

**Abstract:**

**Body Surface Area as a Predictor of Post-partum Hemorrhage Risk in the Setting of COVID-19**

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**Purpose:**

Post-partum hemorrhage remains the leading cause of maternal mortality worldwide. The most effective way to determine and quantify postpartum blood loss remains controversial. To date, only two studies have looked at blood loss as a function of body surface area (BSA). During the COVID-19 pandemic we saw increased odds of maternal death and obstetric hemorrhage. Per the World Health Organization, the level of maternal mortality during the COVID-19 pandemic may have been impacted by two mechanisms: deaths where the woman died due to the interaction between her pregnant state and COVID-19 (known as an indirect obstetric death), or deaths where pregnancy complications were not prevented or managed due to disruption of health services. We believe that the COVID-19 virus influenced the amount of blood lost during delivery. Thus, the purpose of this retrospective study is to better understand if a correlation exists between body surface area and quantitative blood loss in the context of the COVID-19 pandemic.

**Methods:**

A retrospective analysis will be performed using data accessible through a specifically created enterprise data warehouse (EDW). We will study deliveries at Northwestern Delnor, Prentice Women's, Kishwaukee, Central DuPage, Lake Forest, and Valley West hospitals from July 2019 to December 2022. Data points include the fetuses gestational age and the mother's age, gravida/parity, method of delivery, height, weight, BMI, COVID-19 infection status (positive or negative at the time of delivery or at any time during pregnancy), race/ethnicity. The quantitative blood loss at the time of delivery will also be analyzed. BSA will be calculated using the Dubois formula. The BSA will be further divided into quintiles to evaluate if a greater BSA resulted in a greater percentage of blood loss then correlated with multiple variables including COVID-19 infection status.

**Anticipated Results and Conclusions:**

Data from previous studies suggest there is no relationship between body surface area and post-partum hemorrhage. They concluded that cesarean-section deliveries had greater blood loss as compared to vaginal deliveries. We hope to determine if there was a correlation between body surface area, quantitative blood loss, and COVID-19 infection status. Full evaluation of findings from our analysis will be used to refine and improve ways of determining risk and quantifying amounts of postpartum blood loss.