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The MORE^{OB} Patient Safety Award Application 2012

Hospital Name: Bellin Health, Kress Birthing Center

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Title of Submission: Postpartum Hemorrhage Skills Drill and Emergency Cart

The following paragraph is to be read and signed by the MORE^{OB} Program senior level sponsor/manager at your site.

The MORE^{OB} Patient Safety Award is awarded to teams who have demonstrated exceptional commitment to improving patient safety within their obstetrical unit. Hospitals are urged to consider participation in the awards process both as recognition of their quality improvement and patient safety efforts and to assess their progress relative to the achievement of the vision and mission of the MORE^{OB} Program. All applications for the MORE^{OB} Patient Safety Award become the property of Salus Global Corporation. Descriptions of winning submissions will be published. Salus Global may use information from all applications in articles aimed at increasing awareness of the need for team based quality improvement and patient safety programs.

I understand that the honorees may be expected to participate in outreach, sharing of improvement efforts, learning and education on patient safety initiatives.

I certify that the information in this application is accurate.

Signature:

Date: 12/17/13

Title: CHIEF MEDICAL OFFICER

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For your submission, please describe your initiative utilizing the MORE^{OB} Program to improve patient safety within your department. Please use the following format.

Initiative Title (maximum of 15 words): Postpartum Hemorrhage Skills Drill and Emergency Cart

FLO.

Background and Overview:

The Kress Birthing Center continues on in their MORE^{OB} journey. The priority of keeping our patients safe is our driving force!
During Staff Education Day post partum hemorrhage (PPH) drill, our staff experienced what we felt were unnecessary delays in obtaining uterotonic medications. As a result of asking "how can we do this better?" PPH was chosen as a Module II workshop presentation and became a featured Skills Drill for the Module II Workshop.
The MORE^{OB} Core Team and our staff Operations Council worked collaboratively to create a tool kit comprised of:

1. An Emergency Cart
2. A Hemorrhage Medication Kit
3. PPH Drill Scenario
4. Acronym for PPH interventions
   - ATONOR
     - Assess (Circulation, Airway, Breathing)
     - Team (call for help)
     - Output (place a Foley)
     - Need (for medication)
     - Operating Room (plan for)

Main body of submission:

Reacting quickly to a PPH is vital. For this reason, MORE^{OB} Core Team members and OBGYN physicians created a **PPH drill scenario** and the **ATONOR acronym** to enhance the Maternity Team's learning and effectiveness during an actual emergency.
An **Emergency Cart** was created to establish a "one stop shop" for all supplies required in a PPH. The cart allows for efficient and rapid access to items needed for a PPH. The cart is kept in a centrally located equipment room. The cart contains:

- PPH Decision Tree
- Medication list—first round treatment and then 2nd round treatment with doses, routes, contraindications and how often utertonics can be repeated
- IV fluids for bolus
- Hypodermic needles
- IV start kit
- IV tubing
- Laminated sheet noting average weight of peripads and chux
- Chux

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Local solutions to local problems in real time → ownership.

- Scale
- Indwelling Foley catheter

We utilize a medication dispensing system called a Pyxis machine. While we were able to override uterotonic medications, the design of Pyxis required an untimely pause to address questions before allowing access to the medication. When two medications were needed, each one had to be searched out separately. In considering a leaner process, Pharmacy and the Core Team created a **Hemorrhage Medication Kit**. Access to the kit allows staff to readily select emergent medications (20 u Pitocin in LR, Hemabate, Methergine, and/or Cytotec) in a streamlined manner. Medications may be taken out separately or all at one time. Part of the access re-design included removal of questions that are required when taking the medications out separately which was seen as a barrier in obtaining emergency related medications. The Hemorrhage Medication Kit will increase our response time when treating a woman experiencing a PPH.
Additional process improvements are in the planning phase. The Maternity Unit is working with Pharmacy, Biomed, and EPIC analysts to replace our current 20units of Pitocin in 1000mL of LR with 30units of Pitocin in 500mL of LR. This will allow for the staff to quickly access a higher dose of Pitocin during a PPH without waiting for Pharmacy to remotely mix and deliver the higher concentration to our department. This will be implemented early in 2014.

