Timing is Everything: An Evaluation of Best Practices for Quantitation of Blood Loss After Vaginal Delivery

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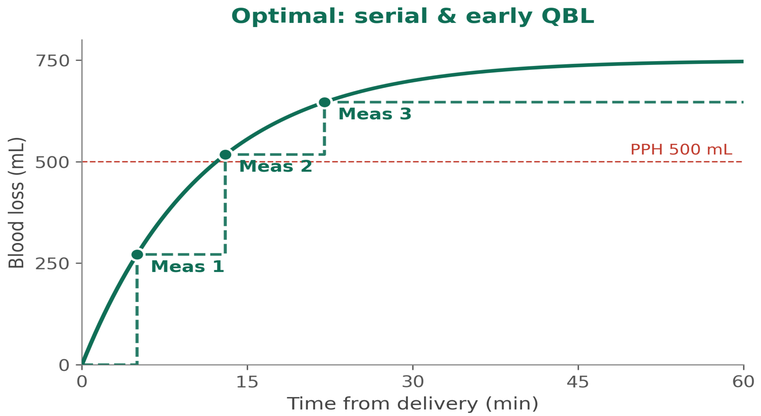
Background

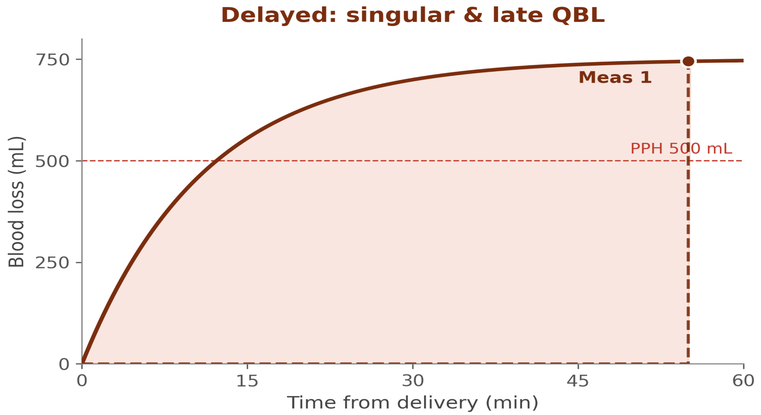
- Late recognition of **PPH** is a leading driver of maternal morbidity
- **QBL** improves early detection of hemorrhage compared to visual estimation
- Effectiveness of **QBL** depends on **timing and frequency** of implementation

QBL is effective —
but only if initiated early and performed serially

Knowledge Gap

- The **timing and frequency** of QBL measurement in real-world clinical practice are not well characterized





Methods

Study Design

- Retrospective observational study
- Single tertiary academic medical center
- Vaginal deliveries with **QBL ≥ 500 mL**
- Study period
  - Sept 15 – Dec 14, 2025
- Data source
  - Time-stamped **gravimetric QBL** (Stryker)
  - Measurements relative to time of delivery

Key Definitions: Optimal vs. Delayed QBL

	Optimal QBL	Delayed QBL
Frequency	Serial (≥ **3** measurements)	Singular
Timing	Early (< **15** min from delivery)	Late (> 15 min from delivery)

Statistical Analysis

- Descriptive analyses
- Exploratory analysis
  - Linear regression with log-transformed QBL (serial vs. total blood loss)

** Early QBL defined per Mammoliti et al., Lancet Global Health, 2025*

Results

Study Population

101 PPH cases identified for analysis (QBL ≥ 500 mL after vaginal delivery)

Serial
(≥ 3 measurements)
17.8%
(18/101 cases)

Early
(< 15 min from delivery)
10.9%
(11/101 cases)

serial measurements
median interval
6.5 min
(IQR 7.5 min)

Exploratory analysis

Early serial measurement showed a non-significant trend toward higher total QBL
(95% CI −0.08 to 0.60), *likely reflecting provider response to clinically apparent hemorrhage*

Conclusion & Discussion

KEY FINDING

Optimal QBL (timely, serial gravimetric) measurement was **infrequently performed** after vaginal delivery with PPH

FUTURE DIRECTIONS

- Develop **multidisciplinary anesthesia-nursing** initiatives
- Incorporate **standardized timing and frequency** of QBL measurement into protocols
- Assess the impact of refinements on **early PPH recognition and intervention**