion requisition not in Lab within 5 minutes.
- ☐ Call M/B charge nurse **#7420**
- ☐ Notify L & D managers, **#7444/7437,7664**
- ☐ Notify Main OR of issue if additional help needed: **PHONE #: 7578** (24-hour nurse)
- ☐ Consider separate room for family

Weekend:

- ☐ Call-in anesthesia backup.

ACT

OB physician

- ☐ Move to OR
- ☐ Additional uterotonic medication: See Pg. 1

DO NOT DELAY OTHER INTERVENTIONS (see right column) while waiting for response to medications

- ☐ Bimanual uterine massage
- ☐ Discontinue Magnesium Sulfate, if not already done

Team Leader (Anesthesiologist)

- ☐ Order labs STAT (CBC/Plts (purple top), CMP (light green top), PT/PTT (blue top), Fibrinogen (blue top), Lactic acid (gray top on ice)
- ☐-Lab to begin prep of OB Hemorrhage pack and to tube up to division 2 units PRBC Stat
- ☐ Set up blood administration set on Rapid Infuser for transfusion
- ☐ **Transfuse PRBCs based on clinical signs** and response, **do not wait** for lab results. Use Rapid Infuser for RBCs and FFP, **NOT** for Platelets or Cryoprecipitate..
- ☐ Bair Hugger

Primary nurse:

- ☐ Establish **2nd large bore IV**, at least 18 gauge and **draw labs**. Maintain adequate fluid volume with Lactated Ringers and adequate uterine tone with oxytocin infusion
- ☐ Assess and announce Vital Signs and cumulative blood loss (with OB input) q 5-10 minutes
- ☐ Administer meds, blood products and draw labs, as ordered (coordinate with Anesthesia)
- ☐ Keep patient warm – Bair Hugger

Second nurse (or Charge Nurse):

- ☐ Assign recorder - Initiates OB Hemorrhage Record
- ☐ Place Foley with **urimeter** (if not already done)
- ☐ Hemorrhage Cart & med kit (if not already in room)
- ☐ Place patient on 3-lead EKG
- ☐ Assign individual to obtain rest of Hemorrhage pack blood products from the Blood Bank

Blood Bank: (Notified by beeper)

- ☐ Determine availability of thawed plasma, fresh frozen plasma, and platelets
- ☐ Begin thawing 4 FFP (takes 20-25 min
- ☐ Send 2 units PRBCs to division Stat per tube system. Prepare rest of hemorrhage pack for pickup by division

THINK

Sequentially advance (MOVE QUICKLY) through procedures and other interventions based on etiology:

Vaginal birth

If **trauma (vaginal, cervical or uterine):**
- Visualize and repair

If **retained placenta**: Bedside Ultrasound
- D&C

If **uterine atony** or lower uterine segment bleeding: Unresponsive to Medications
- Intrauterine Balloon (Bakri, Ebb)

C-section:
- Uterine hemostatic suture, e.g.,B-Lynch Suture, O'Leary, Multiple Squares
- Intrauterine Balloon (Bakri, Ebb)

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

Re-Evaluate Bleeding and Vital Signs
If cumulative blood loss > 1500 ml, > 2 units PRBCs given, VS unstable or suspicion for DIC, proceed to STAGE 3

STAGE 3: OB Hemorrhage

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

MOBILIZE

Charge Nurse or designee:

- ☐ Call-in second anesthesiologist PRN
- ☐ **Consider** notifying advanced GYN surgeon (e.g. Gyn Oncologist, numbers in binder)
- ☐ Continue OB Hemorrhage Record – Recorder to document type of Procedures ie: B Lynch stitch, D&C and the time the procedure is performed. Document continuous QBL in OR
  (In OR, anesthesiologist will assess and document VS, meds, blood products)
- ☐ Consider calling Social Service &/or Chaplain
- ☐ Consider separate room for family
- ☐ Call main OR staff **# 7578 for additional help, as necessary**

Blood Bank:

- ☐ Prepare to issue additional blood products as needed – **stay ahead**
- ☐ Use Lab testing to determine need for
  - **Cryoprecipitate (Goal: fibrinogen >150mg/dl**
  - **Platelets (Goal: Platelets >50,000**

If no improvement move to interventions in THINK column

ACT

Establish team leadership and assign roles

Team leader – Anesthesiologist (with assistance of Intensivist)

