

Title:

The Use of Donabedian Quality Model to Implement Quantification of Blood Loss: Preventing Maternal Hemorrhage

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Session Title:

Global Strategies in Maternal Care

Slot:

P 04: Sunday, 30 July 2017: 2:30 PM-3:15 PM

Scheduled Time:

2:30 PM

Keywords:

Donabedian Quality Model, Maternal hemorrhage and Quantification of blood loss

References:

Bingham, D. (2012). Eliminating preventable, hemorrhage-related maternal mortality and morbidity. *Journal of Obstetrics, Gynecology, & Neonatal Nursing*, 41(4), 529-530.doi:10.1111/j.1552-6909.2012.01371.x

Bingham, D. & Jones, R. (2012). Maternal death from obstetric hemorrhage. *Journal of Obstetrics, Gynecology, & Neonatal Nursing*, 41(4), 531-539.doi: 10.1111/j.1552-6909.2012.01372.x

Della Torre, M., Kilpatrick, S.J., Hibbard, J.U., Simonson, L., Scott, S., Koch, A. et al (2011). Assessing preventability for obstetric hemorrhage. *American Journal of Perinatology*. Doi:10.1055/s-0031-1280856

Gabel, K.T. & Weeber, T.A. (2012). Measuring and communicating blood loss during obstetric hemorrhage. *Journal of Obstetrics, Gynecology, & Neonatal Nursing*, 41(4), 551-558.doi:10.1111/j.1552-6909.2012.01375.x.

Main, E.K., Goffman, D., Scavone, B.M., Low, L.K., Bingham, D., Fontaine, P.L. et al (2015). National partnership for maternal safety: Consensus bundle on obstetric hemorrhage. *Journal of Obstetrics, Gynecology, & Neonatal Nursing*, 44(4), 462-539.

Abstract Summary:

This presentation will discuss the significance of the obstetric hemorrhage globally. Secondly, a dialogue will be presented regarding the recognition of and response to an obstetric hemorrhage through simulation and quantification of blood loss by using Donabedian's Quality Model.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
1. Relate the incidence and significance of maternal hemorrhage to maternal mortality throughout the US and world and the importance of recognition and response to treatment.	I. Epidemiology of Maternal Hemorrhage: a. Worldwide statistics b. United States statistics rising c. Bundles: Readiness, recognition, and respond to maternal hemorrhage

<p>2. Formulate management strategies through Donabedian's Quality Model to implement quantification of blood loss during birth.</p>	<p>II. Donabedian Model</p> <p>a. Structure Organizational variables (quality of nurses & physicians; training)</p> <p>b. Process Process of patient care variables (simulation of in-situ deliveries, quantification of blood loss at birth between physicians and nurses)</p> <p>c. Outcome Healthcare outcomes (quality improvement, policy change)</p> <p>i. Nursing Implications</p> <ol style="list-style-type: none"> 1. Risk assessment of patients and anticipate hemorrhage 2. Recognize maternal hemorrhage by knowing accurate blood loss 3. Respond to the treatment of maternal hemorrhage
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Abstract Text:

Background:

Worldwide, obstetric hemorrhage is the most common complication of childbirth and is the most preventable cause of maternal mortality. A leading cause of preventable maternal mortality is obstetric hemorrhage impacting 1% to 4% of all births worldwide. From the World Health Organization (WHO), an estimated 140,000 women die every year from postpartum hemorrhage. The Healthy People Report 2020 target is to reduce this incident to 28%.

Proven preventable healthcare interventions can help manage or prevent maternal hemorrhage. These interventions include adoption of patient safety bundles: evidence based recommendations for practice and care to improve outcomes. One of the bundles includes quantification of blood loss. To date, numerous studies have identified a relationship between obstetrical hemorrhage and inadequate blood loss assessment. Visual estimation of blood loss during delivery has been a consistent theme and is inaccurate.

The proposed recommendation is to accurately quantify blood loss, the gravimetric method, by weighing all soiled linens and subtracting the dry weight. In the United States, the Association of Women's Health, Obstetrics, and Neonatal Nurses, the American College of Obstetrics and Gynecology and the California Maternal Quality Care Collaborative have presented a position statement indicating quantification of blood loss at every birth, however, this has not been the case until recently. When any pregnant woman delivers in a hospital, there is an existing assumption that quality, emergency care for obstetric hemorrhage will be received. Until recently, this assumption of quality care and preventability of obstetric hemorrhage has been questioned. Multiple studies have shown 93% of obstetric hemorrhage is preventable and clinician error as evidence by a delay in recognition and management of blood loss was the major factor contributing to the morbidity and mortality

Framework for presentation:

This presentation will discuss the significance of the obstetric hemorrhage throughout the United States and world. More importantly, a review of literature and management strategies discussing recognition and response to an obstetric hemorrhage through Donabedian's Quality Model will be presented.

Donabedian's Quality Model provides a structured, organized way to improve the process of management of blood loss for the obstetric patient. According to Donabedian, the model is a simple, linear, diagram

illustrating structure (having the right things), process (doing things right), and outcome (having the right things happen). Each component has an effect or direct influence on the next.

For the process portion of Donabedian's model, a prospective cohort design was used for evidence-based implementation examining the impact of quantification of blood loss measurement for identification of hemorrhage during birth. The primary purpose was to evaluate visual versus quantitative assessment methods in order to implement an accurate measurement of blood loss during delivery. A secondary purpose was to utilize simulation by creating in-situ simulations of deliveries to test the processes, identify barriers and opportunities while in a safe, well-controlled environment. Through Donabedian's model, the outcome was implementation of quantified blood loss at all deliveries and policy was changed. A total of 52 births were initially evaluated for visual estimation and quantitative blood loss. During this study, the average blood loss for Cesarean birth was 1200 mL and for vaginal birth 400 mL. Secondly, physicians and nurses consistently underestimated ($p < 0.0001$) blood loss by 21% to 28% at delivery. Registered nurses were inconsistent in underestimating blood loss. Through this evidence based process, maternal hemorrhage was recognized sooner and the healthcare team responded to save the life a mother. To conclude, using a derivation of Donabedian's classic structure, process, and outcomes framework would allow administrators, physicians and nursing staff the opportunity to examine the influence and implementation of quantification of blood loss during every birth thereby decreasing maternal hemorrhage and decreasing hospital stay.

Implications for practice:

The nurse is a key provider in the recognition of blood loss and mobilizing the healthcare team for positive outcomes. By understanding the current review of evidence, it is critical that nurses review the current process in their facility and implement standards for hemorrhage assessment and management. It is recognized that hospitals carry a significant burden in the prevention of adverse outcomes. Maternal hemorrhage is a direct result of interactions between healthcare team members. Evidence indicates the gravimetric method by quantifying blood loss is essential to prevent maternal mortality associated with obstetric hemorrhage. As a result, the opportunity to improve characteristics (structure and processes) affecting safe patient outcomes during birth is of utmost importance.