

Quantification of Blood Loss: Implementing and Sustaining Practice Change

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Dr. Hurst has no disclosures, financial interests or conflicts of interest to report

DISCLOSURE STATEMENT

Gain insight into the use of and EBP model for the implementation and sustainability of practice change: QBL

Objectives

- Describe the context of pregnancy related deaths .
- Explore the ARCC Model as a strategy to implement and sustain practice change.
- Discuss the implementation of policies for the quantification of blood loss (QBL).

Pregnancy related death definition (CDC)

- The death of a woman during pregnancy or within one year of the end of pregnancy from
 - A pregnancy complication
 - A chain of events initiated by pregnancy
 - The aggravation of an unrelated condition by the physiologic effects of pregnancy

Most frequent causes of Pregnancy Related Deaths (2011-2014)

- Cardiovascular diseases, 15.2%.
- Non-cardiovascular diseases, 14.7%.
- Infection or sepsis, 12.8%.
- Hemorrhage, 11.5%.
- Cardiomyopathy, 10.3%.
- Thrombotic pulmonary embolism, 9.1%.
- Cerebrovascular accidents, 7.4%.
- Hypertensive disorders of pregnancy, 6.8%.
- Amniotic fluid embolism, 5.5%.
- Anesthesia complications, 0.3%.

The cause of death is unknown for 6.5% of all 2011-2014 pregnancy-related deaths.

IDENTIFY THE CLINICAL PROBLEM

Inaccuracies in measurement of blood loss

- Overestimation and underestimation (1960s)
- Visual
 - Most commonly underestimation (by 35-50%)
 - Underestimation of large volumes
 - Overestimation in small volumes

Implications of inaccurate blood loss estimation

- Delays in initiation of blood transfusion
- Delays in maternal resuscitation
- Costly
- Unnecessary treatments
- Unnecessary risks

Hemorrhage: How Much is too Much?

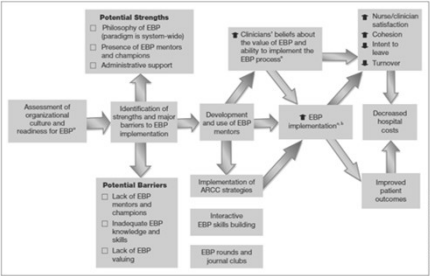
- > 500 mL for vaginal delivery and > 750 mL for C/S
 - BUT 500 mL for NSVD is the **average**
 - 750 mL for C/S is **average**
 - And for most women well tolerated
- WHO defines
 - EBL of > 500 mL an "alert line"
 - > 1000 mL an "action line"
- ACOG (reVITALize)
 - Cumulative EBL > 1,000 mL for either vaginal or cesarean birth with enhanced surveillance and early interventions, as needed, for 500-1000 mL
- 4-5% of women > 1000 mL - A clinically significant amount!!

1/3 of women with > 1000 ml NO risk factors

MODEL FOR IMPLEMENTATION AND SUSTAINABILITY

Advancing Research and Clinical Practice Through Close Collaboration (ARCC®Model)

- Four Assumptions
1. Barriers and facilitators to EBP exist for individuals and systems
 2. Barriers to EBP must be removed – facilitators put in place
 3. Beliefs about EBP and confidence in ability to implement must be strengthened
 4. EBP culture that includes mentors



Assumptions Basic to the ARCC Model

- Individual and organizational barriers to, and facilitators, of EBP
- Barriers must be removed mitigated and facilitators put in place
- A culture including EBP mentors is necessary to advance and sustain EBP
- To change practice:
 - Beliefs about value of EBP and confidence in ability to implement must be strengthened



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Greater implementation of EBP...

- Higher job satisfaction
- Lower turnover rates
- Improved patient outcomes



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ASSESSMENT OF ORGANIZATIONAL CULTURE AND READINESS FOR EBP



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High Reliability Organizations Deliver...

- Safe, quality care
- Decreased costs
- Improved clinician job satisfaction



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IDENTIFICATION OF STRENGTHS AND MAJOR BARRIERS TO EBP



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Barriers vs. Strengths

- | | |
|----------------------------------|---|
| • Sacred cows | • Assistance with development/implementation |
| • Competing clinical priorities | • Supportive CNO/CEO |
| • Time | • Workplace champions |
| • Allocation of Resources | • Network of mentors |
| • Organizational politics | • EBP expectations of Joint Commission/Magnet |
| • Lack of administrative support | |
| • No accountability for EBP | |



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Responding to the “naysayers”

- It takes too much time
- Why would we do this on everyone?
- The doctors/CNMs don’t want us to do it
- We don’t have the supplies
- It takes too long



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DEVELOPMENT AND USE OF EBP MENTORS



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Mentors...the key component!

- Advanced practice nurses/clinicians
- Expert-system wide/advanced practice/peer
- In-depth knowledge and skills
 - EBP
 - Behavior change
 - Organizational culture change



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When clinicians work with EBP mentors....

- Increased belief in value of EBP
- Increased belief in their ability to implement EBP
- Greater achievement of evidence-based care.



