Implementing Quantification of Blood Loss

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Executive Director, Institute for Perinatal Quality Improvement (PQI)
Disclosures for Debra Bingham and Sherrie Burkholder, MHA, MSN, RNC-OB, C-EFM

Debra Bingham is the Executive Director of the Institute for Perinatal Quality Improvement and is a consultant for the:

- National Perinatal Information Center
- Association of Women’s Health, Obstetric and Neonatal Nurses.

- I will not discuss any off-label use/or investigational use in my presentation.
17 Year Research to Action Gap

“It now takes an average of 17 years for new knowledge generated by randomized controlled trials to be incorporated into practice, and even then application is highly uneven.”

The mission of the Institute for Perinatal Quality Improvement (PQI) is to **expand the use of improvement science** in order to eliminate preventable perinatal morbidity and mortality and end perinatal racial and ethnic disparities.
QI Saves Lives!

www.perinatalQI.org
After participation in this presentation, you should have an increased knowledge and enhanced competence to...

- Describe why the national recommendation is to measure cumulative blood loss.

- Discuss implementations tips for quantifying of blood loss.
Quality Improvement is the Responsibility of All Health Care Providers

“QI is an ongoing process undertaken as a consequence of health care providers’ responsibility to serve their patients’ interests.”

Trends in Maternal Morbidity and Mortality
Maternal Mortality Rate, California and United States; 1999-2013

HP 2020 Objective – 11.4 Deaths per 100,000 Live Births

Leading Causes of Maternal Mortality Worldwide

- Hemorrhage
- Hypertension

In the United States the leading causes of preventable pregnancy-related deaths are:
  - Hemorrhage
  - Hypertension
  - Thromboembolism
  - Sepsis
• In 2006, obstetric hemorrhage affected 124,708 (2.9%) of all women who gave birth in the United States

• Obstetric hemorrhage is a major cause of preventable maternal mortality


Obstetric Hemorrhage-Related Maternal Mortality is the Tip of the Iceberg
1998-1999 compared to 2008-2009

- 75% increase in severe maternal complications
- 183% increase in blood transfusions

54-93% of hemorrhage-related deaths were preventable!


# Etiology of Postpartum Hemorrhage (n=26,175)

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Percentage</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delayed (&gt;24 hours after delivery)</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Retained Placenta</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>Uterine Atony</td>
<td>77.8</td>
<td></td>
</tr>
</tbody>
</table>
Baseline Assessment

Postpartum Hemorrhage Preparedness Elements Vary Among Hospitals in New Jersey and Georgia

Debra Bingham, Benjamin Scheich, Renée Byfield, Barbara Wilson, and Brian T. Bateman

For every 10% increase in the total percentage of African American women who gave birth, there was a decrease of one preparedness element.

Women die because they do not receive early, effective and aggressive lifesaving treatments.

National Partnership for Patient Safety
Maternal Safety Bundles

“What every birthing facility
in the U.S. should have...”
Council on Patient Safety in Women’s Health Care Bundles

www.safehealthcareforeverywoman.org

Dr. Bingham helped form the Council and was the Vice Chair and Chair of the Council
Council on Patient Safety
Maternal Bundles

- Maternal Mental Health: Depression and Anxiety
- Obstetric Hemorrhage
- Maternal Venous Thromboembolism
- Severe Hypertension in Pregnancy
- Safe Reduction of Primary Cesarean Birth
- Support after a Severe Maternal Event
- Reduction of Peripartum Racial/Ethnic Disparities
- Severe Maternal Morbidity Review
- Postpartum Care Basics for Maternal Safety: From Birth to the Comprehensive Postpartum Visit
Safety Bundles
Recommendations:

• Hold Team Huddles
• Debrief After Events
• Run Simulation Drills

“What every birthing facility in the U.S. should have…”
Obstetric Hemorrhage

**READINESS**

Every unit
- Hemorrhage cart with supplies, checklist, and instruction cards for intrauterine balloons and compressions stitches
- Immediate access to hemorrhage medications (kit or equivalent)
- Establish a response team - who to call when help is needed (blood bank, advanced gynecologic surgery, other support and tertiary services)
- Establish massive and emergency release transfusion protocols (type-O negative/uncrossmatched)
- Unit education on protocols, unit-based drills (with post-drill debriefs)

