Safety Action Series

Obstetric Hemorrhage Patient Safety Bundle (Updated)
Dena Goffman, MD, FACOG, Director of Maternal Safety & Simulation, Division of Maternal-Fetal Medicine at Montefiore Medical Center
Associate Professor, Obstetrics & Gynecology and Women's Health at Albert Einstein College of Medicine

Elliott Main, MD, FACOG, Medical Director, California Maternal Quality Care Collaborative
Chief, Maternal-Fetal Medicine, California Pacific Medical Center
Clinical Professor, Obstetrics & Gynecology, Stanford University
Disclosures

- Dena Goffman, MD, FACOG has no real or perceived conflicts of interest

- Elliott Main, MD, FACOG, has no real or perceived conflicts of interest
Objectives

• Describe the magnitude of the problem
• Take a look at the processes, methods, and tools that were used to develop the Obstetric Hemorrhage Patient Safety bundle
• Provide an overview of bundle components
• Give suggestions for how to effectively implement and utilize the bundle within your organization
• Identify resources to customize for use within your organization
Everyone’s nightmare...
## Maternal Mortality and Severe Morbidity

Approximate distributions, compiled from multiple studies

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Hemorrhage Perspective

• Obstetric hemorrhage affects 2-5% of all births in the United States and is one of the top causes of maternal death (Callaghan et al, 2010; Berg et al, 2010; Bingham & Jones, 2012)

• Nationwide, blood transfusions increased 92% during delivery hospitalizations between 1997 and 2005. (Kuklina et al, 2009)

• Failure to recognize excessive blood loss during childbirth is a leading cause of maternal morbidity and mortality. (The Joint Commission, 2010)

• Women die from obstetric hemorrhage because of a lack of early and effective interventions. (Berg et al. 2005; Della Torre et al. 2011)
Dominance of Provider QI Opportunities: Hemorrhage and Preeclampsia

- California Pregnancy Associated Mortality Reviews
  - Missed triggers/risk factors: abnormal vital signs, pain, altered mental status/lack of planning for at risk patients
  - Underutilization of key medications and treatments
  - Difficulties getting physician to the bedside
  - “Location of care” issues involving Postpartum, ED and PACU

Present in >95% of cases

- University of Illinois Regional Perinatal Network
  - Failure to identify high-risk status
  - Incomplete or inappropriate management

Present in >90% of cases


Addressing the Problem
Development of Patient Safety Bundles
Background - Building Consensus

- ACOG-CDC Maternal Mortality/Severe Morbidity Action Meeting occurred in Atlanta - November 2012
- Participants identified key priorities:

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<td>Severe Hypertension in Pregnancy</td>
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<td>Venous Thromboembolism Prevention in Pregnancy</td>
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<th>Supplemental Patient Safety Bundles</th>
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<tr>
<td>Maternal Early Warning Criteria</td>
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<tr>
<td>Facility Review</td>
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<td>Family and Staff Support</td>
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- 6 multidisciplinary working groups were formed
OB Hemorrhage Bundle Workgroup

Was comprised of the following individuals with representation from obstetrics, nursing, blood banks, and anesthesia:

- Debra Bingham, DrPH, RN – Washington, DC (AWHONN)
- Dena Goffman, MD, FACOG – New York, NY (ACOG)
- Jed Gorlin, MD – Minneapolis, MN (AABB)
- Gary Hankins, MD, FACOG – Galveston, TX (SMFM)
- David Lagrew, MD, FACOG – Long Beach, CA (CMQCC)
- Lisa Kane Low, PhD, CNM – Ann Arbor, MI (ACNM)
- Elliott Main, MD (Chair) – San Francisco, CA (ACOG)
- Barbara Scavone, MD – Chicago, IL (SOAP)
National Partnership for Maternal Safety: Confluence of Multiple Efforts—May 2013 ACOG Annual Clinical Meeting

- CDC / ACOG Maternal Mortality Work Group
- SMFM--M back into MFM Work Group
- AWHONN: Safety Projects
- State Quality Collaboratives
- Merck for Mothers
- Maternal Child Health Branch—M back into MCH
- CDC: Maternal Mortality Reviews and Maternal Morbidity Projects
Current Commentary

The National Partnership for Maternal Safety

Mary E. D’Alton, MD, Elliott K. Main, MD, M. Kathryn Menard, MD, and Barbara S. Levy, MD

Recognition of the need to reduce maternal mortality and morbidity in the United States has led to the creation of the National Partnership for Maternal Safety. This collaborative, broad-based initiative will begin with three priority bundles for the most common preventable causes of maternal death and severe morbidity: obstetric hemorrhage, severe hypertension in pregnancy, and peripartum venous thromboembolism. In addition, three unit-improvement bundles for obstetric services were identified: a structured approach for the recognition of early warning signs and symptoms, structured internal case reviews to identify systems improvement opportunities, and support tools for patients, families, and staff that experience an adverse outcome. This article details the formation of the National Partnership for Maternal Safety and introduces the initial priorities.