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https://www.youtube.com/watch?v=F_ac-aCbEnQ

EBP IMPLEMENTATION




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Quantification of Blood Loss: QBL

- DENIAL leads to DELAY
- If its **not routine standard**, we don’t **know how** to do it when we need it. And we don’t recognize **WHEN** we need it until late in the game...




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Selected Areas of Initial Focus for Hemorrhage Protocol

- ***Likely* Easy Wins**
 - Hemorrhage carts
 - Active management (oxytocin at birth)
- **Essential Elements, may take more time**
 - Risk assessment
 - Massive transfusion protocols
 - Other overall protocol details (e.g. 2nd line meds)
 - Replace EBL with QBL processes



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Example OB Hemorrhage Cart

- Quick access to emergency supplies
- Refrigerator for meds
- Establish necessary items and par levels
- Label drawers/compartments
- Include checklists
- Develop process for checking and restocking
- Educate nursing and physician staff

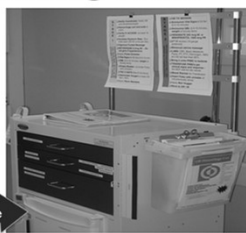



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Recommendations for the quantification of blood loss

- Create a list of dry weights
- Begin QBL immediately after infant birth
- Record total weight in under buttocks drape/suction canister
- Subtract pre-placenta fluid volume from post placenta volume
- Weigh blood soaked items and add to the fluid volume

WET Item gram weight – DRY item gram weight = milliliters of blood in the item



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Routine Two Step Quantification of Blood Loss at C/S

1. Suctioned blood
 - a. Between delivery of infant and placenta,
 - i. OB suction drops of amniotic fluid
 - ii. Suction staff places container to change suction tubing to second canister
 - iii. Suction staff switches to new canister if manual amniotic fluid appears in oral attachment, or select
 - b. Circulator records volume in second canister in spreadsheet calculation calculator
 - c. Rest to record before irrigation used OR
 - d. If irrigation used and suctioned, Suction staff communicates amount to circulator to be subtracted from canister (but may lead to error if not all irrigation is aspirated)
 - e. Consider limiting irrigation use during routine cesarean section
2. Lap sponges
 - a. During case, identify the sponges passed off table into by table staff
 - b. Circulator places in hanging lap sponge bag (15 sponges/row)
 - c. Circulator weighs (tosses) complete wet lap sponge bag off table near end of case (sponges left in sponges)
 - d. Total weight of sponges weighed in hanging sponges weighed, entered in spreadsheet calculator (BPC calculator)
3. Spreadsheet calculator/BPC calculator calculates QBL from suctioned data
(BPC includes to account for other large sources of blood loss if indicated and add to table, placental, large volume irrigation used from using in device used prior to, large floor pan of table, etc.)


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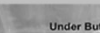
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Equipment

- Calibrated under buttocks drapes
- Dry weight card
- Scales to weigh blood soaked items
- Formulas inserted into electronic charting

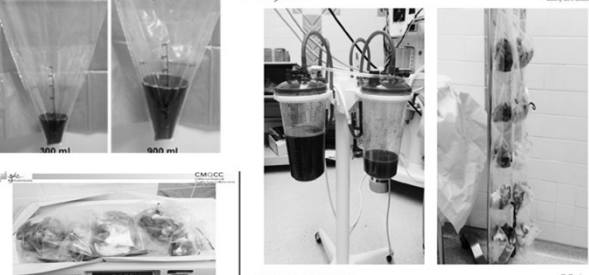


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Under Buttocks Drapes



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Documentation

- Should always be QBL not EBL

QBL Calculator in EMR Deliver Summary

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Calculator

QBL Calculator in EMR Deliver Summary

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Appendix H

QBL Calculator Cesarean Section

Canister Volume cc			0
Irrigation cc			0
# of Lap Sponges		25 grams each	0
# of Lap Sponges		20 grams each	0
Weight of Lap Sponges plus Lap Sponges grams			0
Weight of Kidney Basin + Blood grams			0
Weight of Kidney Basin		20 grams	0
# of Blue Chux (30 X 30 cm)		35 grams each	0
Weight of Bloody Chux grams			0
Total QBL			0 cc

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QBL Calculator Cesarean Section

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Training

- Charting tools
- Regularly scheduled standardized training in formal QBL
- Collaboration
 - Nurses
 - Anesthesia providers
 - MDs
 - CNMs

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Training

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Training

Training Tools

Posters

18 X 16 inch Dry Lap Sponges

25 ml 50 ml 75 ml 100 ml

- 25 ml saturates about 50% area
- 50 ml saturates about 75% area
- 75 ml saturates entire surface
- 100 ml will saturate and 1/2

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Training Tools

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Key Tips for Estimating Blood Loss

- EVERY birth EVERY time
- Don't wait until you think she is hemorrhaging to start tracking
- Train, practice, review

Readiness, Recognition, Response, Reporting/Systems Learning

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Key Tips for Estimating Blood Loss

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Remember

Start small

Every birth....every time!

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Remember

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