**RECOGNITION & PREVENTION**

Every patient
- Assessment of hemorrhage risk (prenatal, on admission, and at other appropriate times)
- Measurement of cumulative blood loss (formal, as quantitative as possible)
- Active management of the 3rd stage of labor (department-wide protocol)

**RESPONSE**

Every hemorrhage
- Unit-standard, stage-based, obstetric hemorrhage emergency management plan with checklists
- Support program for patients, families, and staff for all significant hemorrhages

**REPORTING/SYSTEMS LEARNING**

Every unit
- Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities
- Multidisciplinary review of serious hemorrhages for systems issues
- Monitor outcomes and process metrics in perinatal quality improvement (QI) committee
Implementing the Obstetric Hemorrhage Patient Safety Bundle
Quality Improvement
Process Models

• Plan-Do-Study-Act

• MAP-IT – My favorite
  – Mobilize
  – Assess
  – Plan
  – Implement
  – Track

Have a Plan – Be Systematic
MAP-IT is a QI Process Model
Mobilize – Assess – Plan – Implement – Track (MAP-IT)

Perform Small Tests of Change
Learn then Adjust (as often as needed)

Mobilize
Assess
Plan
Implement
Track

Mobilize
Assess
Plan
Implement
Track

Mobilize
Assess
Plan
Implement
Track

MAP-IT Cycle 1
MAP-IT Cycle 2
MAP-IT Cycle 3

QI Saves Lives!
www.perinatalQI.org
Quality Improvement is like climbing a spiral staircase

Each cycle gets you closer to your goal
AWHONN PPH Project Wrap-Up Video

www.pphproject.org
MOBILIZE
Start with a Small Committed Group of Clinicians

"Never doubt that a small group of thoughtful committed citizens can change the world. Indeed, it is the only thing that ever has."

Margaret Mead, Anthropologist
Mobilize - Change Champions

Explain **WHY** the change is needed

A confident change champion feels they are up to the task and will keep trying

Composite Case Example: 24yo G2 P1 at 38 weeks gestation induced because she was “tired of being pregnant”

- After 8hr active phase and 2 hour 2\textsuperscript{nd} stage, she gave birth, NSVD, infant weighed 8lb 6oz
- After placental delivery she had an episode of atony that firmed with massage. A second episode responded to IM methergine and the physician went home (now 1am)
- The nurses called the physician 30 min later to report more bleeding and further methergine was ordered
- 60min after the call, the physician performed a D&C with minimal return of tissue. More methergine was given

Composite Case Example: 24yo G2 P1 at 38 weeks gestation induced because she was “tired of being pregnant”, cont.

- 45 min later a second D&C was performed, again with minimal returns. EBL now >2,000
- Delays in blood transfusion because of inability to find proper tubing
- Anesthesia is delayed, but a second IV started for more crystalloid. VS now markedly abnormal, P=144, BP 80/30
- One further Methergine given and patient taken for a 3rd D&C; received 2u PRBCs
- After completion, she had a cardiac arrest from hypovolemia/hypoxia and was taken to the ICU when she succumbed 3 hours later

What are the Quality Improvement Opportunities Identified for Reducing Maternal Mortality and Morbidity from OB Hemorrhage?
ASSESS
Prioritize Which Changes are Most Needed at Your Hospital

- Perform Risk Assessments on Prenatal, Admission, Pre-Birth, and Post-Birth
- Implement Quantification of Blood Loss
- Implement an obstetric hemorrhage algorithm based on measurement of cumulative blood loss
- Debrief after all Stage 2 and 3 hemorrhages
- Huddles for high-risk women
- Run Obstetric Simulation Drills
CMQCC’s Risk Assessment Tool

