Can Interprofessional Simulation Training Influence the Frequency of Blood Transfusions After Birth?

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Topics: Obstetric Hemorrhage, Obstetric Complications, Systems-based Practice

Postpartum hemorrhage is defined as an estimated blood loss of >500 mL after vaginal birth and >1000 mL after cesarean delivery. Determining how much blood a patient has lost remains difficult as it is typically assessed by visual estimation, which may underestimate excessive blood loss. Interprofessional simulations of hemorrhage help improve performance and thereby increase patient safety during clinical events. The authors examined whether this type of training could reduce blood loss, during hemorrhage using the rate of red blood cell transfusions as a marker.

Two cohorts consisting of women who gave birth at Norwegian University Hospital and had an estimated blood loss >500 mL within 24 hours after vaginal birth were selected from 2009 and 2011. In 2010, the maternity staff received a special 6-hour training session, which used a birthing simulator for emergency obstetric scenarios, including scenarios meant to help prevent, identify, and treat postpartum hemorrhage. The scenarios emphasized communication and leadership. The rate of red blood cell transfusions was retrospectively compared before and after this training. The secondary outcome was the rate of surgical interventions intended to treat postpartum hemorrhage.

In the 2009 cohort, 111 patients of the 534 patients with estimated blood loss >500 mL received red blood cell transfusions, for a rate of 20.8%. In 2011, only 67 patients received transfusions of the 546 whose estimated blood loss exceeded 500 mL, for a rate of 12.3%. The adjusted odds ratio of receiving a red blood cell transfusion between these 2 cohorts was 0.53 [95% confidence intervals (CI), 0.38-0.74] and when adjusted for possible confounding variables including parity, oxytocin augmentation, duration of second stage, episiotomy, operative vaginal delivery, and sphincter injury. There was also a significant decrease in the frequencies of curettage (P < 0.01) and uterine artery embolizations (P = 0.01) from 2009 to 2011.

The findings of this study showed a lower rate of red blood cell transfusion in 2011 after staff had undergone simulation training compared with a time period (2009) before the training. Although the estimates of blood loss remained similar before and after training, these results suggest that there was indeed a reduction in patient blood loss from 2009 to 2011. In addition, the authors identified a reduction in the numbers of curetages and uterine artery embolizations. However, a causal relationship cannot be furthered at this point due to the complexity of several variables and their various interactions. The authors recommend future studies be performed using stronger controls that might account for other possible confounders.

Maternal Outcomes After Uterine Balloon Tamponade for Postpartum Hemorrhage

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Two recent reviews have suggested that uterine balloon tamponade most quickly treats and is the least invasive method available for treating postpartum hemorrhage (PPH). Although this procedure is frequently used and has a success rate similar to uterine artery embolization, B-Lynch suture, and stepwise uterine devascularization, its utility is unclear. The authors of this study examined its use in 2 French health centers to determine what factors might serve as reliable indicators for its failure.

The authors conducted a retrospective survey involving a level 3 university referral center and a level 2 private hospital, both in Pays de Loire, France. The study...