Driver 3: Response

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OHI 2.0
Obstetric Hemorrhage Initiative

FPQC

OHI 2.0
Obstetric Hemorrhage Initiative

Global Aim: Improve maternal health through hospital-facilitated timely recognition and treatment of obstetric hemorrhage during labor, delivery and the postpartum period.

Primary Key Driver

Response: Management for every pregnant or PP woman w/ OB hemorrhage

Respectful care is a universal component of every driver and activity

Secondary Drivers

- Use a standardized, facility-wide, stage-based, OB hemorrhage emergency management plan with checklists and escalation policies
- Debrief and Huddle
- Provide trauma-informed support for patients, their support network, and staff for all OB hemorrhages, including debriefs, follow-up, resources, and appointments

Use a standardized, facility-wide, stage-based, OB hemorrhage emergency management plan with checklists and escalation policies

Potentially Better Practices: Standardized OB Hemorrhage Emergency Management Plan

1. **Facility-Wide Protocol:**
   - Use a stage-based, checklist-driven plan with escalation policies
   - Activate OB rapid response team at Stage 2 or greater

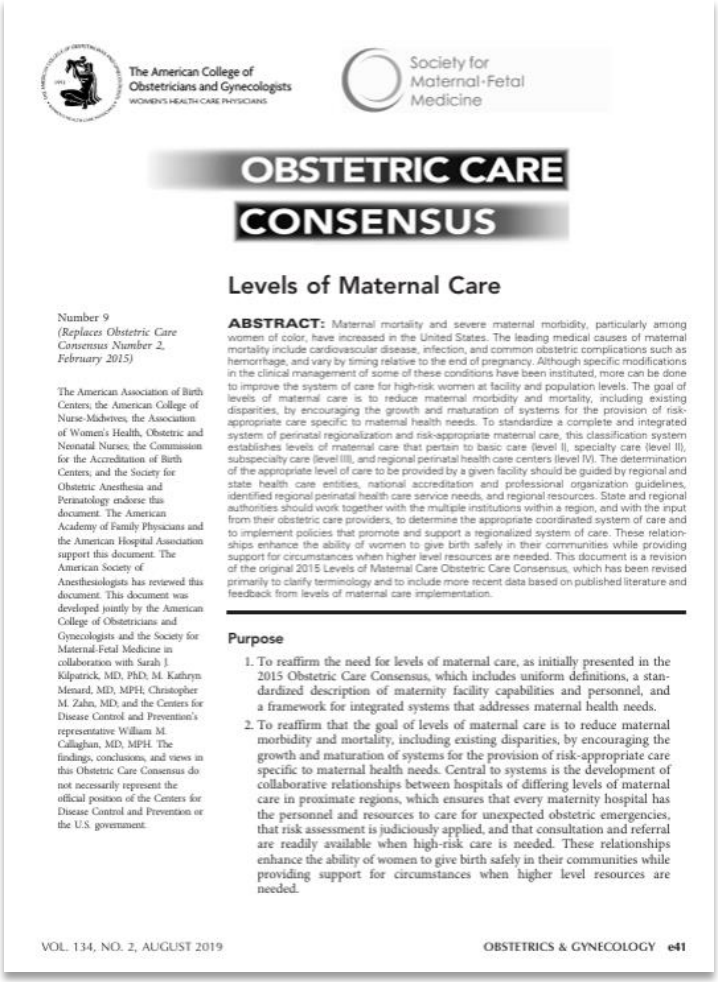
2. **Interventions:**
   - Administer evidence-based medications
   - Perform pelvic exam; consider vacuum-induced or tamponade hemorrhage control devices if bleeding persists
   - Include surgical options, trauma team, and/or interventional radiology if bleeding continues

Use a standardized, facility wide, stage-based, OB hemorrhage emergency management plan with checklists and escalation policies

Potentially Better Practices (cont.):

3. **Pain & Monitoring:**
   - Use a standardized pain assessment tool
   - Evaluate atypical pain for signs of concealed bleeding
   - Monitor closely after stabilization and/or transfer

4. **Clinical Considerations:**
   - Apply 4 Ts framework: Tone, Trauma, Tissue, Thrombin
   - Stabilize and transfer if patient's needs exceed facility resources*



The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Society for Maternal-Fetal Medicine

OBSTETRIC CARE CONSENSUS

Levels of Maternal Care

Number 9
(Replaces Obstetric Care Consensus Number 2, February 2015)