<table>
<thead>
<tr>
<th>Obstetric Hemorrhage Emergency Management Plan: Checklist Format</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 0: All Births – Prevention &amp; Recognition of OB Hemorrhage</strong></td>
</tr>
<tr>
<td><strong>Prenatal Assessment &amp; Planning</strong></td>
</tr>
<tr>
<td>Identify and prepare for patients with special considerations: Placenta Previa/Accreta, Bleeding Disorder, or those who Decline Blood Products</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td><strong>Admission Assessment &amp; Planning</strong></td>
</tr>
<tr>
<td>Verify Type &amp; Antibody Screen from prenatal record</td>
</tr>
<tr>
<td>If not available,</td>
</tr>
<tr>
<td>□ Order Type &amp; Screen (lab will notify if 2nd specimen needed for confirmation)</td>
</tr>
<tr>
<td>If prenatal or current antibody screen positive (if not low level anti-D from Rho-GAM),</td>
</tr>
<tr>
<td>□ Type &amp; Crossmatch 2 units PRBCs</td>
</tr>
<tr>
<td>All other patients,</td>
</tr>
<tr>
<td>□ Send specimen to blood bank</td>
</tr>
<tr>
<td><strong>Ongoing Risk Assessment</strong></td>
</tr>
<tr>
<td>□ Evaluate for Risk Factors on admission, throughout labor, and postpartum. (At every handoff)</td>
</tr>
<tr>
<td>If medium risk</td>
</tr>
<tr>
<td>□ Order Type &amp; Screen</td>
</tr>
<tr>
<td>□ Review Hemorrhage Protocol</td>
</tr>
<tr>
<td>If high risk</td>
</tr>
<tr>
<td>□ Order Type &amp; Crossmatch 2 units PRBCs</td>
</tr>
<tr>
<td>□ Review Hemorrhage Protocol</td>
</tr>
<tr>
<td>□ Notify OB Anesthesia</td>
</tr>
<tr>
<td>Identify women who may decline transfusion</td>
</tr>
<tr>
<td>□ Notify OB provider for plan of care</td>
</tr>
<tr>
<td>□ Early consult with OB anesthesiologist</td>
</tr>
<tr>
<td>□ Review Consent Form</td>
</tr>
<tr>
<td>□ Evaluate for development of additional risk factors in labor:</td>
</tr>
<tr>
<td>□ Prolonged 2nd Stage labor</td>
</tr>
<tr>
<td>□ Prolonged oxytocin use</td>
</tr>
<tr>
<td>□ Active bleeding</td>
</tr>
<tr>
<td>□ Chorioamnionitis</td>
</tr>
<tr>
<td>□ Magnesium sulfate treatment</td>
</tr>
<tr>
<td>□ Increase Risk level (see below) and convert to Type &amp; Screen or Type &amp; Crossmatch</td>
</tr>
<tr>
<td>□ Treat multiple risk factors as High Risk</td>
</tr>
<tr>
<td>□ Monitor women postpartum for increased bleeding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admission Hemorrhage Risk Factor Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low (Clot only)</strong></td>
</tr>
<tr>
<td>No previous uterine incision</td>
</tr>
<tr>
<td>Singleton pregnancy</td>
</tr>
<tr>
<td>≤ 4 previous vaginal births</td>
</tr>
<tr>
<td>No known bleeding disorder</td>
</tr>
<tr>
<td>No history of PPH</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Births – Prophylactic Oxytocin, Quantitative Evaluation of Blood Loss, &amp; Close Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Management of Third Stage</strong></td>
</tr>
<tr>
<td>□ 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</td>
</tr>
<tr>
<td><strong>Ongoing Quantitative Evaluation of Blood Loss</strong></td>
</tr>
<tr>
<td>□ Using formal methods, such as graduated containers, visual comparisons and weight of blood soaked materials (1 gm = 1 ml)</td>
</tr>
<tr>
<td><strong>Ongoing Evaluation of Vital Signs</strong></td>
</tr>
<tr>
<td>If: Cumulative Blood Loss &gt; 500ml vaginal birth or &gt; 1000ml C/S with continued bleeding -OR- Vital signs &gt; 15% change or HR &gt; 110, BP ≤ 85/45, O2 sat &lt; 95% -OR- Increased bleeding during recovery or postpartum, proceed to STAGE 1</td>
</tr>
</tbody>
</table>

Lyndon, A., Lagrew, D., Shields, L.E., Main, E., & Cape, V.. (2015). Improving health care response to obstetric hemorrhage. (California Maternal Quality Care Collaborative Toolkit to Transform Maternity Care under contract #11-10006 with the California Department of Public Health; Maternal, and Adolescent Health Division.
## AWHONN’s Risk Assessment Tool