Communication plan for the change

The PPH Skills Drill, ATONOR acronym, Emergency Cart, and Hemorrhage Medication Kit was introduced to physicians, midlevel providers, labor nurses, postpartum nurses, nursery nurses, surgical techs and unit assistants (CNA's) at the Module II Workshops in November and December, 2013. The Emergency Cart and Hemorrhage Medication Kit were rolled out on December 3, 2013. The implementation of these safety features will increase our response effectiveness to postpartum hemorrhages.

Note: Educational documents created for PPH are attached.

Summary:

Staff members continue to assess, modify and evaluate how to improve current practice and implement processes that will improve the safety of our patients. Implementation of the Emergency Cart and Hemorrhage Medication Kit will increase our response and effectiveness to postpartum hemorrhages. Utilizing the ATONOR acronym, Emergency Cart and Hemorrhage Medication kit during our PPH drills will solidify the use of these tools in real life patient situations. Ultimately our patients will benefit from this process change.

[illegible] BSN, RN, C-EFM
Signature

12/12/13
Date

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Skills Drill: Postpartum Hemorrhage

Objectives

- Differentiate between mild, moderate, and severe hypovolemic shock
- Identify risk factors for postpartum hemorrhage (PPH)
- Recognize etiologic factors for postpartum hemorrhage
- Review strategies to prevent postpartum hemorrhage
- Practice simulating #5 under Prevention: Active management of the 3rd stage of labor
- Learn **ATONOR** pneumonic for management of PPH
- Practice bimanual massage of the uterus

Materials

- Pelvis
- Placenta and Cord
- Ball (to simulate uterus)

Instructions for the Facilitator

- Review information on page one with participant(s), asking questions when appropriate
- Ready the pelvis and placenta/umbilical cord for the participant(s) to practice #5 under Prevention: Active management of the 3rd stage of labor
- Review **ATONOR** pneumonic on page two with participant(s) "walking them through a postpartum hemorrhage"
- Ready the pelvis and ball for the participant(s) to practice bimanual massage of the uterus

PPH SKILLS DRILL

Definition of PPH: Blood loss > 500cc in a vaginal delivery and > 1000cc in a cesarean delivery

* **The amount of blood loss required to cause hemodynamic instability will depend on the preexisting health status of the woman. It is more likely to occur in conditions such as anemia, dehydration, and/or preeclampsia.**

Degrees of hypovolemic shock:

MILD: < 20% blood loss **S&S's:** diaphoresis, delayed capillary refill, cool extremities, anxiety

MODERATE: 20-40% blood loss **S&S's:** above plus, tachypnea, tachycardia, postural hypotension, oliguria

SEVERE: > 40% blood loss **S&S's:** above plus, hypotension, agitation/confusion, hemodynamic instability

RISK FACTORS: Previous PPH, macrosomia, multiple gestation, polyhydramnios, precipitous delivery, prolonged labor, high parity, induction of labor, fever, prolonged ROM, fibroid uterus, placenta previa, uterine anomalies, tocolytics, previous uterine surgery, incomplete placenta at delivery, atonic uterus, operative delivery, preexisting coagulopathy, fetal demise, antepartum hemorrhage.

* **IF RISK FACTORS PRESENT ANTICIPATE AND PREPARE FOR PPH!**

It is helpful to think of the causes of PPH in terms of the 4 T's:

TONE: uterine atony, bladder distention

TISSUE: retained placenta or clots, uterine inversion

TRAUMA: uterine, cervical, vaginal, or perineal lacerations

THROMBIN: pre-existing or acquired coagulopathy (DIC)

PREVENTION: Active management of the 3rd stage of labor

1. **Use of uterotonic agents given after delivery of the anterior shoulder or after delivery of the baby if the physician prefers:** Oxytocin 10 U IM **OR** Oxytocin 20-40 U in 1000cc NS or LR IV at 100-150ml/H. After the placenta is delivered increase IV to 500ml/h.
2. **Timing of the clamping of the umbilical cord:** After delivery of a **"well appearing"** infant, consider waiting 1-2 minutes before clamping and dividing the cord.
3. **Obtain cord blood gases:** arterial and venous.
4. **Immediately palpate the uterine fundus:** to confirm that the uterus is contracted.
5. **Wait for signs of placental separation:** vaginal bleeding or laxity of the umbilical cord. Maintain tension on the umbilical cord by pulling gently while at the same time applying suprapubic counter traction on the uterus with the other hand. **DO NOT MASSAGE; it may cause increased blood loss!** Gentle digital exam along the cord will determine whether the placenta is at the cervix. Pulling hard may cause uterine inversion or tearing of the cord.
6. **If the placenta has not delivered after 15 minutes and Oxytocin has not been administered yet, give it at this time. 50% of placentas deliver within 15 minutes. After 30 minutes the risk of PPH is six times higher.**

