

Quantifying Blood Loss

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No Disclosures



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Objectives

- Discuss the national initiative for quantifying blood loss
- Identify the benefits to quantifying blood loss vs. estimation of blood loss
- Review various methods for evaluating blood loss



Scope of the Problem

- 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)



Clinical Picture

Confusing...

- Physiologic adaptation
- Young healthy women
- Significant delay in the manifestation of the conventional signs of shock :
 - Hypotension
 - Tachycardia



PPH Classification

<i>Class</i>	<i>Acute Blood Loss</i>	<i>% Lost</i>	<i>Clinical Changes</i>
1	1000cc	10-15	Dizziness, palpitations Minimal BP change
2	1,500cc	15-25	Tachycardia, tachypnea, sweating, weakness Narrowed pulse pressure
3	2,000cc	25-35	Significant tachycardia and tachypnea, restlessness, pallor, cool extremities Hypotension
4	≥2,500cc	35-45	Shock, air hunger Oliguria/anuria

Modified from Bonnar, J Baillieres Best Pract Res Clin Obstet Gynaecol 2000



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Clinical Issue

- Underestimation leads to delayed treatment
- Overestimation leads to unnecessary and costly interventions



Recommendations for QBL

- AWHONN Standard Recommendation
All births
- CMQCC Standard Recommendation
All births
- National Maternal Health Initiative 2013
One of 7 safety objectives

Council on Patient Safety in Women's Health (2014)



Conventional Practice

“Guesstimating”



Look Familiar?



Looks Can Be Deceiving



Value of Quantifying

Objective assessments:

- “Patient is actively bleeding. She just loss 500mL and her cumulative blood loss is now 1200mL”



Methods to Quantify

One gram = One milliliter



Quantifying Blood Loss for Vaginal Delivery Process



Basin – 124 grams



Laps – 20 grams



Blue Towels- 55 grams



Raytex- 5 grams



Chux- 37 grams



Underpad- 113 grams



Drape 135 grams

5 Easy Steps

1. Note how much amniotic fluid is in the drape just after the delivery of the baby.
2. When you are cleaning up after the delivery:
 - Put a basin on the scale
 - Put the dirty drape in the basin (do not empty the fluids from the cone of fluids)
 - Subtract the amount of amniotic fluid from the total weight
3. Weigh chux/underpad and any other soiled materials
4. Fill out the blood loss worksheet
5. Report the weights to the provider

Vaginal Deliveries



- Begin right after the infant's birth:
 - Note amniotic fluid, urine, etc. in the under-buttocks bag prior to birth.
- RN looks at the bag as soon as MD/CNM has completed the delivery to communicate the amount of blood in the calibrated drape as QBL.

AWHONN 2014

Two Step Method

1. Two Canisters

- Suction all of the amniotic fluid out of the drape between delivery of the infant and placenta
 - Scrub directs the circulating nurse to switch the suction tubing to a second canister
 - The second canister will be the blood loss (minus any irrigation used during the case)
- AWHONN (2014)



Two Step Method

2. Weighing laps and drapes

AWHONN (2014)



Novel Methods for Quantification



- Circulating nurse scans each lap as it comes off the field
- Captured image runs through an algorithm to evaluate the blood soaked lap
- Can filter out the impact of other fluids
- Quickly sends result to the display screen

Holmes et al.(2014) International Anesthesia Research Society



Quantification Tips

- Build weighing of pads into routine practice:
 - Establish dry weights of commonly used products
 - Have scales readily available in room
- Build electronic calculator into documentation



Conclusion

- Delay in recognition of large blood losses is a common finding in cases of maternal morbidity and mortality
- A policy of waiting to quantify blood loss only after the excessive loss is appreciated does not address this problem
- Standardization of procedures is an important aspect of improving safety and quality

CMQCC 2115



Resources

1. Council on Patient Safety in Women's Health Care:

- Safety Action Series

Quantifying Blood Loss

2. AWHONN:

- Postpartum Hemorrhage Project

3. California Maternal Quality Care Collaborative

