AIM

ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Obstetric Hemorrhage Bundle

Implementation Resources

Section	Resource	Description	Link
Readiness			
Readiness	ACOG Committee Opinion No. 590 *ACOG, 2014*	Patient care emergencies may occur at any time in any setting, particularly the inpatient setting. It is important that obstetrician-gynecologists prepare themselves by assessing potential emergencies, establishing early warning systems, designating specialized first responders, conducting emergency drills, and debriefing staff after actual events to identify strengths and opportunities for improvement. Having such systems in place may reduce or prevent the severity of medical emergencies.	
Readiness	OB Hemorrhage Toolkit V 3.0 *CMQCC, 2022*	The Improving Health Care Response to Obstetric Hemorrhage toolkit was developed by the Obstetric Hemorrhage Task Force to assist obstetric providers, clinical staff, hospitals and healthcare organizations with timely recognition and response to hemorrhage. Obstetric hemorrhage remains a leading and preventable cause of maternal mortality and severe maternal morbidity, a life-threatening complication during pregnancy.	
Readiness	Obstetric Care Consensus No 5 Summary: Severe Maternal Morbidity: Screening And Review *ACOG, 2016*	This document builds upon recommendations from peer organizations and outlines a process for identifying maternal cases that should be reviewed. Severe maternal morbidity is associated with a high rate of preventability, similar to that of maternal mortality. It also can be considered a near miss for maternal mortality because without identification and treatment, in some cases, these conditions would lead to maternal death. Identifying severe morbidity is, therefore, important for preventing such injuries that lead to mortality and for highlighting opportunities to avoid repeat injuries. The two-step screen and review process described in this document is intended to efficiently detect severe maternal morbidity in women and to ensure that each case undergoes a review to determine whether there were opportunities for improvement in care. Like cases of maternal mortality, cases of severe maternal morbidity merit quality review. In the absence of consensus on a comprehensive list of conditions that represent severe maternal morbidity, institutions and systems should either adopt an existing screening criteria or create their own list of outcomes that merit review.	

Section	Resource	Description	Link
Readiness	Consensus Bundle on Obstetric Hemorrhage *Anesthesia and Analgesia, 2015*	Hemorrhage is the most frequent cause of severe maternal morbidity and preventable maternal mortality and therefore is an ideal topic for the initial national maternity patient safety bundle. These safety bundles outline critical clinical practices that should be implemented in every maternity unit. They are developed by multidisciplinary work groups of the National Partnership for Maternal Safety under the guidance of the Council on Patient Safety in Women's Health Care. The safety bundle is organized into four domains: Readiness, Recognition and Prevention, Response, and Reporting and System Learning. Although the bundle components may be adapted to meet the resources available in individual facilities, standardization within an institution is strongly encouraged. References contain sample resources and "Potential Best Practices" to assist with implementation.	
Readiness	TeamSTEPPS 2.0 *AHRQ, 2019*	The Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense (DoD) have developed TeamSTEPPS®, a teamwork system that offers a powerful solution to improving collaboration and communication within your institution. Teamwork has been found to be one of the key initiatives within patient safety that can transform the culture within health care. Patient safety experts agree that communication and other teamwork skills are essential to the delivery of quality health care and to preventing and mitigating medical errors and patient injury and harm.	
Readiness	Management of Major Obstetric Hemorrhage *Indian Journal of Anesthesia, 2018*	One of the most important causes of maternal mortality is major obstetric hemorrhage. Major hemorrhage can occur in patients either during the antepartum period, during delivery, or in the postpartum period. Early recognition and a multidisciplinary team approach in the management are the cornerstones of improving the outcome of such cases. The management consists of fluid resuscitation, administration of blood and blood products, conservative measures such as uterine cavity tamponade and sutures, and finally hysterectomy. Blood transfusion strategies have changed over the last decade with emphasis on use of fresh frozen plasma, platelets, and fibrinogen. Point-of-care testing for treating coagulopathies promptly and interventional radiological procedures have further revolutionized the management of such cases.	

