# Identify Risk on Admission

## Stage 0

### Low Risk:
- No previous uterine incision
- Singleton Pregnancy
- ≤ 4 previous vaginal births
- No known bleeding disorder
- No history of PPH

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<th>Hold Specimen</th>
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### Medium Risk:
- Prior c/s or uterine surgery
- Multiple gestation
- > 4 previous vaginal births
- Chorioamnionitis
- History of previous PPH
- Large uterine fibroids

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### High Risk:
- Placenta Previa, or low lying
- Suspected accreta or percreta
- HCT < 30 AND other risk factors
- Platelets < 100,000
- Active bleeding on admit
- Known coagulopathy

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## Stage 1

### Action
- Active management with oxytocin infusion of 10-40 units/500-1000 mL titrated; or 10 units IM
- Quantitative evaluation of cumulative blood loss: use of graduated containers, visual comparisons, and weighing blood soaked materials after delivery of placenta. 1 gm = 1 mL
- Ongoing evaluation of vital signs per hospital protocol; more if needed per patient condition.

### Mobilize
- Notify OB/CNM
- Notify Charge RN
- Notify Anesthesia provider

### Actions
- Establish 16g IV
- Infuse oxytocin 500mL/hr (10-40 units/500-1000 mL)
- Vigorous fundal massage
- Administer 2nd uterotonic
- Vital signs including O2 sat q 5 minutes
- Weigh and calculate blood loss
- Administer O2 to keep sats > 95%
- Empty bladder – Foley with urimeter
- Type and Cross for 2 units PRBCs
- Keep patient warm

### Consider potential etiologies: atony, trauma, laceration, retained placenta, AFE, inversion, coagulopathy, accreta

### Proceed to STAGE 1 if:
- Continued bleeding or continued VS instability, & < 1500 mL cumulative blood loss

### Proceed to STAGE 2 if:
- Continued bleeding or continued VS instability, & < 1500 mL cumulative blood loss

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This project was developed by RPPC Region 2, Northeastern California Perinatal Outreach Program (NCPOP) with Title V funding through the CDPH/MCAH, 2010. Adapted with permission from the California Department of Public Health Toolkit: “Improving the Health Care Response to Obstetric Hemorrhage” by Lyndon A, Lagrew D, Shields L, et al and the California Maternal Quality Care Collaborative, 2010. Funding for development of the toolkit and this poster was provided by the federal Title V block grant from the California Maternal, Child and Adolescent Health Division. (Updated 5/2014 for v 2.0)
### Stage 2

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

#### Mobilize
- OB/CNM at bedside; 2nd OB or perinatologist & anesthesiologist called to assist;
- Charge nurse: assign recorder and runner, notify nursing supervisor, call radiology to prepare for IR if available, and call for second anesthesiologist
- Notify Rapid Response Team
- Assign a 2nd RN to communicate with bank and offer family support

#### Actions
- Prepare for procedures/interventions based on etiology for: balloon, selective embolization with IR (surgery), Foley (trauma), B-lynch suture for C/S, etc.
- Proceed to STAGE 3 if:
  - still bleeding, cumulative blood loss > 1500 mL, > 3 units PRBCs given, VS unstable or suspicion for DIC

**NOTE:**
- Selective Embolization (IR)
- Interventions based on etiology from previous stage not yet completed; prevent hypothermia, acidemia, and hypocalcemia
- Surgery: uterine artery ligation or hysterectomy
- For resuscitation: aggressively transfuse based on VS and blood loss.

**After first 2 units PRBC, near equal FFP and PRBC for massive hemorrhage**

4-6 PRBC:4FFP:1 apheresis platelets

- Once stable: modify postpartum management consider ICU

### Stage 3

**Cumulative blood loss > 1500 mL, > 2 U PRBCs given, VS unstable or suspect DIC**

#### Mobilize
- Activate Massive Transfusion Protocol
- Notify GYN/Onc Surgeon
- Call in OR staff (anesthesia assist)
- Notify GYN/Onc Surgeon
- Blood bank to stay ahead of blood products
- Platelet (PLTs)
- Cryoprecipitate (CRYO)
- Fresh Frozen Plasma (FFP)
- Packed Red Blood Cells (PRBCs)

**Actions**
- Announce VS and cumulative blood loss
- Assist anesthesiologist with air line, PA or CVP line, or intubation.
- Use fluid warmer and/or rapid infuser
- Keep patient warm.
- Apply sequential compression stockings to lower extremities.
- Repeat labs q 30-60 minutes.
- Keep patient warm.
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### Blood Products

**Packed Red Blood Cells (PRBCs)**
- Best first line product
- 1 unit = 200 mL volume
- If antibody positive, may take 1-24 hrs for crossmatch

**Fresh Frozen Plasma (FFP)**
- Approximately 35-45 min to thaw
- Highly desired if > 2 units PRBCs given, or for prolonged PT, PTT
- 1 unit = 18 mL volume

**Platelets (PLTs)**
- Priority for women with platelets < 50,000
- Single—donor apheresis unit (= 6 units of platelet concentrates) provides 40-50 K transient increase in platelets

**Cryoprecipitate (CRYO)**
- Approximately 35-45 min to thaw
- Priority for women with Fibrinogen levels < 80
- 10 unit pack raises Fibrinogen 80-100 mg/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
- Surgeries: uterine artery ligation or hysterectomy
- For resuscitation: aggressively transfuse based on VS and blood loss.

### Uterotonic Agents

**Pitocin (Oxytocin)**
- 10-40 units per 500-1000 ml, titrated to uterine tone

**Methergine (Methylergonivine)**
- 0.2 mg/ml
- 0.2 mg

**Hemabate (15-methyl PG F2a)**
- 250 mcg/ml
- 250 mcg

**Cytotec 100 or 200 mcg tablets**
- 600-800 mcg