National Partnership for Maternal Safety Consensus Bundle on Obstetric Hemorrhage

Steven Holt, MD, FACOG

Chair, CPCQC

November 20, 2015

Consensus Bundle on Obstetric Hemorrhage

- The Council on Patient Safety in Women's Health Care is a multiple stakeholder consortium united to provide safe healthcare for every woman.
- One of the goals of the consortium is to introduce and implement "3 bundles in 3 years"
- These bundles are Management of Severe Hypertension in Pregnancy, Maternal VTE Prevention and in July of 2015 published in the Green Journal a Consensus bundle on Obstetric hemorrhage

Consensus Bundle on Obstetric Hemorrhage

- Obstetric Hemorrhage is the most common serious complication of childbirth and the most preventable cause of maternal mortality.
- Recent data suggests the rates of obstetric hemorrhage are increasing in the United States and the developed world

Consensus Bundle on Obstetric Hemorrhage

- Standardized, comprehensive, multi-disciplinary programs have demonstrated a significant reduction in morbidity when specific actions are followed-a "bundle" approach to care.
- A workgroup of the Partnership for Maternal Safety within the Council on Patient Safety in Women's Health Care has developed this patient bundle-a set of straightforward evidence-based recommendations for practice and care processes known to improve outcomes.

Consensus Bundle on Obstetric Hemorrhage

- This document was developed by official representatives from the American Association of Blood Banks, The American Academy of Family Physicians, The American College of Nurse Midwives, ACOG, AWHONN, SMFM and the Society for Perinatal Obstetric Anesthesia and Perinatology

Definitions

- ReVITALize, an ACOG lead nomenclature consensus conference, recently revised the definition of early postpartum hemorrhage as "cumulative blood loss of greater than or equal to1000ml OR Blood loss accompanied by signs and symptoms of hypovolemia within 24 hours of delivery"
- Blood loss over 500 cc does need to be monitored and an accurate assessment of blood loss is critical since "denial and delay" is a leading reason for significant morbidity and mortality.

Definitions

- This is not a new guideline but rather represents a selection of existing guidelines and recommendations in a form that aids implementation and consistency of practice.

Action Domains

- This bundle is organized into FOUR action domains:
  - Readiness
  - Recognition and Prevention
  - Response and Reporting
  - Systems Learning with 13 key elements within these domains

Checklists

- It is anticipated that few hospitals will have all of these elements covered as the bundle becomes adopted at a facility.
- This document was designed to serve as a checklist from which to work.
- Low resource hospitals may not find all of the elements to be achievable
  - For example sufficient blood bank support for some high risk maternal conditions.
- By using this checklist patients will be identified who need to be directed/transferred to another facility prior to delivery

Consensus Bundle on Obstetric Hemorrhage

- With this in mind every facility will need to adapt this bundle to the capabilities of their facility.

- The goal is maternal safety with careful self assessment of all 13 elements at each facility.

<u>Action Domain</u>:
READINESS (Every facility)

READINESS (Every facility)

- FIVE focus areas that all facilities must have to be prepared for obstetric hemorrhage and prevent delays.

- DELAYS IN DIAGNOSIS OR TREATMENT ACCOUNT FOR MOST ADVERSE OUTCOMES

1- Hemorrhage Cart

- Contains needed supplies and is available on every unit that cares for obstetric patients.
- Input from anesthesia, nursing, pharmacy and providers needed to make certain all key supplies are present.
- Also should include specific information about management- (for example instructions for the Bakri Balloon and B-Lynch compression suture instructions).
- Every hospital needs a system in place to make sure cart is checked and supplied

2- Hemorrhage Kit

- Need immediate access to medications and hemabate requires refrigeration so meds cannot be stored on the hemorrhage cart.
- The most commonly used medications should all be included in the kits and there must be systems in place to allow easy access.
- Units should work with pharmacy to best determine storage and dispensing procedures with the use of automated medication dispensing systems programmed to release multiple medications when needed when available.

2- Hemorrhage Kit (continued)

- The Rose Hemorrhage kit is refrigerated and contains:
  - 2 doses of methergine
  - 2 800 mcg doses of cytotec,
  - Two10 unit vials of Pitocin
- It is returned to pharmacy after opened to be re-stocked.
- Hemorrhage drills should include monitoring the time it takes to access and dispense uterotonics

3- Response Team

- Who is always called, who is sometimes called-best to have a text page system or some other standardized method to notify key members of the team.
- This should also be included in drills-"CODE WHITE" location, patient and Doctor name.