Section	Resource	Description	Link
Readiness	Development of an Obstetric Hemorrhage Response Intervention: The Postpartum Hemorrhage Cart and Medication Kit *The Joint Commission Journal on Quality and Patient Safety, 2022*	Postpartum hemorrhage (PPH) is the leading cause of maternal morbidity in the United States, and timely treatment is imperative. Delay in treatment of PPH can lead to significant blood loss and increased morbidity and mortality. Supplies and medications essential for treating PPH are typically not located in close proximity to the hemorrhaging patient, leading to inefficiency and delay in timely response to hemorrhage.	
Readiness	Safety Program for Perinatal Care: Experiences From the Frontline *AHRQ, 2017*	This report features five case studies that describe the implementation of the AHRQ Safety Program for Perinatal Care in labor and delivery (L&D) units at University of Arkansas for Medical Sciences, Onslow Memorial Hospital, Winnie Palmer Hospital for Women & Babies, Carle Foundation Hospital, and WakeMed Health & Hospitals System. Although all L&D units shared the same framework for safety improvements, each embarked on a unique implementation path that was best suited to its local needs and resources. The national implementation team has captured these experiences through visits to these organizations and interviews with unit staff and leadership.	
Recognition			
Recognition	Obstetric Hemorrhage Outcomes by Intrapartum Risk Stratification at a Single Tertiary Care Center *Cureus, 2019*	Postpartum hemorrhage is a leading cause of maternal mortality worldwide. Performance of a postpartum hemorrhage risk assessment prior to delivery has been recommended to identify patients at higher risk for hemorrhage to support advanced planning for optimal response. The objective of this quality improvement initiative is to evaluate the transfusion and hemorrhage rates for patients at low, moderate, and high risk for postpartum hemorrhage by utilizing standardized risk assessment.	
Recognition	AWHONN Practice Brief: Quantification of Blood Loss *AWHONN, 2021*	Inaccurate evaluation of blood loss can lead to delays in response and management of postpartum. Visual estimation of blood loss (EBL) has long been established as an inaccurate measure that can potentially lead to delays in timely recognition and response to obstetric. Visual estimation increases the likelihood to underestimate blood loss when volumes are high and to overestimate blood loss when volumes are low. Delays in recognition and management result in costly treatment for women having postpartum hemorrhage	

Section	Resource	Description	Link
Recognition	Guidelines for Active Management of the Third Stage of Labor using Oxytocin: AWHONN Practice Brief Number 12 *AWHONN, 2021*	The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) recommends the standardized use of oxytocin for active management of the third stage of labor to prevent postpartum hemorrhage, maximize maternal safety, and reduce instances of preventable morbidity and mortality.	
Recognition	Canadian Blood Services Professional Education: Chapter 11 - Massive Hemorrhage and Emergency Transfusion *Canadian Blood Services, 2021*	Successful management of massive hemorrhage requires a coordinated, pre-planned effort that involves the entire care team. It is ideally guided by an institution-specific protocol that incorporates all of the basic principles for the management of rapidly bleeding patients.	
Recognition	Obstetric Emergency Drills: Trainers Manual *Institute for Clinical Effectiveness and Health Policy, Mother and Child Health Research Department, 2021*	Obstetric emergency drills are scenario-based trainings conducted in 'real time' in the normal working environment. These drills aim to test both the local emergency response system and protocols that facilities have in place to manage obstetric emergencies. Drills can also be used to test professional teamwork dynamics and individual providers' skill and knowledge. An additional advantage of using drills is their low cost compared to setting up sophisticated training centers, and thus may be more appropriate in low- and middle-income countries. The World Health Organization has recognized the development of locally effective and inexpensive solutions for training caregivers as a priority.	
Recognition	Readiness: Utilizing bundles and simulation* *Seminars in Perinatology, 2022*	Postpartum hemorrhage is an important contributor to maternal morbidity, and is one of the most common worldwide causes of preventable maternal mortality. Preventing significant morbidity and mortality from postpartum hemorrhage necessitates preparedness on both a unit and patient level. Our objectives are to define a bundle, to review the elements of the Council on Patient Safety in Women's Healthcare Obstetric Hemorrhage Bundle and to highlight simulation-based training opportunities, focusing on readiness for this significant obstetric emergency.	
Recognition	Postpartum Hemorrhage *March of Dimes, 2020*	Postpartum hemorrhage (also called PPH) is when a woman has heavy bleeding after giving birth. It's a serious but rare condition. It usually happens within 1 day of giving birth, but it can happen up to 12 weeks after having a baby. About 1 to 5 in 100 women who have a baby (1 to 5 percent) have PPH.	