The American Association of Birth Centers; the American College of Nurse-Midwives; the Association of Women's Health, Obstetric and Neonatal Nurses; the Commission for the Accreditation of Birth Centers; and the Society for Obstetric Anesthesia and Perinatology endorse this document. The American Academy of Family Physicians and the American Hospital Association support this document. The American Society of Anesthesiologists has reviewed this document. This document was developed jointly by the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine in collaboration with Sarah J. Kilpatrick, MD, PhD; M. Kathryn Menard, MD, MPH; Christopher M. Zahn, MD; and the Centers for Disease Control and Prevention's representative William M. Callaghan, MD, MPH. The findings, conclusions, and views in this Obstetric Care Consensus do not necessarily represent the official position of the Centers for Disease Control and Prevention or the U.S. government.

ABSTRACT: Maternal mortality and severe maternal morbidity, particularly among women of color, have increased in the United States. The leading medical causes of maternal mortality include cardiovascular disease, infection, and common obstetric complications such as hemorrhage, and vary by timing relative to the end of pregnancy. Although specific modifications in the clinical management of some of these conditions have been instituted, more can be done to improve the system of care for high-risk women at facility and population levels. The goal of levels of maternal care is to reduce maternal morbidity and mortality, including existing disparities, by encouraging the growth and maturation of systems for the provision of risk-appropriate care specific to maternal health needs. To standardize a complete and integrated system of perinatal regionalization and risk-appropriate maternal care, this classification system establishes levels of maternal care that pertain to basic care (level II, specialty care (level III), subspecialty care (level III), and regional perinatal health care centers (level IV). The determination of the appropriate level of care to be provided by a given facility should be guided by regional and state health care entities, national accreditation and professional organization guidelines, identified regional perinatal health care service needs, and regional resources. State and regional authorities should work together with the multiple institutions within a region, and with the input from their obstetric care providers, to determine the appropriate coordinated system of care and to implement policies that promote and support a regionalized system of care. These relationships enhance the ability of women to give birth safely in their communities while providing support for circumstances when higher level resources are needed. This document is a revision of the original 2015 Levels of Maternal Care Obstetric Care Consensus, which has been revised primarily to clarify terminology and to include more recent data based on published literature and feedback from levels of maternal care implementation.

Purpose

1. To reaffirm the need for levels of maternal care, as initially presented in the 2015 Obstetric Care Consensus, which includes uniform definitions, a standardized description of maternity facility capabilities and personnel, and a framework for integrated systems that addresses maternal health needs.
2. To reaffirm that the goal of levels of maternal care is to reduce maternal morbidity and mortality, including existing disparities, by encouraging the growth and maturation of systems for the provision of risk-appropriate care specific to maternal health needs. Central to systems is the development of collaborative relationships between hospitals of differing levels of maternal care in proximate regions, which ensures that every maternity hospital has the personnel and resources to care for unexpected obstetric emergencies, that risk assessment is judiciously applied, and that consultation and referral are readily available when high-risk care is needed. These relationships enhance the ability of women to give birth safely in their communities while providing support for circumstances when higher level resources are needed.

Resource Examples

Expert Review ajog.org

Intrauterine devices in the management of postpartum hemorrhage

Eve Overton, MD; Mary D'Alton, MD; Dena Goffman, MD

Check for updates

Obstetrical hemorrhage is a relatively frequent obstetrical complication and a common cause of maternal morbidity and mortality worldwide. The majority of maternal deaths attributable to hemorrhage are preventable, thus, developing rapid and effective means of treating postpartum hemorrhage is of critical public health importance. Intrauterine devices are one option for managing refractory hemorrhage, with rapid expansion of available devices in recent years. Intrauterine packing was historically used for this purpose, with historical cohorts documenting high rates of success. Modern packing materials, including chitosan-covered gauze, have recently been explored with success rates comparable to uterine balloon tamponade in small trials. There are a variety of balloon tamponade devices, both commercial and improvised, available for use. Efficacy of 85.9% was cited in a recent meta-analysis in resolution of hemorrhage with the use of uterine balloon devices, with greatest success in the setting of atony. However, recent randomized trials have demonstrated potential harm associated with improvised balloon tamponade use in low resource settings and the World Health Organization recommends use be restricted to settings where monitoring is available and care escalation is possible. Recently, intrauterine vacuum devices have been introduced, which offer a new mechanism for achieving hemorrhage control by mechanically restoring uterine tone via vacuum suction. The Jada device, which is is FDA-cleared and commercially available in the US, found successful bleeding control in 94% of cases in an initial single-arm trial, with recent post marketing registry study described treatment success following hemorrhage in 95.8% of vaginal and 88.2% of cesarean births. Successful use of improvised vacuum devices has been described in several studies, including suction tube uterine tamponade via Levin tubing, and use of a modified Bakri balloon. Further research is needed with head-to-head comparisons of efficacy of devices and assessment of cost within the context of both device pricing and overall healthcare resource utilization.

