

# The BLEED (Blood Loss Estimation-Equivalent Determination) Study

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## INTRODUCTION

- ❖ PPH is the leading cause of maternal mortality worldwide accounting for 25% of maternal deaths
- ❖ Every year, about 14 million females suffer from PPH
- ❖ In the USA, PPH accounts for 12% of maternal deaths
- ❖ Between 2002 to 2014, PPH accounted for 15% of all pregnancy related deaths in Illinois
- ❖ It is essential to achieve reduction in PPH to reduce maternal mortality rates

## PURPOSE OF RESEARCH

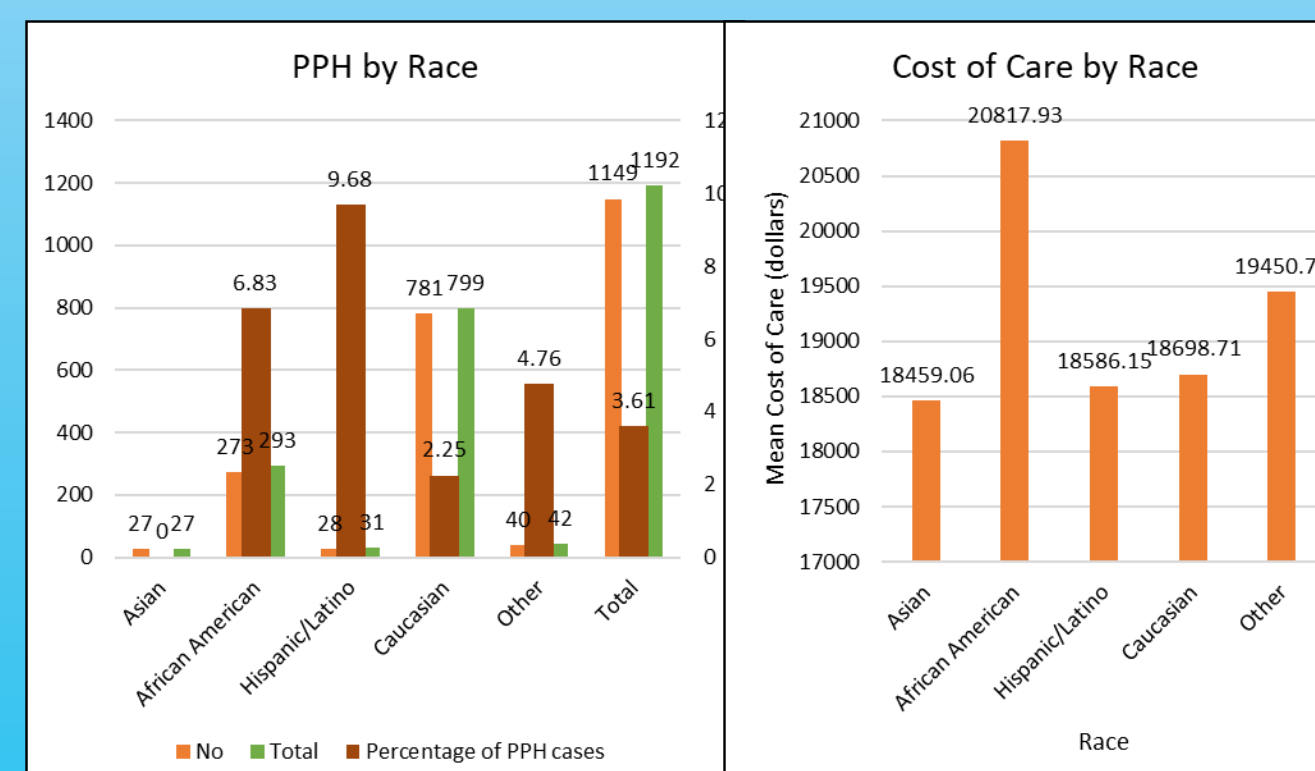
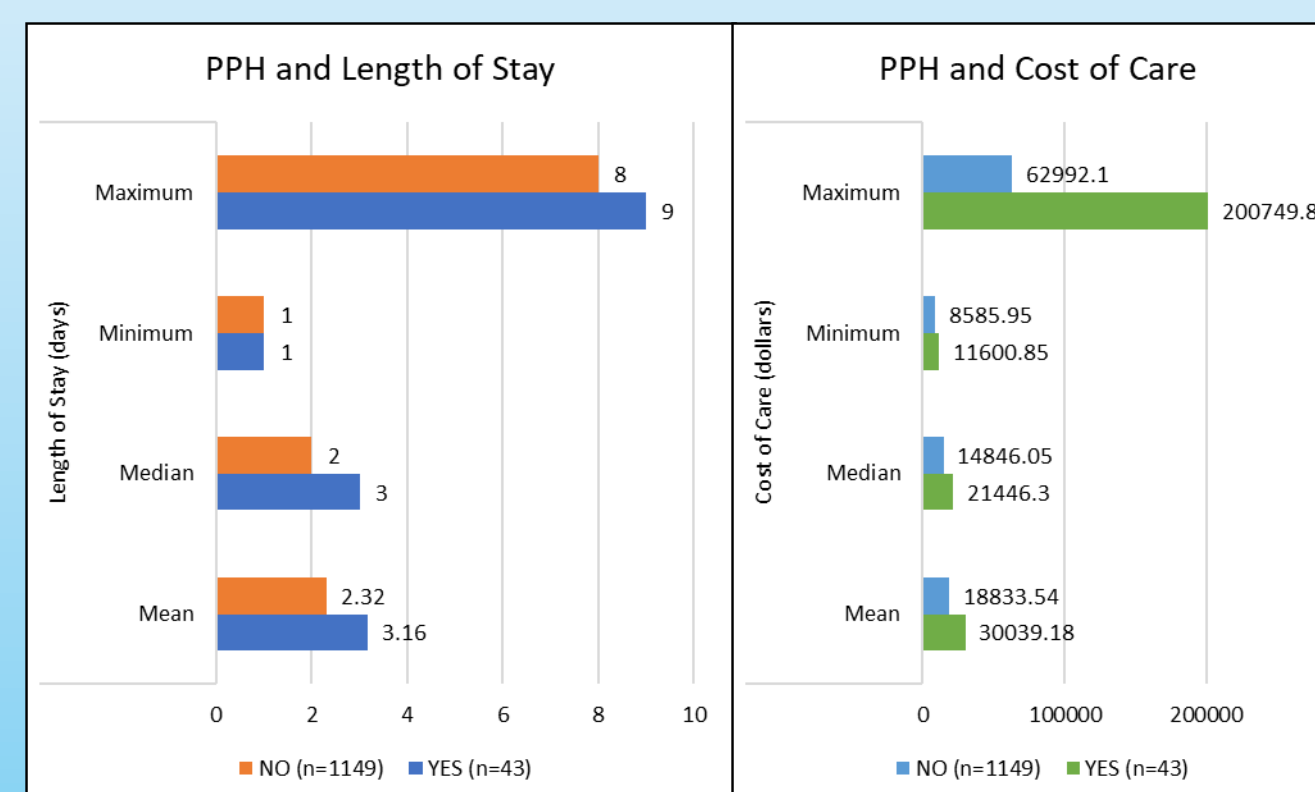
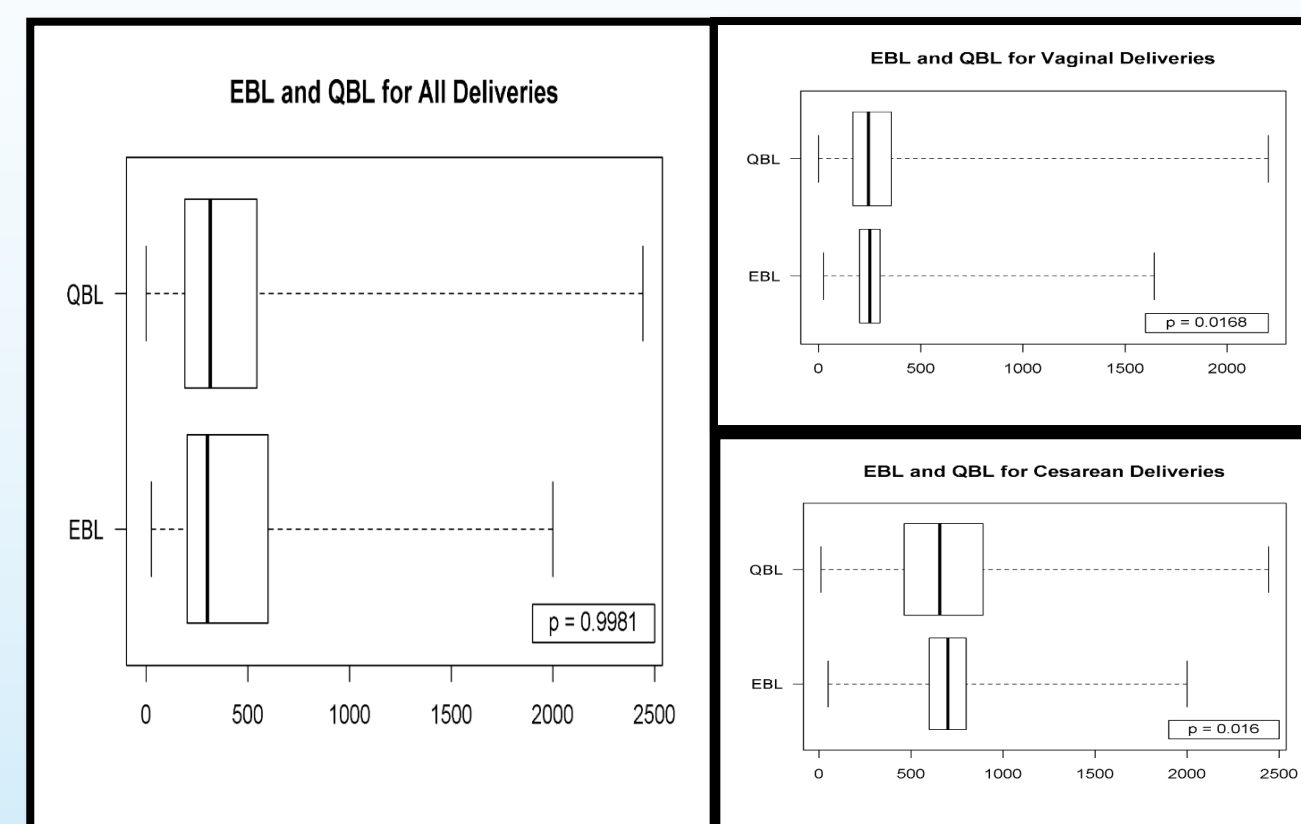
- ❖ The methods routinely employed to measure blood loss: EBL or Visual Estimation of blood loss and QBL or Quantification of blood loss
- ❖ **Study aims:**
- ❖ To assess the accuracy in measuring EBL and QBL values by labor and delivery clinical staff
- ❖ To assess any implications on the cost of care and length of stay associated with the PPH diagnosis
- ❖ To assess any association between PPH and age, race and type of delivery
- ❖ To assess any relationship between EBL/QBL values and age, race, length of stay and cost of care

