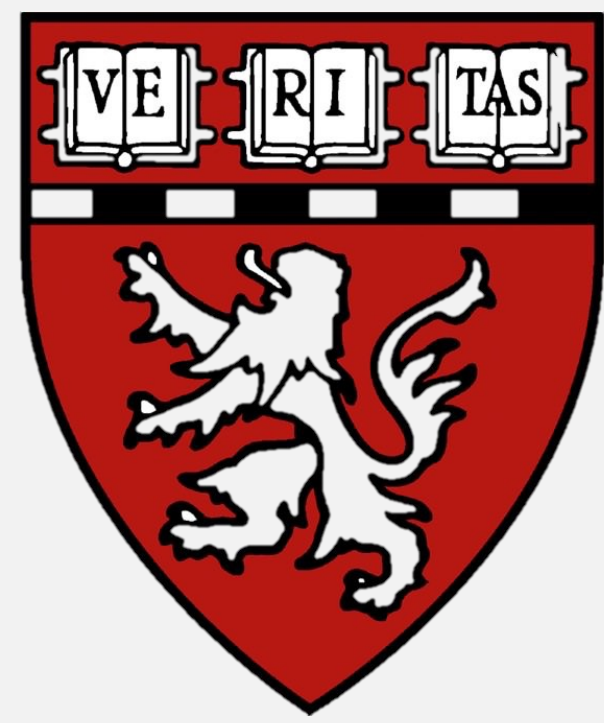




Evaluation of automated physician alert-activated anesthesia interventions for postpartum hemorrhage after vaginal delivery: A prospective pilot study



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Background

Preventable morbidity from postpartum hemorrhage (PPH) is frequently from delayed treatment (REF). Anesthesiologists are not routinely at the bedside after vaginal delivery. Quantitative blood loss (QBL) systems with physician alerts may expedite resuscitation, but meaningful response thresholds are unknown.

Q: Does a QBL system physician alert threshold of 500 mL prompt anesthesia interventions for PPH?

Objectives

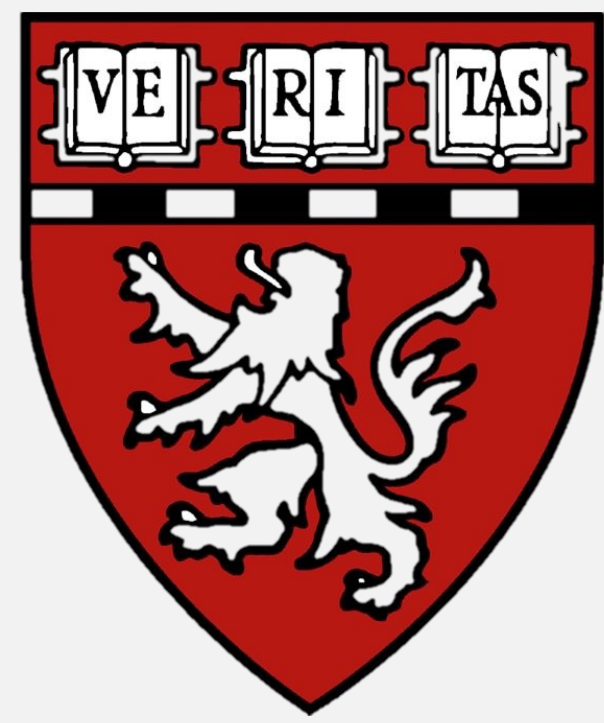
1. Determine interventions made by the anesthesia team in response to QBL ≥ 500 mL
2. Assess correlation between QBL and number of interventions
3. Compare frequency and nature of interventions at 500 mL vs. 1000 mL QBL



Image. Stryker QBL system.