Key words: antihemorrhagic intervention, blood loss, intrauterine vacuum device, maternal morbidity, obstetrical hemorrhage, obstetrics, postpartum hemorrhage, pregnancy complication, uterine atony, uterine balloon tamponade, Intrauterine packing, Bakri, Jada, Ellavi, ebb, BT-Cath, Suction tube uterine tamponade

Background

Postpartum hemorrhage (PPH) is a common complication, affecting up to 5% of births, and is a leading cause of maternal morbidity and mortality worldwide.[1–4] In low- and middle-income nations where the majority of maternal deaths occur, more than 30% of maternal deaths are attributable to hemorrhage.[4] However, PPH also remains problematic in high-resource settings, including the United States, where hemorrhage accounted for 12.1% of maternal deaths from 2017 to 2019.[5] Furthermore, the rate of PPH is increasing and the majority of deaths caused by PPH are considered to be preventable.[6,7] Thus, ensuring mechanisms to rapidly and effectively treat PPH is a critically important public health priority.

Although there are multiple potential PPH etiologies, 70% to 80% are associated with uterine atony.[8] Second-line therapies for refractory hemorrhage caused by atony traditionally include a uterine balloon tamponade (UBT), manual compression maneuvers, interventional radiology procedures, and nonpneumatic antishock garments before operative intervention methods are considered.[1,9,10] There has been a recent expansion of UBT devices, and the new development of intrauterine vacuum devices present an alternative (Table). Given the recent change in technology available to manage refractory PPH, the purpose of this review was to provide a summary of the existing devices and their supporting data.

Rationale for tamponade techniques

Tamponade techniques have been used as second-line therapy for atony-related PPH before surgical intervention, typically with packing or a balloon completely filling the atonic uterine cavity to apply pressure to the bleeding myometrium. There are two theories

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M.D. reports serving in a leadership role in the American College of Obstetricians and Gynecologists It's Safe Motherhood Initiative, which has received unrestricted funding from Merck for Mothers, and serving on the board of March for Moms. D.G. reports serving on the scientific advisory board for the Jada device through Organon and serving as a principal investigator for the PEARLE and RUBY Jada trials. D.G. also reports participating in the Cooper Surgical Obstetrical Safety Council, creating postpartum hemorrhage education with Laborie, Haymarket, and PRIME, and serving as an editor for UpToDate. E.O. reports no conflict of interest.