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MANAGEMENT OF PPH: Pneumonic ***ATONOR***

(A) ***Assess CABs*** – circulation, airway and breathing. Remember that the compensatory response to blood loss in these women is excellent and may give caregivers a false sense of security.	• Assess LOC! Talk to and observe your patient. • Monitor vital signs, including O_2 sat. • Start at least one large bore IV – obtain blood for CBC, TxS, or if needed have blood bank TxC for at least 2 units, and consider coagulation studies. • Run IV wide open (LR or NS, NS is preferred to LR). Oxytocin should be given rapid IV infusion: 20-40 U in 1000cc NS or LR at 500-1000ml/h **or** 10 U IM if no IV access or Intramyometrially if cardiovascular collapse. • Uterine massage. • Assess uterine fundus, **remembering that uterine atony is the most common cause of PPH.** Proceed to bimanual massage if the uterus remains boggy and bleeding persists. (The uterus is compressed between a hand in the vagina against the anterior surface of the cervix and a hand on the fundus.) • Assess vagina and cervix for tears and repair if needed. • Estimate blood loss (weigh pads and chux).
(T) Get Help! Remember that management of PPH is a ***Team*** approach involving simultaneous interventions.	• Clear communication with staff members. • Explanation to patient and her partner.
(O) Assess bladder and ***Output***	• Emptying the bladder helps to keep the uterus contracted and measuring output is a reliable way of monitoring the effectiveness of fluid resuscitation. (If a Foley is placed preferably one with a urometer.) • If the uterus is still boggy and NOT explored, explore uterine cavity to R/O retained placenta, uterine inversion or rupture.
(N) ***Need*** for meds	• Consider any of the following uterotonics: - Oxtocin is **first line.** - Methergine 0.2 mg IM. **HTN is a contraindication**. - Cytotec 400-800 mcg orally (can have pyrexia with oral doses over 600mcg) **or** 800-1000 mcg rectally (has more of a prolonged effect given rectally). - Hemabate 250 mcg IM or intramyometrially, may repeat every 15 minutes up to 8 doses. **Asthma is a contraindication.**
(O R) If the uterus is firm but bleeding continues, prepare the patient to go to the ***Operating Room***	• Get more help, SWAT, Anesthesia, blood bank. • Resuscitate with a 2nd IV, O_2 per mask at 8-10L. • If bleeding continues evaluate for acquired coagulopathy. If **abnormal** correct with FFP, cryoprecipitate, platelets, and/or RBCs, then proceed to OR if needed for possible D&C, Bakri balloon, interventional radiology, ect.

Reference: 2012 Salus Global Corporation.

Medications used for postpartum hemorrhage:

First line drug: **Oxytocin** 10 units IM or 20-40 units in 1000ml NS or LR wide open for hemorrhage.

Call pharmacy for postpartum hemorrhage bag as needed.

Second line therapy: **Misoprostol (cytotec))**

400-800mcg po or sublingual (sublingual is preferred route)

800-1000mcg per rectum

Hemabate (carboprost): CONTRAINDICATED IN ASHTMA

250mcg IM or intrauterine; may repeat every 15 min, max cumulative of 8 doses.

Methergine (erogvine maleate): CONTRAINDICATED IN HYPERTENSION

0.2 mcg IM (or IV slowly) x1, may repeat at 15 min but only IM to max of 5 doses

Average weights for peri- pads in OB

Small white peri-pad: 12gms=12ml

Large orange peri-pad: 25gm=25ml

Yellow chux: 80gm=80ml

Subtract the amount above from total weight on scale for actual amount of blood loss.