Questions used in survey for “The Use of Postpartum Hemorrhage Protocols in United States Academic Obstetric Anesthesia Units”

\*\*Skip logic was utilized\*\*

* What is your annual delivery volume?
* What is your annual cesarean delivery rate?
* Please estimate your annual postpartum hemorrhage rate? (PPH is defined as EBL >500 mL for vaginal delivery and EBL > 1000 mL for cesarean delivery)
  1. Do you have a PPH database to monitor this rate? Y/N
* For your typical non-high risk parturient, what is your standard/goal intravenous access for:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Patient Class | No IV access | 20G | 18G | 16 G |
| Vaginal Delivery |  |  |  |  |
| Elective cesarean delivery |  |  |  |  |
| Cesarean delivery following labor |  |  |  |  |

Comments/ Clarifications: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* For each of the following conditions, what is the standard blood bank status?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Patient Characteristic | Draw and Hold | T&S | T&C 1-3 U PRBC | T&C ≥4 U PRBC | T&C FFP |
| Low-risk anticipated vaginal delivery |  |  |  |  |  |
| Elective primary cesarean |  |  |  |  |  |
| Elective repeat cesarean |  |  |  |  |  |
| Cesarean delivery after period of labor |  |  |  |  |  |
| Chorioamnionitis |  |  |  |  |  |
| H/o myomectomy |  |  |  |  |  |
| Trial of labor after cesarean (TOLAC) |  |  |  |  |  |
| Intrauterine fetal demise (IUFD) |  |  |  |  |  |
| Cesarean for placenta previa |  |  |  |  |  |
| Suspected placenta accrete |  |  |  |  |  |
| Planned cesarean-hysterectomy |  |  |  |  |  |

* If you desire a type and cross, where is cross-matched blood typically kept during delivery?
  1. At the blood bank
  2. On the labor and delivery unit
  3. Location at the discretion of the attending anesthesiologist
  4. Other
* How is EBL estimated? (Please select all that apply)
  1. Visual estimation (i.e. inspection of suction canisters, saturation of surgical laparotomy sponges, estimation of blood loss in vaginal delivery/cesarean delivery drape)
  2. Gravimetric methods: Weighing of surgical materials (laparotomy sponges, under-the-buttocks pads (chucks))
  3. Calculated based on starting and final hematocrit
  4. Combination of above
  5. Other
* Who estimates the final blood loss for each of the following delivery modes? (Please select all that apply)

|  |  |  |
| --- | --- | --- |
| Personnel | Vaginal Delivery | Cesarean Delivery |
| Anesthesiologist |  |  |
| Obstetrician |  |  |
| Labor and Delivery nurse |  |  |
| Other |  |  |

* (9)Does your labor and delivery unit have a postpartum hemorrhage (PPH) protocol in place? **Y/N**

If NO to #9, does your institution have a massive transfusion protocol? **Y/N If YES, 🡪 follow pathway of MTP under following question.**

* If YES to # 9, as part of your PPH protocol do you have a massive transfusion protocol? **Y/N If yes🡪**
  1. Are there specific criteria for initiation? (e.g. 4U PRBC transfused in <4 hrs with ongoing uncontrolled bleeding.) **Y/N**

If yes, what are the criteria: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Is there one specific person who coordinates with the blood bank? Y/N (if yes, please select)
     1. Anesthesiologist
     2. Obstetrician
     3. Labor and delivery nurse
     4. Varies based on clinical circumstance
     5. Other
  2. Is a blood cooler or refrigerator sent to the location of the PPH? **Y/N**
  3. How many units of each of the following blood products are included in the massive transfusion protocol?

|  |  |  |
| --- | --- | --- |
| Blood Product | # Units\* | # donors in pooled products\*\* |
| Packed Red Blood Cells |  |  |
| Fresh Frozen Plasma |  |  |
| Cyroprecipitate |  |  |
| Platelets |  |  |

\* 1 “Unit” = 1 bag of product.

\*\*For platelets and cryoprecipitate, 1 Unit is often pooled from multiple donors. Please specify the number of donors that contribute to each unit of pooled product.

* 1. Does your massive transfusion protocol call for initial set ratio for transfusion of PRBC : FFP : PLT? **Y/N**
     1. If YES, what is the initial ratio?
        1. 1 PRBC : 1 FFP only
        2. 1 RPBC : 1 FFP : 1 PLT
        3. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. At your institution, when is cryoprecipitate typically transfused?
* At onset of clinical signs of fibrinolysis (prior to laboratory results becoming available)
* Based on TEG or TEM findings
* Fibrinogen <300mg/dL
* Fibrinogen <250mg/dL
* Fibrinogen <200mg/dL
* Fibrinogen <150mg/dL