(Obstet Gynecol 2014;123:973–7)
DOI: 10.1097/AOG.0000000000000219

issued a Sentinel Alert entitled “Preventing Maternal Death” and proposed various initiatives to decrease maternal mortality including case reporting and review, health care provider education, team training and drills, and thromboembolism prophylaxis.

During the past 2 years, several organizations—including the American College of Obstetricians and Gynecologists (the College), the Centers for Disease Control and Prevention, the Society for Maternal–Fetal Medicine, the Health Resources and Services Administration, the Association of Women’s Health, Obstetric, and Neonatal Nurses, and the American College of Nurse-Midwives—have collaborated to identify priorities for maternal safety. Universal recognition of the need for action to reduce U.S. maternal mortality and morbidity led to the creation of the National Partnership for Maternal Safety. This report outlines a national initiative for every birthing facility
Maternal Safety

- Obstetricians (ACOG/SMFM/ACOOG)
- Nurses (AWHONN)
- Midwives (ACNM)
- Family Practice (AAFP)
- OB Anesthesia (SOAP)
- Blood Banks (AABC)
- Hospitals (AHA, VHA)
- Birthing Centers (AABC)
- Nurse Practitioners (NPWH)
- Safety, Credentials (TJC)
- Perinatal Quality Collaboratives (many)

Federal (MCH-B, CDC, CMS/CMMI)

State (AMCHP, ASTHO, MCH)

Direct Providers

- Federal (MCH-B, CDC, CMS/CMMI)
- State (AMCHP, ASTHO, MCH)
- Direct Providers
  - Obstetricians (ACOG/SMFM/ACOOG)
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Council on Patient Safety: July 2013

Endorsed the concept: 3 Maternal Safety Bundles

“What every birthing facility in the US should have…”

The bundles represent outlines of recommended protocols and materials important to safe care BUT the specific contents and protocols should be individualized to meet local capabilities.

Hemorrhage Safety Bundle details were endorsed by the Council in July 2014
Goals: OB Hemorrhage Patient Safety Bundle

• Improve **readiness** to hemorrhage by identifying standardized protocols (general and massive)

• Improve **recognition** of OB hemorrhage by performing on-going objective quantification of actual blood loss

• Improve **response** to hemorrhage by utilizing unit-standard, stage-based, obstetric hemorrhage emergency management plans with checklists

• Improve **reporting/systems learning** of OB hemorrhage by performing regular on-site multi-professional hemorrhage drills
4 Domains of Patient Safety Bundles

• Readiness
• Recognition and Prevention
• Response
• Reporting/Systems Learning
Patient Safety Bundle

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/unmatched)
- 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) committees

Standardization of health care processes and reduced variation has been shown to improve outcomes and quality of care. The Council on Patient Safety in Women’s Health Care disseminates patient safety bundles to help facilitate the standardization process. This bundle reflects emerging clinical, scientific, and patient safety advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Although the components of a particular bundle may be adapted to local resources, standardization within an institution is strongly encouraged.

The Council on Patient Safety in Women’s Health Care is a broad consortium of organizations across the spectrum of women’s health for the promotion of safe health care for every woman.

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For more information visit the Council’s website at www.safehealthcareforeverywoman.org

July 2014
Readiness - Every Unit

Hemorrhage cart

- Immediately available on L&D, antepartum/postpartum
- Multidisciplinary input for development, stocking and maintenance
- Containing supplies, checklist, and instruction cards for intrauterine balloons and compressions stitches
Readiness - Every Unit

**Immediate access to hemorrhage medications**

- Kit or equivalent
- Considerations include safe storage, error reduction
- Multidisciplinary solution
- Assess time to bedside in drills
Readiness - Every Unit

Establish a response team

• Who/how to call when help is needed
• Anesthesiology, blood bank, pharmacy, advanced gynecologic surgery, additional nursing resources, CCM, IR, main OR, social services, chaplain
Readiness - Every Unit

Protocols for Emergency Release of Blood Products and Massive Transfusion

• Emergency release of either universally compatible or type specific red blood cells
• MTP facilitates rapid dispensing of RBC, FFP and platelets in a predefined ratio
Readiness - Every Unit

Unit education on protocols, regular unit-based drills with debriefs

• Familiarize all team members with entire safety bundle and new management plan
• Identification of correctable systems issues
• Practice team related skills
PATIENT SAFETY BUNDLE

Obstetric Hemorrhage

**RECOGNITION & PREVENTION**

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July 2014
Recognition and Prevention - Every Patient

Assessment of hemorrhage risk

• Antepartum, on admission to Labor and Delivery, later in labor, on transfer to postpartum care
• Allows for anticipatory planning
• Multiple tools available

