Guideline for Management of Postpartum Hemorrhage

For blood loss of more than 500 mL (1000 mL for cesarean), but less than 1000 mL (1500 mL for cesarean), and still bleeding or hemodynamically unstable:

- Start intravenous (IV) line if not present
- Increase IV fluid rate
- Increase IV oxytocin by increasing infusion rate, or by increasing concentration to 40-80 international units/L
- Empty bladder†
- Conduct vigorous fundal massage
- Administer 0.2 mg of methylergonovine intramuscularly every 2-4 hours if patient is not hypertensive
- Make sure type and screen is current: if antibody positive, crossmatch 2 units
- Evaluate for retained products of conception, lacerations, uterine atony, and uterine inversion
- Administer 0.25 mg of 15-methyl prostaglandin F\textsubscript{2α} intramyometrially or intramuscularly or 800-1000 micrograms of misoprostol rectally

If blood loss 1000 mL (1500 mL for cesarean) and still bleeding or hemodynamically unstable:

- Call for help – second obstetrician, anesthesia, blood bank, nursing supervisor, and consider gyn-oncologist
- Initiate massive transfusion protocol**
- Consider administering Tranexamic Acid (TXA) 1 gram IV. May only be given if Massive Transfusion Protocol is initiated. Must be charted and charged.
- Assign transfusion point person to talk with blood bank (anesthesia)
- Assign Red Hat to manage checklist (may be charge RN)
- Red Hat identifies and assigns and sends runner to blood bank for green cooler
- Send labs in green bag (comes with blood in cooler). Blood bank orders labs and sends back blood and products.
- Begin blood product transfusion based on clinical signs and judgment
- Establish second large-bore IV line
- Administer oxygen as needed to maintain oxygen saturation greater than 95%
Consider move to operating room for dilation and curettage or laceration repair†
Have OB hemorrhage chart moved to OR from anesthesia work room
Consider intrauterine balloon or uterine packing. Consider warm blanket to prevent hypothermia
During cesarean or hysterectomy: re-dose antibiotics at 1500 mL blood loss or > than 3 hours.
Place Foley catheter with urometer
Begin to determine disposition of patient (PACU, SCU, LDR)

If no response by 1500 mL (2000 mL for cesarean) estimated blood loss:
Decision made between transfusion point person and blood bank for further blood products and labs
Consider uterine artery ligation, B-Lynch sutures, hypogastric artery ligation or hysterectomy. Consider cell-saver only if readily available.
Notify blood bank when massive transfusion over

*ultrasound should be performed to evaluate for retained placental tissue before uterine instrumentation is undertaken
**refer to attached

The following pages contain helpful information in the event of Obstetrical Hemorrhage:
Table 3: Blood Component Therapy

<table>
<thead>
<tr>
<th>Product</th>
<th>Volume (mL)</th>
<th>Contents</th>
<th>Effect (per unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed red cells</td>
<td>240</td>
<td>Red blood cells, white blood cells, plasma</td>
<td>Increased hematocrit 3 percentage points, hemoglobin by 1 g/dL</td>
</tr>
<tr>
<td>Platelets</td>
<td>50</td>
<td>Platelets, red blood cells, white blood cells, plasma</td>
<td>Increase platelet counts 5,000-10,000 mm$^3$ per unit</td>
</tr>
<tr>
<td>Fresh frozen plasma</td>
<td>250</td>
<td>Fibronogen, antithrombin III, factors V and VIII</td>
<td>Increased fibrinogen by 10 mg/dL</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>40</td>
<td>Fibronogen, factors VIII and XIII, von Willebrand factor</td>
<td>Increase fibrinogen by 10 mg/dL</td>
</tr>
</tbody>
</table>

Reference:

When You Call Blood Bank To Start The Massive Transfusion Process
TELL THEM: Pt name, dx, current location, next location, contact person
Keep them Informed Throughout the Whole Process
The More the Blood Bank Knows, the Better Things Will Go

ROUND #1
4 u uncrossmatched RBC's (Type O Rh neg) or crossmatched (if available)
If necessary, 2u AB plasma (emergency release type AB plasma already thawed)

ALL SUBSEQUENT ROUNDS
1:1 RBC:FFP (or as close to that ratio as possible)
4 u crossmatched RBC's
4 units FFP

RE-IDENTIFY CONTACT PERSON WHEN YOU HAND OFF PATIENT TO THE NEXT LOCATION!
(e.g. ED to OR, SCU or other destination)
AND
Communicate to Blood Bank!

IF YOU ANTICIPATE EMERGENT NEED FOR LARGE AMOUNTS OF BLOOD IN A SHORT PERIOD OF TIME
Call Blood Bank 662-2121 As Soon As You Know
Identify a contact person to communicate with Blood Bank!

TALK to the Blood Bank with anticipated end of MT and again at the end of MT

RK:01May2012
### OTHER RECOMMENDATIONS

<table>
<thead>
<tr>
<th>FIRST SET OF LABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Type &amp; Screen (if not already done)</td>
</tr>
<tr>
<td>• Massive Transfusion Coag Panel (INR, PTT, Fibrinogen, Plat Ct)</td>
</tr>
<tr>
<td>• CBC</td>
</tr>
<tr>
<td>• CMP</td>
</tr>
<tr>
<td>• Mg++</td>
</tr>
<tr>
<td>• Ionized Ca++</td>
</tr>
<tr>
<td>• ABG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LABS AFTER EACH ROUND OF BLOOD PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CBC</td>
</tr>
<tr>
<td>• Massive Transfusion Coag Panel (INR, PTT, Fibrinogen, Plat Ct)</td>
</tr>
<tr>
<td>• Ionized Ca++</td>
</tr>
<tr>
<td>• ABG’s</td>
</tr>
<tr>
<td>• TEG (currently available in OR 6AM to 6PM M-F @ 662-4556)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLATELETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 dose every 10 -12 units</td>
</tr>
<tr>
<td>RBC in consultation with Blood Bank (contingent upon platelet inventory and control of hemorrhage)</td>
</tr>
</tbody>
</table>

1. If INR >2.0: Give 3 additional units FFP
2. If fibrinogen < 100 mg/dL: give 10 units cryoprecipitate
3. CALCIUM: After the first 4 units RBC’s give with each 1-2 units: Calcium gluconate: 10 ml (~5 meq) Calcium chloride: 3 ml (~5 meq)
4. If pH <7: give NaHCO3 50 meq
5. Permissive hypotension
6. Normosol R: OK with blood products and is associated with less hyperchloremic acidosis than NS
7. Recombinant Factor VIIa
   - Dose = 30 mcg/kg
   - Ideal variables for rFVIIa therapy include:
     - pH >7.2
     - Platelet count > 100,000
     - Body Temp >36°C
     - Fibrinogen >100 mg/d
8. Consider use of cell saver

Green Zip-Lock bags

Each cooler will come with green bags containing the proper tubes and instructions for labs to be drawn after each round of products

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