*Resource Behind Paywall

Section	Resource	Description	Link
Response			
Response	Obstetric Hemorrhage Toolkit V 3.0 *CMQCC, 2022*	The California Maternal Quality Care Collaborative (CMQCC) and multidisciplinary volunteers have reviewed and updated the Toolkit "Improving Health Care Response to Obstetric Hemorrhage V3.0" to address causes of maternal morbidity and mortality due to obstetric hemorrhage. This Toolkit continues to incorporate the latest evidence and best practices to address obstetric hemorrhage, as well as the recently released Joint Commission Standards for Maternal Safety. Managing healthcare response to obstetric hemorrhage remains a key priority. See Appendix for standardized management plans, Simulation/Drills, MTP Policies, Medications, rapid response teams and support for patients/caregivers after an event.	
Response	National Partnership for Maternal Safety: Consensus Bundle on Support After a Severe Maternal Event *JOGNN, 2020*	Supporting women, families, and clinicians with information, emotional support, and health care resources should be part of an institutional response after a severe maternal event. A multidisciplinary approach is needed for an effective response during and after the event. As a member of the maternity care team, the nurse's role includes coordination, documentation, and ensuring patient safety in emergency situations	
Response	Preparing for Clinical Emergencies in Obstetrics and Gynecology: ACOG Clinical Opinion 590 *ACOG, 2014*	Patient care emergencies may occur at any time in any setting, particularly the inpatient setting. It is important that obstetrician–gynecologists prepare themselves by assessing potential emergencies, establishing early warning systems, designating specialized first responders, conducting emergency drills, and debriefing staff after actual events to identify strengths and opportunities for improvement. Having such systems in place may reduce or prevent the severity of medical emergencies.	

Section	Resource	Description	Link
Reporting & Systems Learning			
Reporting & Systems Learning	Women's Experiences with Severe Maternal Morbidity in New York City: A Qualitative Report *New York City Department of Health and Mental Hygiene, 2020*	This publication details the results of a qualitative research study aimed at learning about mothers' needs and experiences after an SMM event. Lessons learned can help with strategic planning for maternal health programs across New York City and other jurisdictions. Key findings and lessons from this study include the following: • The style of health care providers' interactions with women and their families influenced women's experience of, and recovery from, SMM. • Generally, women preferred clinicians who utilized patient-centered interaction styles to develop mutually respectful partnerships. • Some women reported perceptions of not being listened to or believed by health providers. • Experiences of poor care led women to mistrust health care providers and facilities and influenced their decisions about whether and when to seek future, needed care. • Women's experiences of SMM were made more challenging by complex social and medical needs and stressors, including housing conditions and stability, financial insecurity, and the need to navigate multiple, uncoordinated care systems.	
Reporting & Systems Learning	Obstetric Care Consensus #5: Severe Maternal Morbidity: Screening and Review *ACOG, 2021*	Severe maternal morbidity is associated with a high rate of preventability, similar to that of maternal mortality. It also can be considered a near miss for maternal mortality because without identification and treatment, in some cases, these conditions would lead to maternal death. Identifying severe morbidity is, therefore, important for preventing such injuries that lead to mortality and for highlighting opportunities to avoid repeat injuries. The two-step screen and review process described in this document is intended to efficiently detect severe maternal morbidity in women and to ensure that each case undergoes a review to determine whether there were opportunities for improvement in care. Like cases of maternal mortality, cases of severe maternal morbidity merit quality review. In the absence of consensus on a comprehensive list of conditions that represent severe maternal morbidity, institutions and systems should either adopt an existing screening criteria or create their own list of outcomes that merit review.	