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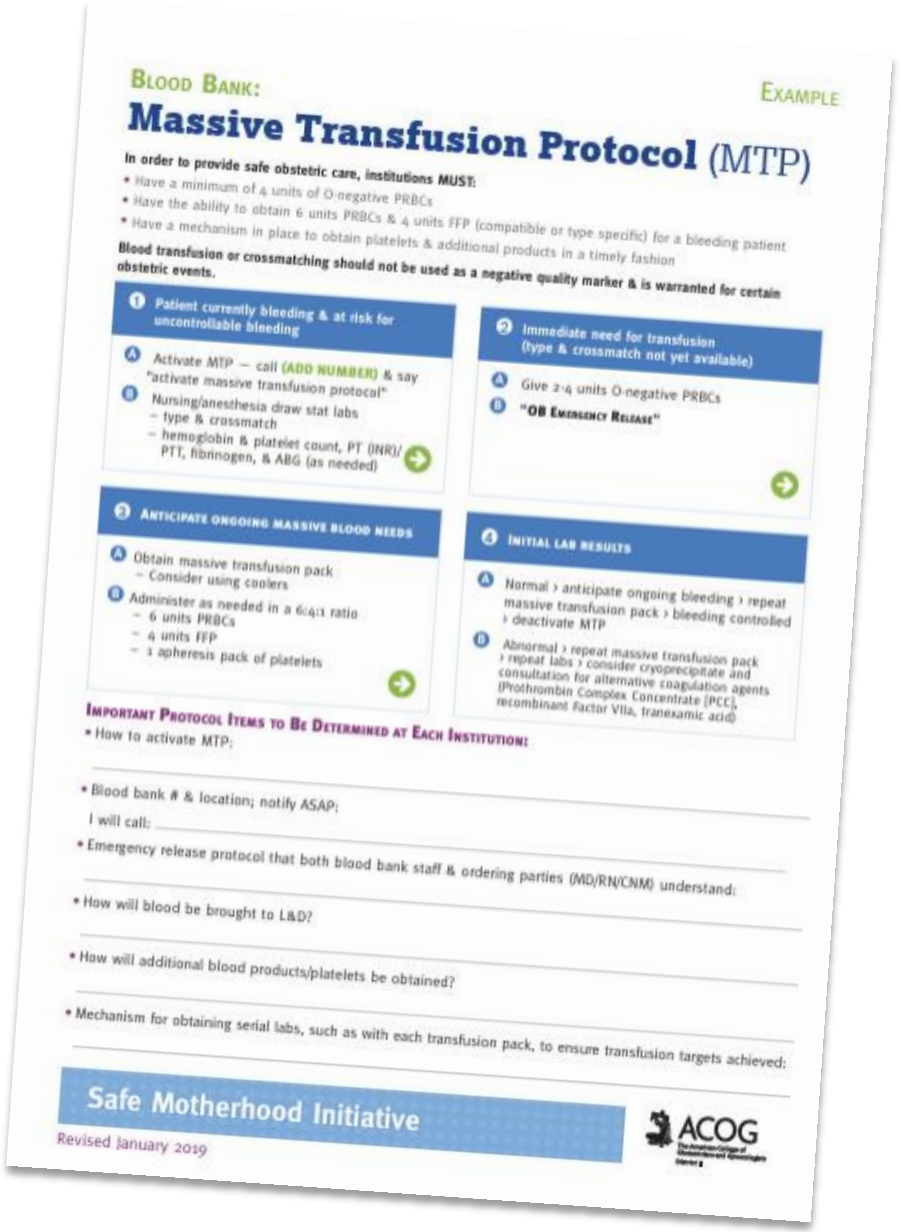
AJOG Expert Review on Intrauterine Devices

ACOG Massive Transfusion Protocol



BLOOD BANK: EXAMPLE

Massive Transfusion Protocol (MTP)

In order to provide safe obstetric care, institutions MUST:

- Have a minimum of 4 units of O-negative PRBCs
- Have the ability to obtain 6 units PRBCs & 4 units FFP (compatible or type specific) for a bleeding patient
- Have a mechanism in place to obtain platelets & additional products in a timely fashion

Blood transfusion or crossmatching should not be used as a negative quality marker & is warranted for certain obstetric events.

1 Patient currently bleeding & at risk for uncontrollable bleeding

- A Activate MTP – call (ADD NUMBER) & say "activate massive transfusion protocol"
- B Nursing/anesthesia draw stat labs
  - type & crossmatch
  - hemoglobin & platelet count, PT (INR)/PTT, fibrinogen, & ABG (as needed)

2 Immediate need for transfusion (type & crossmatch not yet available)

- A Give 2-4 units O-negative PRBCs
- B "OB EMERGENCY RELEASE"

3 ANTICIPATE ONGOING MASSIVE BLOOD NEEDS

- A Obtain massive transfusion pack
  - Consider using coolers
- B Administer as needed in a 6:4:1 ratio
  - 6 units PRBCs
  - 4 units FFP
  - 1 apheresis pack of platelets

4 INITIAL LAB RESULTS

- A Normal › anticipate ongoing bleeding › repeat massive transfusion pack › bleeding controlled › deactivate MTP
- B Abnormal › repeat massive transfusion pack › repeat labs › consider cryoprecipitate and consultation for alternative coagulation agents (Prothrombin Complex Concentrate [PCC], recombinant Factor VIIa, tranexamic acid)

IMPORTANT PROTOCOL ITEMS TO BE DETERMINED AT EACH INSTITUTION:

- How to activate MTP:
- Blood bank # & location; notify ASAP:
  I will call:
- Emergency release protocol that both blood bank staff & ordering parties (MD/RN/CNM) understand:
- How will blood be brought to L&D?
- How will additional blood products/platelets be obtained?
- Mechanism for obtaining serial labs, such as with each transfusion pack, to ensure transfusion targets achieved:

Safe Motherhood Initiative

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Revised January 2019

Debrief and Huddle

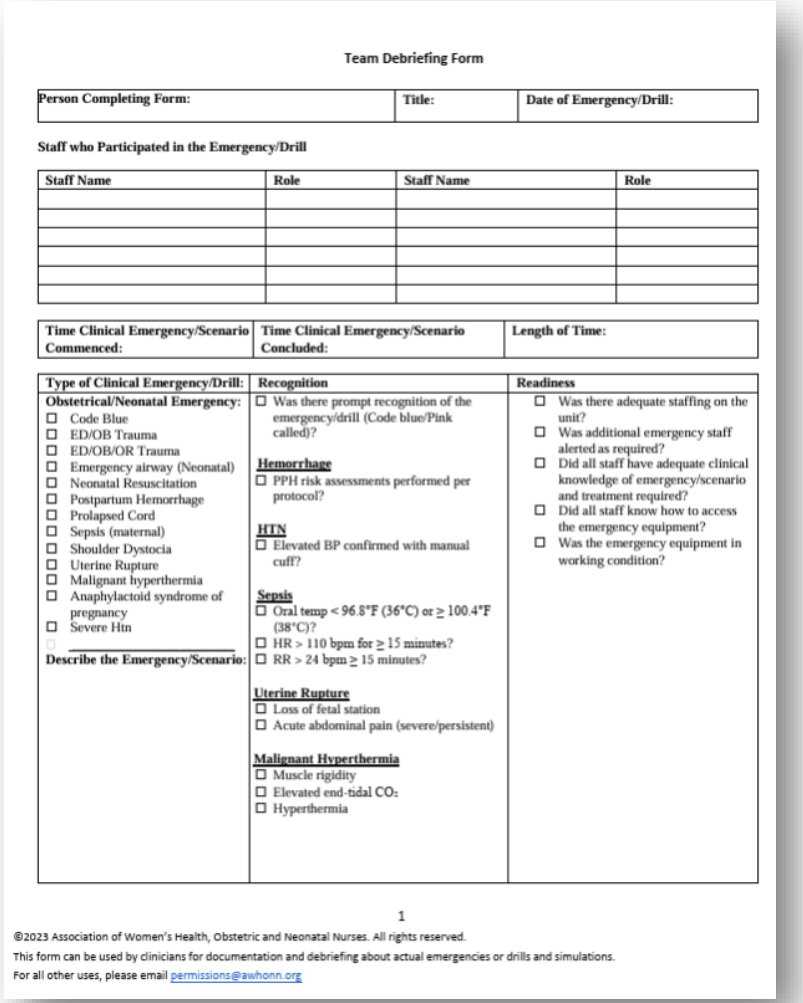
Potentially Better Practices: A standardized formal debrief process for OB hemorrhage

1. **When to Debrief:**
   - After resolution of acute hemorrhage
   - At time of transfer to postpartum or other unit to reassess and communicate hemorrhage risk

2. **How to Debrief:**
   - Conduct timely debriefs with provider, patient/family, and nursing staff
   - Use a standardized checklist to guide unit discussions and identify improvement areas

3. **Follow-Up:**
   - Refer qualifying cases to quality/peer review per organizational criteria
   - Evaluate team performance and response effectiveness

Resource Examples



Team Debriefing Form

Person Completing Form:	Title:	Date of Emergency/Drill:

