Use of Massive Transfusion Protocol in the Management of Obstetrical Hemorrhage
Saint Agnes Hospital

Program/Project Description.
It was identified that during hemorrhagic emergencies in the obstetric patient, it was very difficult to stay ahead of the patient’s blood loss. In addition, procurement of blood products from the Blood Bank required multiple requisition forms to be filled out and multiple trips to the Blood Bank to pick up the needed blood products, which often took a vital member of the Obstetric Team away from the patient’s bedside.

How was it identified?
Saint Agnes Hospital’s Women’s and Children’s Services actively works to provide safe comprehensive, patient focused care to mothers and their infants. Annually all of the Perinatal staff participates in Critical Events Team Training using simulation to practice teamwork skills in “real-life” emergencies. Following a simulation training involving a postpartum hemorrhage event, the participants debriefed and determined that
1) Supplies and emergency medications were not readily available and that Team members made multiple trips away from the patient in order to gather supplies and medications. Today the Birthing Center and the Postpartum unit each have their own large tackle box with the medications and supplies that are immediately needed to manage hemorrhage. These tackle boxes are tailored to each area’s specific needs.
2) The participants recognized that they did not have an adequate supply of blood products in a timely fashion. In the event of massive hemorrhage whether it is anticipated or unanticipated it is imperative to have an adequate supply of blood products at the bedside with short notice and with limited trips to the Blood Bank. Today, with one click of the mouse using electronic order entry an OB STAT Pack is ordered and with one trip to the Blood Bank a cooler with multiple units of packed red blood cells, fresh frozen plasma, platelets and cryoprecipitate is at the patient’s bedside.

What baseline data existed?
Anecdotal reports regarding the time it took to procure blood products in emergency events and the manpower involved to complete the requisition forms and travel to and from the Blood Bank to pick-up the blood products.

What were the goals?
1) To rapidly recognize risk factors for and or evidence of hemorrhage in the Obstetric patient
2) To minimize the negative physiologic effects of massive hemorrhage in the Obstetric patient
3) To facilitate ordering of blood products in order to provide rapid and effective blood replacement in the obstetric patient with uncontrolled bleeding.
4) Increase efficiency by keeping the clinical staff at the bedside, reducing redundant paper work and trips to and from the Blood Bank due to multiple requisitions for blood products.

How would you know if you were successful?
1) Staff satisfaction. During debriefing following 2 recent emergencies, the Anesthesia and Obstetric Teams involved reported that the speed and ease with which blood products were made available made a positive difference in the patient’s outcome.

Process.
The problem was identified during an annual critical events team training event. Following this activity the participants debriefed and developed an action plan to reduce the time and manpower required to procure blood products from the Blood Bank in an emergency situation. This problem was forwarded to the Perinatal Safety Team. A rapid cycle change team worked to develop the protocol. The team collaborated with the Blood Bank to develop an order-set for massive transfusion. In addition a clinical guideline for the acute management of obstetric hemorrhage was developed. Obstetricians, Perinatal nurses, Anesthesiologists, Department leadership were represented in this collaboration.
Solution.
An order-set was developed and added to the electronic order entry menu. This order-set allows the provider to order an OB STAT Pack which includes 4-6 units of packed red blood cells, 4 units of fresh frozen plasma, 1 pack of platelets and 4-6 units of cryoprecipitate. The provider must document indication or other explanation, which informed consent for blood products was signed, or a reason for transfusing without consent, any previous transfusion reaction and what was the reaction. In addition, a clinical guideline for the acute management of Obstetric Hemorrhage was developed.

How was it implemented?
The Perinatal Team in collaboration with the Blood Bank Team tested the process to make sure that the order-set was easily identifiable and user friendly. Next, the order-set and guideline were introduced to the Medical Staff, nursing staff during regularly scheduled Department Meetings. In addition the information was distributed by way of the Birthing Center Communication Book. The Blood Bank Staff was also educated regarding the new process/order-set. During recent M&M Conference where a postpartum hemorrhage event was discussed the massive transfusion order-set and the guidelines were reintroduced and discussed.

Measurable Outcomes.
We plan to present case studies.
We will present data demonstrating how following the implementation of the OB STAT Pack we were able to decrease the time it took to get blood products to the patient.

The Perinatal Safety Team in collaboration with the Blood Bank staff are developing further measures in an effort to demonstrate how outcomes are affected by this massive transfusion protocol.

Sustainability.
Nursing Staff reinforces use of the OB STAT Pack whenever indicated. Staff is frequently made aware of the availability of the OB STAT Pack. The ease of use and effectiveness of the order-set has been highlighted during M&M Conferences. We hope to further test the process during one of the next Obstetric Critical Events Team Training events. The Blood Bank now has a dedicated beeper for massive transfusion requests and can be used to alert the Blood Bank of a hemorrhagic emergency and the need to prepare for massive transfusion needs. In addition, the Blood Bank staff has developed a process to further streamline the completion of the sign-out forms when the blood products are picked up. In the near future we will be testing the use of the pneumatic tube system to transport blood products from the Blood Bank to the Birthing Center. We also plan to add Floseal to the OB STAT Pack.

Due to the success of the OB STAT Pack, the Blood Bank has collaborated with the Department of Surgery and the Operating Room to develop a STAT Pack for the Operating Room. The expectation is for this process to spread throughout the institution wherever massive hemorrhage may occur including but not limited to the Critical Care Units and the Emergency Department.

Role of Collaboration and Leadership.
The problem was identified during a debriefing following an Obstetric Critical Events Team Training, which simulated a postpartum hemorrhage. Team members present for the debriefing included OB providers, nurses, patient care technicians/scrub tech, Anesthesia provider, nursing and physician leadership, patient safety/performance improvement coordinator. During the debriefing several rapid cycle improvement solutions/action items were discussed. A nurse suggested an order-set that would alert the Blood Bank that massive amounts and an assortment of blood products would be emergently needed. The Perinatal Safety Team in collaboration with the Blood Bank leadership and technologists devised the new process. Senior leadership provided executive sponsorship to the Perinatal Safety Team and played an integral part in reducing barriers in order to move the new process forward and to implementation.

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