OTHER (please state threshold): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Does your health system use a code team or rapid response team for severe obstetrical hemorrhage? **Y/N**
  1. If YES, who is included in this team (check all that apply)?
     1. Critical Care RN
     2. Obstetrician
     3. Anesthesiologist
     4. Surgeon/ Surgical Resident
     5. Intensive Care Physician Team
     6. Other
* (If no to #9) If you do NOT currently have a postpartum hemorrhage protocol, are there any plans to create one? **Y/N**
  1. If yes, who is in charge of creating the protocol? (Please check all that apply)
     1. Anesthesiology
     2. Obstetricians
     3. Labor and Delivery Nursing
     4. Nurse midwives
     5. Family Practice Physicians
     6. Hospital Administrators/ Risk management
     7. Other
* Where is the PPH protocol posted/ available? (Please select all that apply)
  1. In labor and delivery rooms (LDR)
  2. In labor & delivery operating rooms (ORs)
  3. In a hemorrhage cart
  4. At nursing stations
  5. On-line resource
  6. Other
* During a postpartum hemorrhage, who is responsible for the following: (Please select all that apply)

|  |  |  |  |
| --- | --- | --- | --- |
| Personnel | Clinical activation of PPH Protocol | Maintenance of PPH Protocol | Enforcement of PPH Protocol |
| Anesthesiologist |  |  |  |
| Obstetrician |  |  |  |
| Labor and Delivery nurse |  |  |  |
| Other |  |  |  |

* (16)Does the labor and delivery nurse require permission from the obstetric provider to notify the anesthesia team (if not present) about a postpartum hemorrhage? **Y/N**
* If NO to # 16, How is the existence of a postpartum hemorrhage communicated to the anesthesia team if not present?
  1. RN notifies Anesthesiology team with request from obstetric provider
  2. Obstetric Provider notifies Anesthesiology team
  3. Electronic patient status board update
  4. Automated notification of abnormal vital signs (e.g., tachycardia)
  5. Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Does your PPH protocol provide for escalation of care?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | |  | | |
| Escalation | >1000 mL EBL | >1500 mL EBL | | > 2 L EBL | Depending on clinical situation | | **Not Used at this institution** |
| Large bore IV |  |  | |  |  | |  |
| Arterial line |  |  | |  |  | |  |
| Ceentral Venous Access |  |  | |  |  | |  |
| Upgrade Blood Status (T & C)\* |  |  | |  |  | |  |
| Activate maternal rapid response team |  |  | |  |  | |  |
| Consult Interventional Radiology |  |  | |  |  | |  |
| Consult Gynecology-Oncology |  |  | |  |  | |  |
| Obstetric residents notify obstetric faculty if not present |  |  | |  |  | |  |
| Institute Cell Saver Use |  |  | |  |  | |  |
| Institute rapid infusion device use |  |  | |  |  | |  |
| Begin/ upgrade active patient warming |  |  | |  |  | |  |
| Post-op ICU care |  |  | |  |  | |  |

\*If Type and Cross performed during a postpartum hemorrhage, how many units are routinely requested? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other escalation of care:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Is there a specific trigger for laboratory evaluation during postpartum hemorrhage? **Y/N**
  1. If yes, what? : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* What labs do you evaluate in the following circumstances?

|  |  |  |  |
| --- | --- | --- | --- |
|  | At the beginning of a hemorrhage | During massive transfusion | **Frequency during a massive transfusion?** |
| ABG |  |  |  |
| Hbg/Hct |  |  |  |
| PLT |  |  |  |
| Fibrinogen |  |  |  |
| Coags (PTT, PT/INR) |  |  |  |
| Calcium (ionized Ca) |  |  |  |
| Basic electrolyte panel |  |  |  |
| TEG/Thromboelastrography |  |  |  |
|  |  |  |  |

* Do you have a portable hemorrhage cart? **Y/N**
  1. If Yes, what is in the cart? (Please check all that apply.)
     1. Laminated card with recommendations of transfusion protocols
     2. Laminated card with ACLS
     3. Important phone numbers/pagers:
     4. Portable Stat coag machine and supplies
     5. Equipment to send labs (Tubes,paperwork)
     6. A-line supplies (pressure bag, transducer, tubing, catheters)
     7. IV access supplies (IV catheters, blood tubing)
     8. Central Line supplies (Cordis, MAC kits, full body drape)
     9. Sterile gowns, caps, masks
     10. Fluids (LR, NS, hetastarch)
     11. Belmont/ Rapid Infuser tubing and canister (if applicable)
     12. Fluid Warmer tubing
     13. Bair Hugger blankets

If you have a postpartum hemorrhage protocol we would like to obtain a copy if possible.

Please send any protocols by email to Dr. Rachel Kacmar at r-kacmar@fsm.northwestern.edu or a photocopy could be sent to Dr. Rachel Kacmar at 251 E. Huron Street, F5-704, Chicago, Illinois 60611.

All Protocols will be kept confidential

If you have any additional comments, please enter them below.

Thank you very much for completing our survey.