Section	Resource	Description	Link
Reporting & Systems Learning	Respectful Management of Serious Clinical Adverse Events *IHI, 2011*	Every day, clinical adverse events occur within our health care system, causing physical and psychological harm to one or more patients, their families, staff (including medical staff), the community, and the organization. In the crisis that often emerges, what differentiates organizations, positively or negatively, is their culture of safety, the role of the board of trustees and executive leadership, advanced planning for such an event, the balanced prioritization of the needs of the patient and family, staff, and organization, and how actions immediately and over time bring empathy, support, resolution, learning, and improvement. The risks of not responding to these adverse events in a timely and effective manner are significant, and include loss of trust, absence of healing, no learning and improvement, the sending of mixed messages about what is really important to the organization, increased likelihood of regulatory action or lawsuits, and challenges by the media.	
Respectful, Equitable & Supportive Care			
Respectful, Equitable & Supportive Care	Achieving Health Equity: A Guide for Health Care Organizations *IHI, 2016*	Significant disparities in life expectancy and other health outcomes persist across the United States. Health care has a significant role to play in achieving health equity. While health care organizations alone do not have the power to improve all of the multiple determinants of health for all of society, they do have the power to address disparities directly at the point of care, and to impact many of the determinants that create these disparities.	
Respectful, Equitable & Supportive Care	Black Women Disproportionately Suffer Complications of Pregnancy and Childbirth. Let's Talk About It. *ProPublica, 2017*	About 700 to 900 women die each year from causes related to pregnancy and childbirth. And for every death, dozens of women suffer life-threatening complications. But there is a stark racial disparity in these numbers. Black mothers are three to four times more likely to die than white mothers. Nevertheless, black women's voices are often missing from public discussions about what's behind the maternal health crisis and how to address the problems.	

Section	Resource	Description	Link
Respectful, Equitable & Supportive Care	Postpartum Hemorrhage Outcomes and Race *AJOG, 2018*	A total of 360,370 women with postpartum hemorrhage from 2012 to 2014 were included in this analysis. Risk for severe morbidity was significantly higher among non-Hispanic black women (26.6%) than non-Hispanic white, Hispanic, or Asian or Pacific Islander women (20.7%, 22.5%, and 21.4%, respectively, P < .01). For non-Hispanic black compared with non-Hispanic white, Hispanic, and Asian or Pacific Islander women risk was higher for disseminated intravascular coagulation (8.4% vs 7.1%, 6.8%, and 6.8%, respectively, P < .01) and transfusion (19.4% vs 13.9%, 16.1%, and 15.8%, respectively, P < .01). Black women were also more likely than non-Hispanic white women to undergo hysterectomy (2.4% vs 1.9%, P < .01), although Asian or Pacific Islander women were at highest risk (2.9%). Adjusting for comorbidity, black women remained at higher risk for severe morbidity (P < .01). Risk for death for non-Hispanic black women was significantly higher than for nonblack women (121.8 per 100,000 deliveries, 95% confidence interval, 94.7-156.8 vs 24.1 per 100,000 deliveries, 95% confidence interval, 19.2-30.2, respectively, P < .01).	
Respectful, Equitable & Supportive Care	Reduction of Peripartum Racial and Ethnic Disparities: A Conceptual Framework and Maternal Safety Consensus Bundle *JOGNN, 2018*	Racial and ethnic disparities exist in both perinatal outcomes and health care quality. For example, Black women are three to four times more likely to die from pregnancy-related causes and have more than a twofold greater risk of severe maternal morbidity than White women. In an effort to achieve health equity in maternal morbidity and mortality, a multidisciplinary workgroup of the National Partnership for Maternal Safety, within the Council on Patient Safety in Women's Health Care, developed a concept article for the bundle on reduction of peripartum disparities. We aimed to provide health care providers and health systems with insight into racial and ethnic disparities in maternal outcomes, the etiologies that are modifiable within a health care system, and resources that can be used to address these etiologies and achieve the desired end of safe and equitable health care for all childbearing women.	
Respectful, Equitable & Supportive Care	Reduction In Racial Disparities In Severe Maternal Morbidity From Hemorrhage In A Large-Scale Quality Improvement Collaborative *AJOG, 2020*	A large-scale quality improvement collaborative reduced rates of severe maternal morbidity due to hemorrhage in all races and reduced the performance gap between black and white women. Improving access to highly effective treatments has the potential to decrease disparities for care-sensitive acute hospital-focused morbidities.	

These materials were developed with support from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of a cooperative agreement with the American College of Obstetricians and Gynecologists under grant number UC4MC28042, Alliance for Innovation on Maternal Health. The contents do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov.