

# Obstetrical Hemorrhage: The Use of the “4 R’s” to Decrease Maternal Morbidity and Mortality

Bridget Buckaloo MSN, RN

Beebe Healthcare, Lewes DE



## THE ISSUE

More women die in the US from pregnancy-related complications than in any other developed country and is the only industrialized nation with a rising maternal mortality rate. Obstetric hemorrhage is one of the leading causes of maternal mortality and morbidity. The Nine Committees estimated that 63.2% of all pregnancy-related deaths were preventable with 70.0% of hemorrhage deaths estimated to be preventable.

In a call to action, the Council on Patient Safety in Women's Health Care, a consortium of healthcare organizations dedicated to improving maternal outcomes, coordinated the development of the Obstetric Hemorrhage Maternal Safety Bundle. The safety bundle is organized into four domains: Readiness, Recognition and Prevention, Response, and Reporting and System Learning and designed to be adapted to meet the resources available in individual facilities to promote implementation and standardization.

## OBJECTIVE/STRATEGY

Utilize The Alliance for Innovation on Maternal Health (AIM) Obstetric Hemorrhage Patient Safety Bundle's "4 R" approach as a tool to guide improvement in the quality of care delivered and ultimately, enhanced patient outcomes. The 4 R's Included:

### 1. Readiness

- RN/OB provider education- APS GNOSIS (Relias Learning) module on OBH
- Equipped and deployed emergency hemorrhage cart:
  - Standard supplies
  - Instructions and Checklists
  - Emergency medications
- Implementation - Massive Transfusion Protocol
- Scenario-based in-situ simulation with video debriefing utilizing AHRQ TeamSTEPPS and
  - Total of 7 interdisciplinary simulation sessions including OB providers, hospitalists, OB RN's, OR PACU RN's
  - 90% of clinical staff and 70% of physicians trained

### 2. Recognition

- Collaboration with Nursing Informatics to develop OBH Risk Screen
  - Every patient admitted to L&D and other appropriate times
  - Allows anticipatory planning
  - Tool based upon National Benchmarks
- Initiated Quantitative Blood Loss (QBL)
  - Use of calibrated drapes
  - Medical grade scales in all labor rooms
  - Laminated charts with dry weights
  - Cumulative documentation in EMR
- Active management of the 3<sup>rd</sup> stage of labor
- Standardized oxytocin administration in L&D/PACU



### 3. Response

- Implementation of a stage-based OBH protocol with checklist
  - Prompts to transfuse early based upon QBL
  - Prompts to initiate Massive Transfusion protocol
- Development of "Code Crimson" for OBH
  - Treat OBH like a Code Blue
  - Built into the protocol
  - Embedded in hospital Code Policy

### 4. Reporting and Systems Learning

- Monitoring Outcomes - Premier Perinatal Quality Dashboard
- Participation in Statewide Hemorrhage Initiative through the Delaware Perinatal Cooperative
- Multidisciplinary Review of Serious Hemorrhage and Cases with > 4 Units
- Established Culture of Huddles and Debriefs

## OUR TEAM



## SUSTAINABILITY

- On-going OBH simulations/drills
- Implementation of QBL in the OR
- Continued Learning through the Delaware Perinatal Cooperative initiative to standardize care
- Routine Debriefings after events
- On-going review of the perinatal dashboard at department quality meetings to track and trend OBH

## MEASUREMENT

- Rates of OBH Administrative Data
- Transfusion rates/quantity
- Mortality
- Complications

Perinatal Complications												
	Numbers					Trend	Slope	Rates				
	FY2016	FY2017	FY2018	Peer2018				FY2016	FY2017	FY2018	Peer2018	Trend
Hemorrhage (peripartum)	16	27	35	259		↑	Hemorrhage (peripartum)	1.8%	3.2%	4.5%	3.9%	↑
Peripartum Transfusions	8	16	30	706		↑	Peripartum Transfusions	0.9%	2.1%	3.8%	1.4%	↑
Packed Red Blood Cell Quantity/Patient	4.63	2.25	2.17	2.41		↓	Packed Red Blood Cell's Percent Use	1.8%	2.1%	4.2%	2.3%	↑
Preeclampsia	4	7	12	945		↑	Preeclampsia	0.4%	0.9%	1.5%	1.8%	↑
Eclampsia	4	0	4	43		⇒	Eclampsia	0.4%	0.0%	0.5%	0.1%	↑
Maternal VTE	0	0	1	33		↑	Maternal VTE	0.0%	0.0%	0.1%	0.1%	↑
Vag. deliveries with coded shoulder dystocia	3	8	4	1,116		↑	Vaginal deliveries with coded shoulder dystocia	0.3%	1.0%	0.7%	2.1%	↑
Maternal Sepsis Not POA	0	0	2	200		↑	Maternal Sepsis Not POA	0.0%	0.0%	0.3%	0.4%	↑

## LESSONS LEARNED

- Utilizing best practice recommendations and our data have guided our performance
- Patient-centered and safe care of the mother-baby couple enhances quality and guides individual and team decisions
- The TeamSTEPPS approach to simulation with feedback and evaluation greatly improved the confidence and performance of the team.
- Utilization of checklists is best practice for risk reduction.

## KEY REFERENCES

- Pregnancy Mortality Surveillance System. Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>
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## CONTACT

Bridget Buckaloo: [bbuckaloo@beebehealthcare.org](mailto:bbuckaloo@beebehealthcare.org)