Staff who Participated in the Emergency/Drill

Staff Name	Role	Staff Name	Role

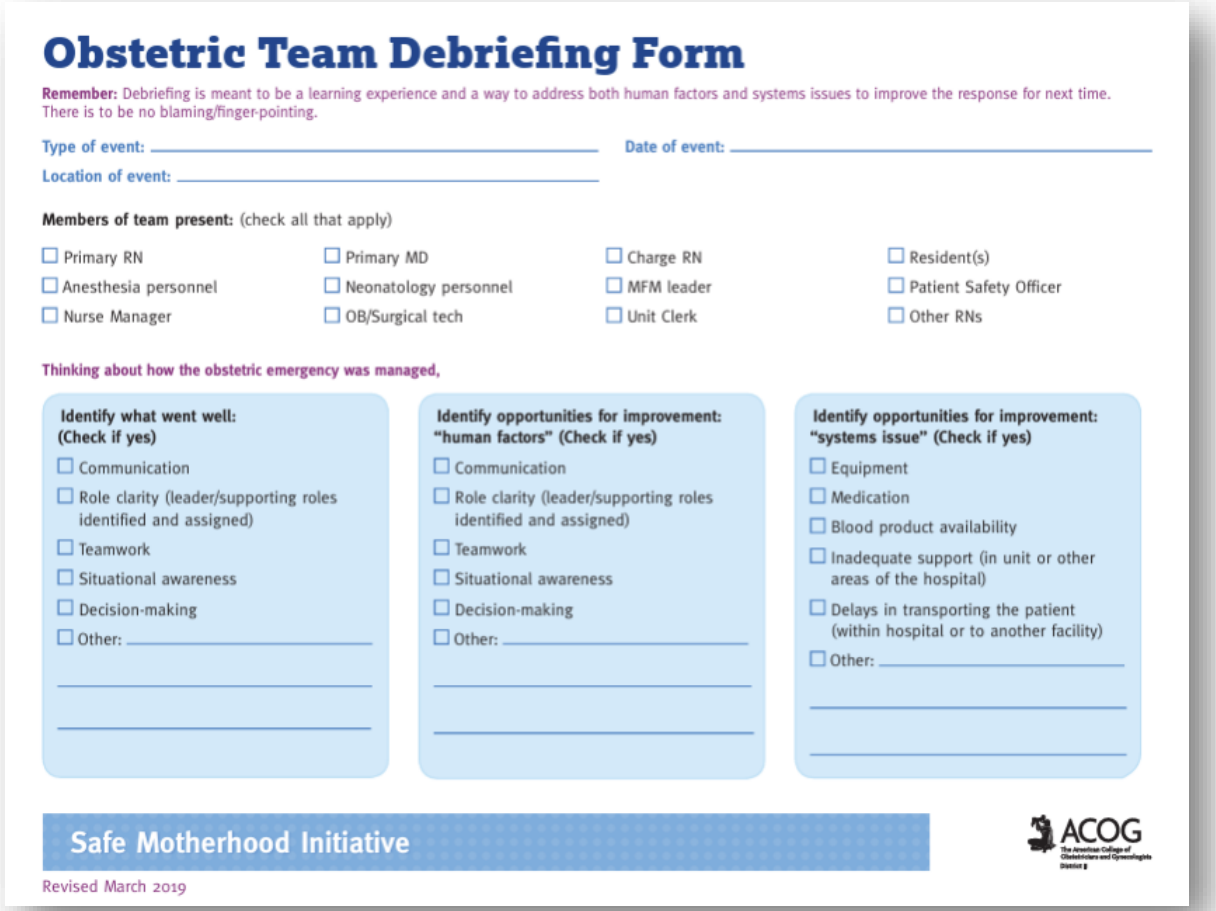
Time Clinical Emergency/Scenario Commenced:	Time Clinical Emergency/Scenario Concluded:	Length of Time:

Type of Clinical Emergency/Drill:	Recognition	Readiness
Obstetrical/Neonatal Emergency: ☐ Code Blue ☐ ED/OB Trauma ☐ ED/OB/OR Trauma ☐ Emergency airway (Neonatal) ☐ Neonatal Resuscitation ☐ Postpartum Hemorrhage ☐ Prolapsed Cord ☐ Sepsis (maternal) ☐ Shoulder Dystocia ☐ Uterine Rupture ☐ Malignant hyperthermia ☐ Anaphylactoid syndrome of pregnancy ☐ Severe Htn ☐ _____ **Describe the Emergency/Scenario:**	☐ Was there prompt recognition of the emergency/drill (Code blue/Pink called)? **Hemorrhage** ☐ PPH risk assessments performed per protocol? **HTN** ☐ Elevated BP confirmed with manual cuff? **Sepsis** ☐ Oral temp < 96.8°F (36°C) or ≥ 100.4°F (38°C)? ☐ HR > 110 bpm for ≥ 15 minutes? ☐ RR > 24 bpm ≥ 15 minutes? **Uterine Rupture** ☐ Loss of fetal station ☐ Acute abdominal pain (severe/persistent) **Malignant Hyperthermia** ☐ Muscle rigidity ☐ Elevated end-tidal CO_2 ☐ Hyperthermia	☐ Was there adequate staffing on the unit? ☐ Was additional emergency staff alerted as required? ☐ Did all staff have adequate clinical knowledge of emergency/scenario and treatment required? ☐ Did all staff know how to access the emergency equipment? ☐ Was the emergency equipment in working condition?