Image. Anesthesiologist receiving alert for a PPH of 2049 mL





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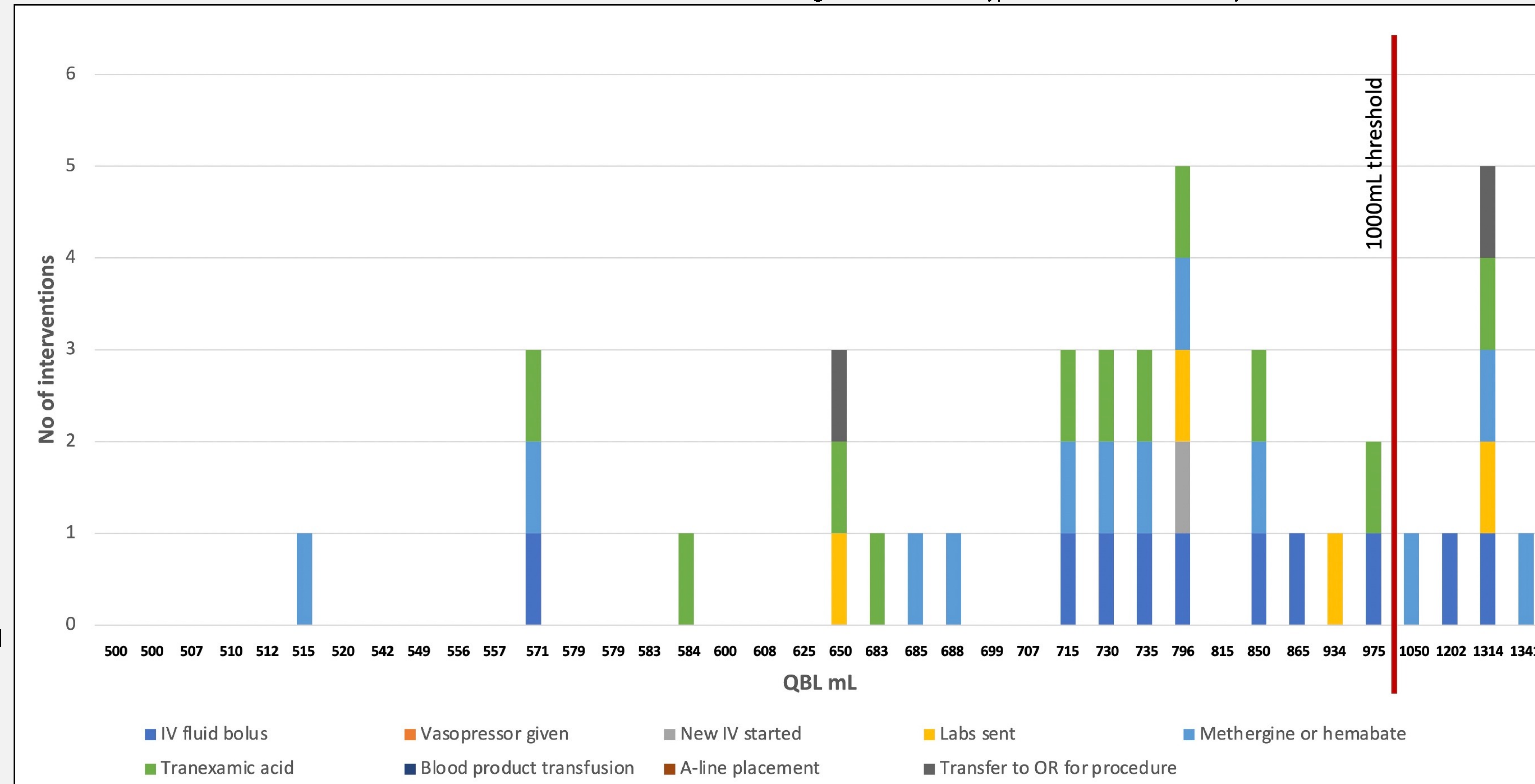
METHODS

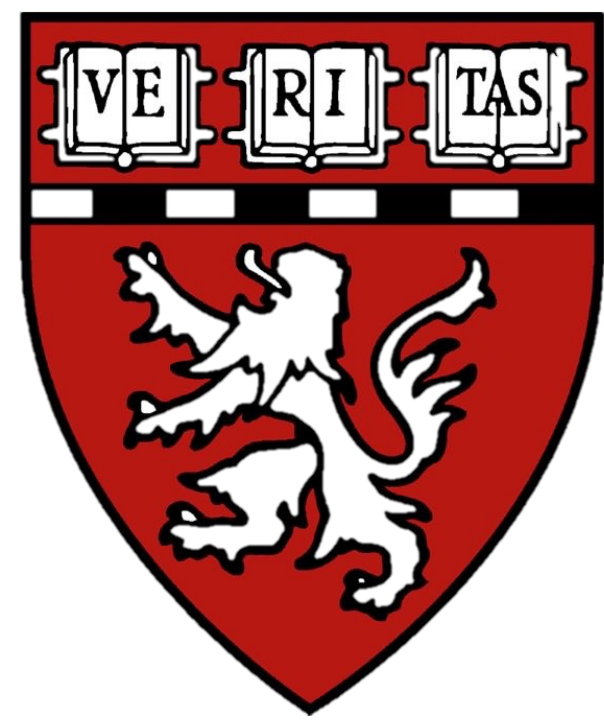
- IRB-approved single-center prospective pilot study conducted over six months (2021)
- Stryker® QBL devices were installed in every labor room in our unit with automatic Apple iWatch notifications for QBL ≥ 500 mL
- Devices automatically triggered an alert sent to members of Anesthesia team who responded to hemorrhage.

RESULTS

- 38 alerts captured as a convenience sample
- Median physician alert QBL: 637mL
- **50% of the alerts resulted in an intervention**
- 90% of alerts occurred for QBL <1,000 mL
- Most common interventions:
 - second line uterotonic (31%)
 - tranexamic acid (28%)
 - IV fluid bolus (23%)
- Correlation coefficient between QBL and number of interventions: 0.63 ($P < 0.001$)

Figure. Number and type of interventions for every PPH alert.





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Key Points

- A QBL threshold of 500 mL is a clinically important trigger for intervention in the setting of PPH.
- Further research is warranted in high and low resource settings to see if automatic QBL alert systems can lower morbidity by expediting response to PPH.

References

1. Anesth Analg. 2020;130(5):e119-e122
2. Obstet Gynecol. 2017;130(4):e168-e186