3- Response Team (continued)

- Notify OB provider, Resident, Deck Doc/Hospitalist, Anesthesia, Blood Bank and Lab, Nursing Supervisor, Pharmacy
- And, if available and needed, GYN/ONC or Perinatology if need to go to Hysterectomy or other operative procedure.
- Social Services and Chaplain if available.
  - At Rose we include other OB unit charge nurses, Respiratory Therapy and have a process to notify Interventional Radiology if needed

4- Blood Bank and Massive Transfusion Protocol

- Must have a process in place for emergency release of O- blood and the capability to rapidly obtain type specific Packed PBCs and FFP.
- Need relationship with blood distribution centers for immediate blood shipment.
- IF IN A LOW-RESOURCE AREA AND TRANSPORT IS NECESSARY HAVE THE TRANSPORT TEAM BRING PLATELETS WITH THEM.

4- Blood Bank and Massive Transfusion Protocol (continued)

- Develop an algorithm for blood product release and administration.

- This should include when labs are drawn and what labs are drawn.1:1 or 6:4 or 2:1 PRBC/FFP better suited to replace what is lost and add platelet pack every 6-8 units of PRBCs.

4- Blood Bank and Massive Transfusion Protocol (continued)

- At Rose Medical Center, cryoprecipitate after 8 units PRBCs
  - HIGH RISK PATIENTS (PLACENTA ACCRETA AND OTHERS) SHOULD HAVE MATERNAL TRANSFER PRIOR TO DELIVERY IN LOW RESOURCE AREAS

5- Hemorrhage Drills

- Unit based drills following staff education on a regular basis.
- This should include all members of the team to review and imprint the protocol and practice teamwork.
- Include everyone who would be involved with an obstetric hemorrhage and debrief with all team members to assess what went well, and what could have gone better-share learning and look at potential changes in your process.
- Could include educational component-Bakri balloon placement (for example or Compression suture instruction for your Docs)

<u>Action Domain</u>:
RECOGNITION AND PREVENTION
(Every patient)

Assessment of Hemorrhage Risk

- Identification of risk factors will improve readiness and surveillance, increase the use of preventive measures (Cell-saver for Jehovah's witness) and will make a rapid and aggressive response more likely when hemorrhage occurs.
- Risk assessment should occur at multiple occasions- antepartum in hospital or office, admission to L and D, when in active or prolonged labor, if chorioamnionitis occurs and on transfer to postpartum unit.

Assessment of Hemorrhage Risk (continued)

- Make sure you have available blood products if needed for a specific patient and support personnel and if you don't have the capability to care for a high risk patient transfer to a regional care center that does.
- There are some risk assessment tools that will help predict about 25% of patients at significant hemorrhage risk.

Accurate Blood Loss Assessment

- "A glance and a guess" is not a good approach.
- Inaccurate assessment is a big contributor to delayed response since we typically under-estimate blood loss by 33-50% when there is a significant hemorrhage.
- Visual Aids are helpful and must be reinforced every 9 months or so due to skill delay.
  - You could post visual reminders on your units and hemorrhage carts.

Accurate Blood Loss Assessment (continued)

- Appropriate and timely management is dependent on accurate and cumulative blood loss.
- At Rose, our unit weighs pads to assist in accurate determination of blood loss.
  - Some EHRs have built in calculation aids.

Active Management of the 3rd stage of labor

- A 2013 Cochrane review found that prophylactic IV infusion or IM injection of pitocin remains the most effective agent with the fewest side effects compared to ergot alkaloids (nausea and vomiting) or misoprostol (hyperpyrexia).
- Every facility should have an oxytocin policy for the immediate post partum period and AWHONN, ACOG, WHO and AAFP all recommend oxytocin administration after all births.

Active Management of the 3rd stage of labor (continued)

- Timing of administration may be after delayed cord clamping, delivery of the anterior shoulder or after placental delivery-no difference in incidence of hemorrhage.
- If no risk factors for bleeding informed patients may choose to opt out and can be supported in their decision to do so.

<u>Action Domain:</u>
RESPONSE (Every hemorrhage)

Obstetric Hemorrhage Emergency Management Plan ("Code White")

- Every delivery unit should have a detailed management plan to respond to obstetric hemorrhage.
- Since there is a diverse group of etiologies it is critical to rapidly determine the cause or the team will be led down the incorrect management path which could lead to serious consequences.
- UTERINE ATONY ACCOUNTS FOR 70% OF CASES HOWEVER A CAREFUL EXAMINATION WITH GOOD LIGHTING AND EXPOSURE IS IMPORTANT TO IDENTIFY LACERATIONS OR RETAINED PLACENTA.

Obstetric Hemorrhage Emergency Management Plan ("Code White")

- Concealed or Intra-abdominal etiologies also must be considered in the differential dependent on the patient's presentation.
- A stage based plan will facilitate an organized stepwise response to blood loss and maternal warning signs.
- A Posted Postpartum Hemorrhage Algorithm and "Code White" policy will provide direction in determining the diagnosis and rapidly mobilizing the response team, defining their roles and creating a communication plan.
- Medication access, equipment-hemorrhage cart and ancillary personnel also must be a part of the plan.