- ☐ **Order OB Hemorrhage Pack**
  (RBCs + FFP + 1 pheresis pack PLTS)—see note in right column
- ☐ **Move to main OR if not already there**
- ☐ Bair Hugger
- ☐ Repeat CBC/PLTS, CMP, PT/PTT, Fibrinogen, Lactic acid and ABG (blood gas kit) STAT q 30-60 min
- ☐ Arterial blood gases
- ☐ Arterial line PRN for monitoring and blood draws
- ☐ Vasopressor support PRN
- ☐ Intubation PRN

Obstetrician

- ☐ Continue with measures to identify source of and stop bleeding
- ☐ QBL – Constant Report to Charge Nurse

Primary nurse:

- ☐ Announce VS and cumulative measured blood loss q 5-10 minutes
- ☐ Apply upper body warming blanket (Bair Hugger)
- ☐ Use fluid warmer and/or rapid infuser for fluid & blood product administration
- ☐ Apply sequential compression device to lower extremities, if possible
- ☐ Circulate in OR or assist as applicable

Second nurse and/or anesthesiologist:

- ☐ Continue to administer meds, blood products and draw labs, as ordered

Third Nurse (or charge nurse):

- ☐ Recorder: Document type of Procedures performed ie: B Lynch stitch, D&C and the time the procedure is performed. Document continuous QBL in OR

ICU Nurse

- ☐ Assist Intensivist/Anesthesiologist with placement of Arterial line. Assist with blood administration via Rapid Infuser

THINK

- **Interventions based on etiology not yet completed**
- **Prevent hypothermia, Acidemia**
- **Possible Calcium replacement**

Conservative or Definitive Surgery:

- Uterine Artery Ligation
- Hysterectomy

For Resuscitation:
Aggressively Transfuse
Based on Vital Signs, Blood Loss

KEY: HIGH RATIO of FFP to RBC
Either: 6:4:1 PRBCs: FFP: Platelets
Or: 4:4:1 PRBCs: FFP: Platelets

Unresponsive Coagulopathy:

- After 8-10 units PRBCs and coagulation factor replacement may consider risk/benefit of rFactor VIIa (requires Intensivist consult). Policy & order set in binder
- **Antifibrinolytic Therapy:**
  1. Tranexamic Acid – Off label use
  2. Dose: 1 gm IVPB, may repeat in 30 minutes, 3 gm maximum dose

Once Stabilized: Modified Postpartum Management; transfer to ICU

- OB and Anesthesia to provide Face to Face Handoff in ICU.

Debrief

- All staff members meet. OB to run meeting. Charge nurse records discussion
  1. What happened timeline
  2. What could have been done better

BLOOD PRODUCTS	
Packed Red Blood Cells (PRBC) *(approx. 35-40 min. for crossmatch—assuming no sample is in the lab and assuming no antibodies are present)* Transfuse O Negative blood if you cannot wait **Use Rapid Infuser** **Can be returned for reissue if handled properly. ie: Primary container not opened, maintained at proper temperature (1-10C) within 10 minutes of issuing and the temperature indicator attached to the product show acceptable result. At least one sealed segment remains integrally attached to the container. Documentation indicates the PRBC has been inspected and is acceptable for reissue.**	Best first-line product for blood loss 1 unit = 350 ml volume If antibody positive, may take 1-24 hrs. for crossmatch 1 unit=350 ml volume and typically increases Hct by 3% or Hg by 1 mg/dl
Fresh Frozen Plasma (FFP) *(approx. 20-25 min. to thaw for release)* **May Use Rapid Infuser** **Good for 24 hours after thawing. If thawed give to pt in lieu of crystalloid**	Highly desired if >2 units PRBCs given, or for prolonged PT, aPTT >1.5x control 1 unit = 250 ml volume and typically increases Fibrinogen by 10mg/dL **Must be ABO compatible**
Platelets (PLTS) *4-6 units usually immediately available* **Do NOT use Rapid Infuser** **Can be returned for reissue. Good for 1-3 days after issue if not agitated**	Priority for women with Platelets <50,000 Single-donor Apheresis unit (= 6 units of platelet concentrates) provides 40-50k transient increase in platelets
Cryoprecipitate (CRYO) *(approx.40 min. to thaw for release)* **Do NOT use Rapid Infuser** **Good for 6 hours after issue**	Priority for women with Fibrinogen levels <150 10 unit pack typically raises Fibrinogen 80-100mg/dL Best for DIC with low fibrinogen and don't need volume replacement Caution: 10 units come from 10 different donors, so infection risk is proportionate.