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EXPERT OPINION

Standardized Severe Maternal Morbidity Review: Rationale and Process

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ABSTRACT

Severe maternal morbidity and mortality have been rising in the United States. To begin a national effort to reduce morbidity, a specific call to identify all pregnant and postpartum women experiencing admission to an intensive care unit or receipt of four or more units of blood for routine review has been made. While advocating for review of these cases, no specific guidance for the review process was provided. Therefore, the aim of this expert opinion is to present guidelines for a standardized severe maternal morbidity interdisciplinary review process to identify systems, professional, and facility factors that can be ameliorated, with the overall goal of improving institutional obstetric safety and reducing severe morbidity and mortality among pregnant and recently pregnant women. This opinion was developed by a multidisciplinary working group that included general obstetrician–gynecologists, maternal–fetal medicine subspecialists, certified nurse–midwives, and registered nurses all with experience in maternal mortality reviews. A process for standardized review of severe maternal morbidity addressing committee organization, review process, medical record abstraction and assessment, review culture, data management, review timing, and review confidentiality is presented. Reference is made to a sample severe maternal morbidity abstraction and assessment form.

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To begin a national effort to reduce maternal morbidity, a specific call to identify all pregnant and postpartum women experiencing admission to an intensive care unit or receipt of four or more units of blood for routine review has been made (Callaghan, Grobman, Kilpatrick, Main, & D'Alton, 2014). The increasing rates of maternal mortality and severe morbidity in the United States have been well documented in recent publications (Callaghan, Creanga, & Kuklina, 2012; Callaghan, MacKay, & Berg, 2008; Kramer et al., 2013; Kuklina et al., 2009). It is therefore appropriate that efforts should be focused on reducing maternal severe morbidity and death (Clark, Meyers, Frye, McManus, & Perlin, 2012; D'Alton & Bonanno, 2013; Geller, Rosenberg, Cox, & Kilpatrick, 2002). Reviews of maternal deaths in order to identify likely preventable deaths and interventions to reduce preventable deaths have been widespread for years (Kilpatrick, Prentice, Jones, & Geller, 2012; Lewis, 2012). However, the call to similarly implement routine standardized identification and evaluation of severe maternal morbidity cases by every birthing facility in the United States has only recently been highlighted (Callaghan et al., 2014).

Although several methods have been proposed to identify women with severe maternal morbidity, the criteria proposed by Callaghan et al were admission of the mother to an intensive care unit (ICU) or receipt of four or more units of blood (Callaghan et al., 2014; Senanayake, Dias, & Jayawardena, 2013). These criteria were chosen because they are simple and have high sensitivity and specificity for identifying pregnant and recently postpartum women with severe morbidity (Geller et al., 2004; You, Chandrasekaran, Sullivan, & Grobman, 2013). The sensitivities were 63% to 86% when each was used individually but up to 100% if combined (Geller et al., 2004; You et al., 2013). It should be emphasized that while these criteria are reliable markers of potential severe maternal morbidity, the fact that a patient was admitted to an ICU or received four or more units of blood alone do not imply that care and systems were substandard. In fact, it is the review of the case that ultimately determines if the case is a severe maternal morbidity and whether there were improvements

We suggest a standardized severe maternal morbidity review process to improve institutional obstetric safety and reduce severe morbidity and mortality among pregnant and recently pregnant women.

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in processes or care necessary. While advocating for review of these cases, no specific guidance for the review process were provided (Callaghan et al., 2014).

The aim of this document is to present a suggested, standardized, severe maternal morbidity review process to identify systems, professional, and facility factors that could be ameliorated with the overall goal of improving institutional obstetric safety and reducing severe morbidity and mortality among pregnant and recently pregnant women. This opinion was developed by a multidisciplinary working group that included general obstetrician–gynecologists, maternal–fetal medicine subspecialists, certified nurse–midwives, and registered nurses. These individuals were appointed by their respective organizations, including the American College of Obstetricians and Gynecologists (ACOG), Society for Maternal-Fetal Medicine, Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), American College of Nurse-Midwives, and Centers for Disease Control and Prevention, and all authors have state or national experience with maternal mortality review. The review process, organization, and forms were modeled after Illinois and California maternal mortality review processes and forms (Kilpatrick et al., 2012; personal communication, Elizabeth Lawton, CA Department of Public Health, Maternal Child and Adolescent Health Division and Elliot Main, Department of Obstetrics and Gynecology, California Pacific Hospital, 2013).

The following recommendations for the development and maintenance of a severe maternal morbidity review process are intended as guidelines and could be modified at individual centers. This process is consistent with The Joint Commission's template for root cause analysis to be employed for sentinel events (The Joint Commission [TJC], 2014). Of note, maternal deaths are considered sentinel events and thus reviewed by root cause analysis. We suggest that the morbidity review process herein described could be modified and used for maternal death review if appropriate for local process.

1. **Severe Maternal Morbidity Review Committee Organization**
   a. Hospital or birth facility leadership appoints a standing Severe Maternal Morbidity Committee. This may require new bylaws.
   b. Committee membership is multidisciplinary and reflects the professional make-up of clinicians and staff who provide or support maternity services institutionally. Example members are obstetricians, family physicians, certified nurse–midwives, and advanced-practice nurses; anesthesia personnel; registered nurses providing antepartum, intrapartum, or postpartum care; and members of the hospital quality improvement team and administration. A public member or patient advocate could be considered. Ad-hoc members representing other expertise can be invited as deemed necessary. If there are learners such as residents or fellows, they should be represented as well.
   c. The Committee has a chairperson, an individual responsible for minutes, and an individual responsible for data management.
2. **Severe Maternal Morbidity Review Process**
   a. At a minimum, the Committee will review all pregnant or postpartum women receiving four or more units of blood or admitted to an ICU. These criteria may be expanded as needed by an individual center.
   b. For each case of severe maternal morbidity, a debriefing with involved care providers, which does not replace the standardized review, is suggested and ideally occurs proximate to the severe maternal morbidity. Information obtained from the debriefing can be retained for the standardized review process. There are several debrief tools available (https://www.cmqcc.org/resources/1533/download and http://www.med.unc.edu/ticker/toolkit/teamwork/brief-debrief-form). Another example is the debrief tool developed by C. Lee and D. Goffman (Figure 1).
   c. The severe maternal morbidity review should be conducted at each facility, if possible.
   d. Centers with a low volume of deliveries or obstetric providers may opt to partner with