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Lyndon A, Lagrew D, Shields L, Melsop K, Bingham B, Main E (Eds). Improving Health Care Response to Obstetric Hemorrhage. (California Maternal Quality Care Collaborative Toolkit to Transform Maternity Care) Developed under contract #08-85012 with the California Department of Public Health; Maternal, Child and Adolescent Health Division; Published by the California Maternal Quality Care Collaborative, July 2010.
Recognition and Prevention - Every Patient

**Measurement of cumulative blood loss**

- Formal, accurate measurement (QBL)
  - Calibrated drapes/canisters
  - Weighing blood soaked items and clots
- Cumulative record throughout
Recognition and Prevention - Every Patient

Active management of the 3rd stage of labor

- Departmental protocol for routine oxytocin use in the immediate postpartum period

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Response - Every Hemorrhage

Unit-standard, stage-based, obstetric Hemorrhage emergency management plan

• Triggering events
• Response team and roles
• Communication plan for activation
• Necessary medications/equipment and tools
• Multidisciplinary design
• Drills/debriefs/reviews

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ACOG District II Safe Motherhood Initiative (SMI)
Response - Every Hemorrhage

Support program for patients, families, and staff for all significant hemorrhages

- Traumatic for all
- Resources available

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http://teamstepps.ahrq.gov/
Establishing a culture of huddles and debriefs to identify successes and opportunities for improvement

- Briefs, huddles and debriefs become part of the routine
- Will improve role clarity, situational awareness and utilization of available resources

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Reporting/Systems Learning - Every Unit

**Multidisciplinary review of serious hemorrhages for systems issues**

- Formal meetings to identify any systems issues or breakdowns that influenced the outcome of the event
- Multidisciplinary Perinatal Quality Committee
- Sanctioned and protected

[www.safehealthcareforeverywoman.org](http://www.safehealthcareforeverywoman.org)
Monitor outcomes and process metrics in perinatal quality improvement (QI) committee

- Process measures used to document the frequency that a new approach is used
- Outcome measures used to determine project success
- Goal: reduce the number of hemorrhages that result in severe maternal morbidity or mortality
- Follow internally 4 or more units of RBC and require ICU care
Available Resources

www.safehealthcareforeverywoman.org

Current
• Summary of 13 components (as shown)

Future
For each of the 13 components (downloadable and customizable):
• Introduction
• Available Resources
• Implementation Strategies
• References
Key OB Hemorrhage QI Toolkits: Full of Resources

- [CMQCC.org](http://www.cmqcc.org)
v2.0 available soon

- [ACOG District II Website](http://www.acog.org)
  (thru ACOG website)

- [PPHP Project Website](http://www.pphproject.org)

More resources are coming on-line especially from state Perinatal Collaboratives. Later in the year, the NPMS Bundle will be published with an index to resources.

Slide 39
The Business Case

- Blood products are VERY expensive
- Hemabate is ALSO VERY expensive
- R-Factor VIIa and Uterine Artery Embolization are VERY, VERY expensive

More early interventions
= fewer hemorrhages that reach “massive”
= fewer high level (expensive) interventions
Large-Scale Implementation
How do we reach EVERY hospital in the US?

✓ Engage every Professional organization
  ✓ State-level groups
✓ Engage every Hospital organization
✓ The Joint Commission
✓ CMMI: Hospital Engagement Networks
✓ State Health Departments
✓ State Maternal Quality Collaboratives
✓ Different models of QI (IHI, mentoring, etc)
Key Partners: State Quality Collaboratives

- California Maternal Quality Care Collaborative (CMQCC)
- Ohio Perinatal Quality Collaborative (OPQC)
- New York State Perinatal Quality Collaborative (NYSPOQC)
- Florida Perinatal Quality Collaborative (FPQC)
- Illinois Perinatal Quality Collaborative (ILPQC)
- Northeastern New England Perinatal Quality Improvement Network (NNEPQIN)
- MHA: Obstetrics Keystone Center

Slide 42
Things to Remember

• The development of a multidisciplinary taskforce with physician and nursing champions from OB, anesthesia, and blood bank is critical for success

• Don’t reinvent the wheel – use available resources to help develop and implement your hospital’s individualized response plan

• Simulation is a great way to educate, practice new behaviors and test your infrastructure – make time for it

• Debriefings are critical for continuous quality improvement and effective debriefing is a skill that needs to be taught and practiced
Q&A Session

Press *1 to ask a question

You will enter the question queue
Your line will be unmuted by the operator for your turn

A recording of this presentation will be made available on our website:
www.safehealthcareforeverywoman.org
Next Safety Action Series

*Patient, Staff, and Family Support Following a Severe Maternal Event*

Tuesday, October 14 at 12:30 p.m. Eastern

*Cynthia Chazotte, MD, FACOG*
Professor, Clinical Obstetrics & Gynecology and Women’s Health
Chief, Obstetrical & Perinatal Service
Co-Director, Division of Maternal & Fetal Medicine
Department of Obstetrics & Gynecology and Women’s Health
Albert Einstein College of Medicine

*Christine Morton, PhD*
Research Sociologist
Program Manager
California Maternal Quality Care Collaborative