### POSTPARTUM HEMORRHAGE (PPH) RISK ASSESSMENT TABLE • 1.0

#### RISK CATEGORY: PRE-BIRTH

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Medium Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCLUDE ADMISSION AND PRE-BIRTH LOW RISK FACTORS</td>
<td>INCLUDE ADMISSION AND PRE-BIRTH MEDIUM RISK FACTORS</td>
<td>INCLUDE ADMISSION AND PRE-BIRTH HIGH RISK FACTORS</td>
</tr>
<tr>
<td>- No known bleeding disorder</td>
<td>- Large uterine fibroids</td>
<td>- Has 2 or more medium risk factors</td>
</tr>
<tr>
<td>- No previous uterine incision</td>
<td>- Operative vaginal delivery</td>
<td>- Active bleeding</td>
</tr>
<tr>
<td>- No history of PPH</td>
<td>- 3rd or 4th degree perineal laceration</td>
<td>- Difficult placental extraction</td>
</tr>
<tr>
<td>- Vaginal or cervical laceration and/or mediolateral episiotomy</td>
<td>- Vaginal or cervical laceration and/or mediolateral episiotomy</td>
<td>- Concealed abruption</td>
</tr>
<tr>
<td>- Cesarean birth</td>
<td>- Cesarean birth</td>
<td>- Uterine inversion</td>
</tr>
<tr>
<td>- Precipitous delivery</td>
<td>- Precipitous delivery</td>
<td>- Shoulder dystocia</td>
</tr>
</tbody>
</table>

### Anticipatory Interventions

Continue to monitor patient for any change in risk factors after birth and implement anticipatory interventions as indicated.

<table>
<thead>
<tr>
<th>Blood Bank Order: Change blood bank orders as needed if risk category changes</th>
<th>Blood Bank Order: Change blood bank orders as needed if risk category changes</th>
<th>Blood Bank Order: Change blood bank orders as needed if risk category changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Confirm Type and Screen</td>
<td>- Confirm Type and Screen</td>
<td>- Confirm Type and Screen (See Clinical Guidelines)</td>
</tr>
<tr>
<td>- Utilize scales and calibrated equipment to weigh and measure maternal blood loss for every birth</td>
<td>- Utilize scales and calibrated equipment to weigh and measure maternal blood loss for every birth</td>
<td>- Utilize scales and calibrated equipment to quantify cumulative maternal blood loss for every birth</td>
</tr>
<tr>
<td>- Notify the Provider and the Charge Nurse</td>
<td>- Notify the Provider and the Charge Nurse</td>
<td>- Notify the Provider and the Charge Nurse and obtain additional nursing personnel</td>
</tr>
<tr>
<td>- Heightened postpartum assessment surveillance</td>
<td>- Heightened postpartum assessment surveillance</td>
<td>- Heightened postpartum assessment surveillance</td>
</tr>
<tr>
<td>- Utilize scales and calibrated equipment to quantify cumulative maternal blood loss for every birth</td>
<td>- Utilize scales and calibrated equipment to quantify cumulative maternal blood loss for every birth</td>
<td>- Utilize scales and calibrated equipment to quantify cumulative maternal blood loss for every birth</td>
</tr>
<tr>
<td>- Maintain IV access</td>
<td>- Maintain IV access</td>
<td>- Insertion of a second large bore IV is optional</td>
</tr>
<tr>
<td>- Confirm availability of Anesthesia Provider</td>
<td>- Confirm availability of Anesthesia Provider</td>
<td>- Notify Anesthesia Provider to come to the unit</td>
</tr>
<tr>
<td>- Ensure immediate availability of uterotonics (oxytocin, Methergine, Hemabate, misoprostol)</td>
<td>- Check and ensure immediate availability of uterotonics (oxytocin, Methergine, Hemabate, misoprostol) and supplies for administration (such as syringes, needles, alcohol swabs)</td>
<td>- Check and ensure immediate availability of uterotonics (oxytocin, Methergine, Hemabate, misoprostol) and supplies for administration (such as syringes, needles, alcohol swabs)</td>
</tr>
<tr>
<td>- Ensure the hemorrhage cart with supplies is near the patient’s room</td>
<td>- Ensure the hemorrhage cart with supplies is near the patient’s room</td>
<td>- Ensure the hemorrhage cart with supplies is near the patient’s room</td>
</tr>
<tr>
<td>- Ensure OR and staff available</td>
<td>- Ensure OR and staff available</td>
<td>- Consider notifying team to prepare the OR</td>
</tr>
<tr>
<td>- Consider notifying Interventional Radiology if available in facility</td>
<td>- Consider notifying Interventional Radiology if available in facility</td>
<td>- Consider notifying Interventional Radiology if available in facility</td>
</tr>
</tbody>
</table>
Use SMART Objectives

• **Specific**
• **Measurable**
• **Achievable**
• **Realistic**
• **Time Specific**
Set A Goal or Quality Improvement Aim Statement

• By April 2018 the nurses and physicians at Fabulous Hospital will perform hemorrhage risk assessments on admission, pre-birth, and post-birth, quantify blood loss at every birth, use actual blood loss to determine actions, participate in drills, and debrief after all stage 2 and 3 hemorrhages

• We will track our progress by....
Persuasion

- Focus on the WHY before telling people WHAT, WHO, and HOW
- Let others help work out the HOW
- Plan vicarious experiences of self-discovery
- Try small tests of change

Run a simulation drill to demonstrate how inaccurate estimating blood loss is
Quantification of Blood Loss Methods

- Quantification of blood loss is a formal measurement using weighing and blood collection devices to determine the actual amount of blood loss.
- Methods to quantify blood loss, such as weighing, are significantly more accurate than EBL (AI Kadri et al., 2011).
- The use of a calibrated drape had an error rate of less than 15% (Toledo et al., 2007).

Inaccuracy of Visual Estimation of Blood Loss

EBL is common practice in obstetrics, however its inaccuracy has been well established:

- Research from the 1960s have shown errors of both underestimation and overestimation (Brant, 1967; Pritchard, 1965).
- Visual estimation can underestimate actual blood loss by 33 – 50% (Patel et al., 2006).
- With training, clinicians initially improved accuracy with visual estimation but experienced skill decay (Dildy et al., 2004) within 9 months of training completion (Toledo et al., 2012).
- Provider specialty, age, or years of experience are all unrelated to accuracy of visual EBL (Al Kadri et al., 2011; Toledo et al., 2007).

Visual Estimation: Overestimation and Underestimation

- Visual EBL consistently resulted in underestimation of large volumes (Brant, 1967; Duthie et al., 1990; Stafford et al., 2008) of greater than 1000 ml (Stafford et al., 2008)
- With smaller volumes, EBL resulted in overestimation compared to direct measurement (Dildy et al., 2004)
- Inaccurate postpartum blood loss volume measurement has the following consequences
  - **Overestimation** can lead to costly, unnecessary treatments like transfusions
  - **Underestimation** can lead to the delay of life saving hemorrhage interventions

AHRQ Management of Postpartum Hemorrhage Systematic Review: Research Gaps

• “Clearly identifying the trajectory of care, including which interventions were used and the order and timing of interventions.” pg. ES-22

• “Using and clearly reporting objective methods to diagnoses PPH and evaluate management, including accurate measurement of blood loss. Visual estimation of blood loss is too imprecise to be used in research.” pg. ES-23

Quantification of Blood Loss (QBL) Simulation
Make Weighing Easy to Do
Develop a QBL Calculator or Worksheet

<table>
<thead>
<tr>
<th></th>
<th>Wet Weight</th>
<th>Minus Dry Weight</th>
<th>Total mls Blood Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Chux</td>
<td></td>
<td>5 grams</td>
<td></td>
</tr>
<tr>
<td>Vaginal Count Bag+5 laps+2 sponge</td>
<td></td>
<td>1 grams</td>
<td></td>
</tr>
<tr>
<td>1 lap</td>
<td></td>
<td>2 grams</td>
<td></td>
</tr>
<tr>
<td>1 sponge</td>
<td></td>
<td>0.05 grams</td>
<td></td>
</tr>
<tr>
<td>Birth Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large sheet</td>
<td></td>
<td>53 grams</td>
<td></td>
</tr>
<tr>
<td>Immediate PP Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Blood Labor and Delivery Blood Loss</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AWHONN Quantification of Blood Loss YouTube Video

https://www.youtube.com/watch?v=F_ac-aCbEn0&list=UUPrOhL3Od7ZeFDq27ycS00g
Standardized Obstetric Hemorrhage Management: Use an Algorithm

- Everyone use the same definitions
- Stages are based upon the amount of “cumulative measured” blood loss
- Stages outline specific actions
- Teams practice what to do and how to work together
AWHONN’s Algorithm

Get AWHONN’s algorithm through their online education

http://learning.awhonn.org/
Stage 0 Hemorrhage

Definition:
≤500ml vaginal
≤1000ml cesarean

Key Actions:
Active management of the 3rd stage of labor
Stage 1 Hemorrhage

Definition:
>500ml vaginal
>1000ml cesarean

Continued Bleeding?

Key Actions:
Tone
Uterine massage
Uterine Tonics – IV
Oxytocin, Methergine
0.2mg IM, Hemabate
250 mcg IM, Cytotec
800-1000mcg per rectum
Trauma
Tissue or Thrombin
Modify PP care
Anticipatory plan
Stage 2 Hemorrhage

Definition:
1000-1500ml vaginal and cesarean

Continued Bleeding?

Key Actions:
- Tone
- Uterine massage
- Uterine Tonics – IV Oxytocin, Methergine 0.2mg IM, Hemabate 250 mcg IM, Cytotect 800-1000mcg per rectum
- Tamponade Balloon
- Begin Blood Transfusion
- Trauma
- Tissue or Thrombin
- Modify PP care
- PPH Debrief

These need to be added to the Algorithms

Tranexamic Acid
Non-pneumatic Anti-Shock Garment (NASG)
Uterine Balloons
3 Blood Transfusion Processes
Every Nurse Needs to Know

• Routine Blood Transfusions
• Uncrossed Matched Blood
• Massive Transfusion Protocol
Blood Transfusion

• Prevent hypothermia
• Transfuse quickly – start 2 IVs
• Sample Massive Transfusion Protocol:
  – 4 units PRBCs
  – 2 units FFP (thawed)
  – 1 platelet dose (either with every or every other cooler of 4 PRBCs/2FFP)
• Use type-specific blood whenever possible
Tranexamic Acid (TXA)

- An inhibitor of fibrinolysis
- Reduces bleeding in the setting of coagulation abnormalities
- WOMAN trial showed a 30% reduction in the most severe hemorrhages when 1 gram of TXA was administered IV within 3 hours of the diagnosis of an OB Hemorrhage
  - In US we won’t see such a large decrease in maternal mortality

Tranexamic Acid (TXA)

- National Guidance is Pending

- Add around Stage 2 Hemorrhage
  - When considering additional interventions, e.g., Hemabate or compression balloons

- Include in the OB hemorrhage medication kit

- Be cautious of medication confusion because this drug is neurotoxic
Non-pneumatic Anti-Shock Garment
Vital Signs

Warning Signs:
• Systolic BP less than 90 mmHg
• Heart Rate greater than 120 bpm

CAUTION!
• Changes in Vital Signs are a late sign of deterioration
• Do not wait for vital signs to deteriorate before treating
• The absence of abnormal vital signs does not rule out the possibility that significant hemorrhage has occurred.
Stage 3 Hemorrhage

Definition:
>1500ml vaginal and cesarean

Continued Bleeding?
Repeat resuscitation until bleeding is stabilized

Actions:
Tone, Trauma, Tissue
Additional MDs/RNs
B-Lynch suture
Angiographic embolization
Uterine artery ligation
Hysterectomy
Thrombin – Massive
Transfusion Protocol
Replace clotting factors
Coagulopathy FFP & Platelets
Modify PP care
PPH Debrief
B-Lynch Suture

2 Taper Needle Chromic Gut
Establish a culture of huddles and post-event debriefs to identify successes and opportunities.

Example of a Debrief Tool

# Immediate Focused Postpartum Hemorrhage (PPH) Debrief Form

**Date of the event:**

**Form completed by:**

**Type of event:** Please check one:
- Stage 2
- Stage 3

**Description:** A quick focused debrief immediately after an event helps capture important lessons learned and identify areas for needed improvement.