Obstetric Hemorrhage Emergency Management Plan ("Code White")

- Standardization of process, training and drills will improve response and outcomes.
- This should be embedded in EHR documentation and order sets, documentation tools and pop-up alerts to aid clinicians.
- The California Maternal Quality Care Collaborative and other state collaborative websites all have specific plans you can use at your institution.
- There are studies documenting improvement in hemorrhage care where these plans are instituted

Support Program for Patients, Families AND Staff

- Severe maternal hemorrhage is a traumatic event for everyone involved- the mother, the family and the team.
- A usually joyful experience can turn to disaster in moments.
  - Family members are often moved from the bedside when the team goes into action to rapidly assess and treat this emergency.
  - This can leave everyone involved shaken and in need of support.

Support Program for Patients, Families AND Staff

- The patient and her family need timely information and reassurance and to discuss the event.
- They may need support from clergy or other support services.
- They are at risk for PTSD which can occur even with a satisfactory clinical outcome.
- The Team members all need to debrief after the incident and have access to counseling if needed.

<u>Action Domain</u>:
REPORTING AND SYSTEMS LEARNING (Every Unit)

A culture of Huddles and Debriefs- Team STEPPS

- Briefs, huddles and debriefs need to be routine.
- Briefs are planning meetings used to form the team, assign responsibilities and engage the entire team in planning the care for the patient.
- Huddles are follow up ad hoc team meetings to regain situational awareness and discuss critical issues that come up in the care of the patient. These are open conversations and everyone must have a voice if there are any concerns about the condition or care of the patient.

A culture of Huddles and Debriefs- Team STEPPS

- Debriefs are short informal feedback sessions that occur after events designed to identify opportunities for improvement, address system or equipment concerns in real time after an event.
- THIS IS BUILT INTO THIS FRAMEWORK TO REMIND ALL TEAMS AND TEAM MEMBERS TO COMMUNICATE WITH EACH OTHER THROUGHOUT THE EPISODE OF CARE.

A culture of Huddles and Debriefs- Team STEPPS

- As teams become experienced with these tools teams are more aware of their roles and better able to identify and fix system issues and grow and improve.

- IT CAN CHANGE A CULTURE!

Multidisciplinary review of Serious Hemorrhages (Root Cause Analysis)

- Formal meetings with multidisciplinary review involving all staff involved in the patient's care, unit and facility leadership and risk management.
- Purpose is to identify system issues or breakdowns that may have impacted the outcome.
- Some systems have a multi-disciplinary Perinatal Quality Committee which would be an ideal body to perform this NON-JUDGMENTAL review.

Multidisciplinary review of Serious Hemorrhages (Root Cause Analysis)

- Successful approaches and creative problem solving at the time of a serious hemorrhage can be incorporated into policy as well- there is positive learning and more so the better your facility learns to perform these reviews.
- Smaller hospitals may be assisted with quality reviews by regional referral centers.
- This function is part of the rationale for the development of Maternal Levels of Care.
- Reviews are sanctioned by the facility and protected from discovery. An event timeline is created to look at all aspects of care with contributions from all of the team members.

Monitor Outcomes and Process Metrics

- Monitoring process and outcome measures is important for the successful introduction of QI projects.
- Process measures document how a new approach-risk screening, debriefs, quantifying blood loss is actually used and can predict a facility's readiness for response to a hemorrhage event.
- This will reinforce the change process and provides "quick wins" for the team and the unit. Facilities can track adherence with the key elements of this management plan and see how this impacts performance.

Monitor Outcomes and Process Metrics

- Project success is usually measured by improved outcomes with the goal of reducing the number of obstetric hemorrhages that escalate into major blood loss.
- As of January 2015 the Joint Commission recommends this type of review for all severe obstetric hemorrhages defined as those requiring 4 or more units of PRBCs or ICU admission.
- Suggested forms for performing these reviews can be found at www.safe-healthcareforeverywoman.org and this can be tracked by institutions over time

Conclusions

- THE GOAL OF THIS BUNDLE IS THE REDUCE THE FREQUENCY OF SEVERE HEMORRHAGES AND IMPROVE MATERNAL OUTCOME.
- THE BUNDLE IS INHERENTLY MULTIDISCIPLINARY AND DESIGNED TO ESTABLISH A CULTURE OF SAFETY AT EVERY UNIT PROVIDING OBSTETRIC CARE.

Conclusions

- THIS NEEDS TO BE INDIVIDUALIZED TO EACH FACILITY DEPENDENT ON THEIR RESOURCES AND ALSO REQUIRES THAT HIGHER RESOURCE FACILITIES ASSIST OUR SMALLER UNITS TO ACCOMPLISH THIS GOAL

References

- Consensus Statement National Partnership for Maternal Safety
- Consensus Bundle on Obstetric Hemorrhage; Main et al, Obstetrics and Gynecology; Vol. 126, NO.1 July 2015

Questions?