1

AWHONN Sample Team Debriefing Form

ACOG Obstetric Team Debriefing Form



Obstetric Team Debriefing Form

Remember: Debriefing is meant to be a learning experience and a way to address both human factors and systems issues to improve the response for next time. There is to be no blaming/finger-pointing.

Type of event: _____ Date of event: _____

Location of event: _____

Members of team present: (check all that apply)

☐ Primary RN ☐ Primary MD ☐ Charge RN ☐ Resident(s)
☐ Anesthesia personnel ☐ Neonatology personnel ☐ MFM leader ☐ Patient Safety Officer
☐ Nurse Manager ☐ OB/Surgical tech ☐ Unit Clerk ☐ Other RNs

Thinking about how the obstetric emergency was managed,

Identify what went well: (Check if yes)
☐ Communication
☐ Role clarity (leader/supporting roles identified and assigned)
☐ Teamwork
☐ Situational awareness
☐ Decision-making
☐ Other: _____

Identify opportunities for improvement: "human factors" (Check if yes)
☐ Communication
☐ Role clarity (leader/supporting roles identified and assigned)
☐ Teamwork
☐ Situational awareness
☐ Decision-making
☐ Other: _____

Identify opportunities for improvement: "systems issue" (Check if yes)
☐ Equipment
☐ Medication
☐ Blood product availability
☐ Inadequate support (in unit or other areas of the hospital)
☐ Delays in transporting the patient (within hospital or to another facility)
☐ Other: _____

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Revised March 2019

Trauma-Informed Debrief & Multidisciplinary Review

Healing After an Adverse Event

Care Team	Patient and Support Network
Real time clinical debrief	Short interval post event debrief
Collaborative documentation review	Ongoing conversation and care team accessibility for questions
Peer support	Emotional support team member connection (e.g. social worker, chaplain, psychiatry, psychology)
Emotional support debrief	Referral to resources (e.g., community resources)
Referral to resources	Short interval contact post discharge

Adapted from ACOG District II Safe Motherhood Initiative

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Provide trauma-informed support for patients, their support network, and staff for all OB hemorrhages, including debriefs, follow-up, resources, and appointments

Potentially Better Practices: Trauma-Informed Support for OB Hemorrhage

1. **Respectful, Clear Communication:**
   - Explain clinical concerns and management plans before any physical interventions
   - Use qualified interpreters for patients and support network when needed

2. **Real-Time and Ongoing Support:**
   - Assign a liaison to update the patient and support network during emergencies
   - Include this communication in emergency checklists

Provide trauma-informed support for patients, their support network, and staff for all OB hemorrhages, including debriefs, follow-up, resources, and appointments

Potentially Better Practices (cont.):

3. **Post-Hemorrhage Follow-Up:**
   - Provide a written summary of the event to the patient and family
   - Conduct debrief with provider, RN, and patient/support network in a private setting
   - Support infant feeding preferences during recovery

4. **Mental Health & Well-Being:**
   - Screen for postpartum depression and PTSD
   - Refer to appropriate behavioral health resources as needed