## METHODS

- ❖ Cross-sectional study
- ❖ Retrospective data collection through chart reviews of in-patient cases who had a delivery at Unity Point Methodist
- ❖ Data analytics department provided data on patient diagnosis, cost of care and length of stay
- ❖ Time period: November 2017-August 2018
- ❖ **Hypothesis:** There is no statistically significant difference between EBL and QBL values measured by clinical staff

## RESULTS

- ❖ **No statistically significant difference between EBL and QBL values when all deliveries are considered** ( $p=0.9981$ , Mean EBL value: 407.48, Mean QBL value: 420.26, Mean difference: 12.68,  $n=1119$ ). We fail to reject null hypothesis.
- ❖ **EBL for vaginal delivery is lower than the QBL** ( $p=0.0168$ , Mean EBL=269.51, Mean QBL=292.62, Mean difference=23.11)



## RESULTS

- ❖ **EBL for Cesarean delivery is higher than the QBL** ( $p=0.016$ , Mean EBL=737.73, Mean QBL=723.44, Mean difference=14.29)
- ❖ **The length of stay (LOS)** for patients with PPH is statistically significantly longer than LOS for patients without PPH ( $p= 0.0009$ )
- ❖ **The cost of care** for patients with PPH is statistically significantly higher than the cost of care for patients without PPH ( $p < 0.0001$ )
- ❖ **The age difference** between patients with PPH  $n=43$  and patients w/o PPH,  $n=1149$ ) is not statistically significant ( $P=0.4306$ )
- ❖ **The rates of PPH** are statistically significantly different among race groups, ( $p=0.006$ )
- ❖ **The cost difference among race groups** when QBL values are considered is statistically significant ( $p=0.0126$ ), with African Americans paying the highest cost among all races
- ❖ 298 cases with QBL more than 500ml, not diagnosed as PPH

## CONCLUSIONS

- ❖ The clinical staff are accurate in visually estimating blood loss when all deliveries are considered
- ❖ PPH has significant implications for length of stay and cost of care
- ❖ There are racial disparities associated with the experience of PPH and cost of care
- ❖ Need for consensus on PPH definition

## REFERENCES

- ❖ Smith, J.R. (2018). Post-Partum Hemorrhage. Retrieved from: <https://emedicine.medscape.com/article/275038-overview>
- ❖ World Health Organization. (2012). *WHO recommendations for the prevention and treatment of postpartum hemorrhage.*
- ❖ Evensen, A., Anderson, J. M., & Fontaine, P. (2017). American family physician. *American Family Physician* (Vol. 95). American Academy of Family Physicians. Retrieved from: <https://www.aafp.org/afp/2017/0401/p442.html>
- ❖ <https://www.p/2017/0401/p442.html>
- ❖ Illinois Department of Public Health. (2015). *Illinois Maternal and Child Health Databook.* Retrieved from <http://www.dph.illinois.gov/sites/default/files/publications/publications-owh-il-title-v2015-databook-042816.pdf>