**Clinical Debrief Guidelines:**
1. Conduct a team debrief for ALL stage 2 or 3 postpartum hemorrhages and other emergencies as indicated.
2. Empower all team members who cared for the patient to participate.
3. Keep the debrief short, maximum of 15 min. Be as specific as possible.

**Debrief Attendees:** Indicate the number (s) of team members that attended the debriefing.

<table>
<thead>
<tr>
<th>#</th>
<th>RN debrief attendees</th>
<th>Provider debrief attendees</th>
<th>Anesthesia and Pediatric debrief attendees (MD and RNs)</th>
<th>Support staff debrief attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary RN</td>
<td>Primary MD (MFM, OB, FPS)</td>
<td>Neonatology/Perinatal MD</td>
<td>Unit Secretary/Clerk</td>
</tr>
<tr>
<td>2</td>
<td>Charge RN</td>
<td>Certified Nurse Midwife</td>
<td>Neonatology/Perinatal RN</td>
<td>OB ORP</td>
</tr>
<tr>
<td>3</td>
<td>Other RN</td>
<td>Other</td>
<td>Anesthesia Provider</td>
<td>NICU/Born and Other</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>NICU/Born and Other</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Overall Team Management:** Check all that apply:

**RECONCILIATION**

<table>
<thead>
<tr>
<th>Risk and Hemorrhage Identification</th>
<th>Pediatric</th>
<th>Needs review</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weren't adequate staffing on the unit?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Weren't prompt recognition of the emergency?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**READINESS**

<table>
<thead>
<tr>
<th>Resources and Equipment</th>
<th>Pediatric</th>
<th>Needs review</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were the appropriate analgesics given for the stage of hemorrhage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Were the blood products administered in a timely manner?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Were the blood products available?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RESPONSE**

<table>
<thead>
<tr>
<th>Treatment and Clinical Management</th>
<th>Pediatric</th>
<th>Needs review</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were the team members in a timely manner?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Weren't appropriate clinical decisions falsified per the hemorrhage policy?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Were the additional support obtained in a timely manner?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Team & Family Communication**

1. Clinically meaningful comments or critical information

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3rd Stage of Labor

AWHONN and the Council on Patient Safety in Women’s Health Care recommend oxytocin administration for management of the third stage of labor.

Postpartum Oxytocin Administration Recommendations

- Administer IV oxytocin bolus followed by a total minimum infusion time of 4 hours after birth.
- High risk women will need longer
- Option 1:
  - Oxytocin 20 units in 1 liter normal saline or Lactated Ringer’s solution
  - Initial **bolus** rate 1000 ml/hour for **30 minutes** (10 units)
  - **Maintenance** rate of 125 ml/hour over **3.5 hours** (remaining 10 units)
TRACK
Track Progress

• **Structure**
  – Update policies and procedures
  – Simulation drills
  – Educate clinical team

• **Process**
  – Quantification of Blood loss
  – Risk Assessments

• **Outcomes – with Balancing Measures**
  – ICU admission
  – Blood transfusions
Don’t be afraid to look at your QI data.

Data helps us know what improvements are needed.
START MAP-IT OVER
Perform Small Tests of Change
Learn then Adjust (as often as needed)

Mobilize
Assess
Plan
Implement
Track

Mobilize
Assess
Plan
Implement
Track

Mobilize
Assess
Plan
Implement
Track

MAP-IT Cycle 1

MAP-IT Cycle 2

MAP-IT Cycle 3

QI Saves Lives!
www.perinatalQI.org
Quality Improvement is like climbing a spiral staircase. Each cycle gets you closer to your goal.
Without data QI leaders can go around & around in a circle like a cat chasing her tail.
DISSEMINATION
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Helping perinatal health professionals expand their use of improvement science to eliminate preventable perinatal injuries and deaths.

QI SAVES LIVES!
Learn from others and share your work.
Put your QI Project on the Map!
www.perinatalQI.org
Implementing Perinatal Quality Improvement

www.perinatalQI.org

Conference on February 1, 2018, New York City
Structural changes are the easiest changes to sustain

Dig a ditch and that is where water will flow
QI Saves Lives!

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