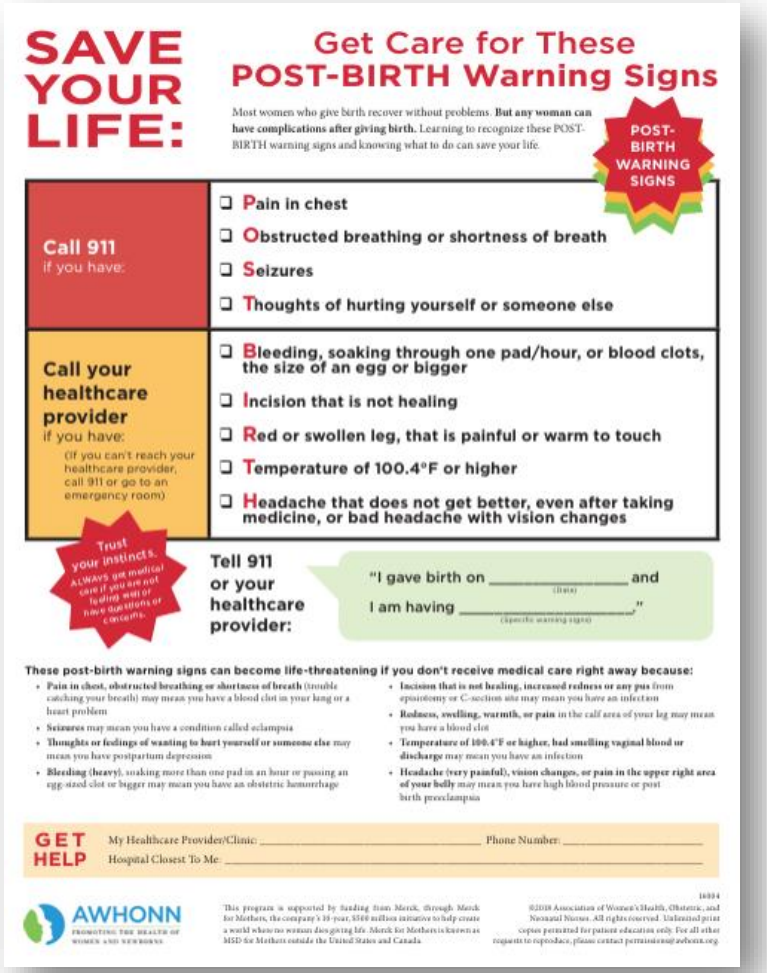
Resource Examples

The SHARE Approach

AHRQ's SHARE Approach is a clinician-led shared decision-making model with five essential elements for meaningful dialogue with patients exploring benefits, harms, and risks of options and what matters most to them. AHRQ offers a free workshop curriculum to train clinicians in skills and techniques to work with patients to make the best possible healthcare decisions.

AHRQ Share Approach

AWHONN POST-BIRTH Warning Signs



SAVE YOUR LIFE:

Get Care for These POST-BIRTH Warning Signs

Most women who give birth recover without problems. **But any woman can have complications after giving birth.** Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

POST-BIRTH WARNING SIGNS

Call 911 if you have:

- ❑ Pain in chest
- ❑ Obstructed breathing or shortness of breath
- ❑ Seizures
- ❑ Thoughts of hurting yourself or someone else

Call your healthcare provider if you have:
(If you can't reach your healthcare provider, call 911 or go to an emergency room)

- ❑ Bleeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger
- ❑ Incision that is not healing
- ❑ Red or swollen leg, that is painful or warm to touch
- ❑ Temperature of 100.4°F or higher
- ❑ Headache that does not get better, even after taking medicine, or bad headache with vision changes

Trust your instincts. ALWAYS get medical care if you are not feeling well or have questions or concerns.

Tell 911 or your healthcare provider:

"I gave birth on _____ (date) and I am having _____ (specific warning signs)."

These post-birth warning signs can become life-threatening if you don't receive medical care right away because:

- **Pain in chest, obstructed breathing or shortness of breath** (trouble catching your breath) may mean you have a blood clot in your lung or a heart problem
- **Seizures** may mean you have a condition called eclampsia
- **Thoughts or feelings of wanting to hurt yourself or someone else** may mean you have postpartum depression
- **Bleeding (heavy)**, soaking more than one pad in an hour or passing an egg-sized clot or bigger may mean you have an obstetric hemorrhage
- **Incision that is not healing, increased redness or any pus** from episiotomy or C-section site may mean you have an infection
- **Redness, swelling, warmth, or pain** in the calf area of your leg may mean you have a blood clot
- **Temperature of 100.4°F or higher, bad smelling vaginal blood or discharge** may mean you have an infection
- **Headache (very painful), vision changes, or pain in the upper right area of your belly** may mean you have high blood pressure or post birth preeclampsia

GET HELP My Healthcare Provider/Clinic: _____ Phone Number: _____
Hospital Closest To Me: _____

AWHONN
PROMOTING THE HEALTH OF WOMEN AND NEWBORNS

This program is supported by funding from Merck, through Merck for Mothers, the company's 10-year, $500 million initiative to help create a world where no woman dies giving life. Merck for Mothers is known as MSD for Mothers outside the United States and Canada.

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Any Questions?