

## **Body surface area as a predictor of post-partum hemorrhage risk**

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### **Abstract:**

Postpartum hemorrhage remains one of the most common contributors to maternal morbidity and mortality. In trauma and critical care, one factor that contributes to determining classes of shock is blood loss based on % volume, calculated based on body surface area. To date, there is only one study that has studied body surface area as it applies to post-partum hemorrhage. The purpose of our study is to study body surface area (BSA) as it applies to post-partum hemorrhage (PPH).

A retrospective analysis was performed using data accessible through EDW. We studied deliveries at Delnor Hospital from July 2019 to December 2020. Data points included age, gestational age, gravida/parity, method of delivery, height, weight, BMI, and quantitative blood loss. BSA was calculated using the Dubois formula. The BSA was further divided into quintiles to evaluate if a greater BSA resulted a greater percentage of blood loss.

Our data show that there is no relationship between body surface area and post-partum hemorrhage. We found that cesarean section deliveries had greater blood loss as compared to vaginal deliveries. Our study did show that pregnant patients lose about 8% of total blood volume with vaginal deliveries, whereas C-sections lose 15% of their total blood volume. One outlier, while not statistically significant, is that the patients with greater BSA at baseline did have less blood loss in C-sections compared to lower BSA patients.