Hematology Fetal Medicine Patient Standard of Care Guidelines:

- Prenatal consult with Pediatric Hematologist & Neonatologist
- Have list of coordinating providers with Mom's care and anticipated providers for child (example below)

  Providers involved with care:
  CHO Pediatric Hematologist: Dr. Matsunaga & Dru Haines PNP: 510-428-3885 x4512
  Adult Hemotologist:
  OB Perinatologist:
  Ob Provider:
  Neonatologist:
  Pediatrician at (delivery center):
  Pediatrician in (hometown):
- Verify any risk factors for mom and baby during delivery process:
  - Hemophilia vs. hemoglobin variant vs any other hematological conditions
- Implement UB CHO Hemophilia Guidelines for delivery of care: *(see attached- note updated changes in red)*
- L&D team to notify Transition Nursery about admission and Hemophilia guidelines

Post-delivery care specific to AB delivery:

- If Infant is stable, infant can bond with mom but will need to be transferred to Transition Nursery (TN) for assessment, lab draws and evaluation. Initial VS and lab draws need to be obtained by 1 hour of age in TN.
  - If infant is symptomatic or clinically unstable call the Neonatologist immediately and anticipate admit to NICU
- Infant will be evaluated by the Neonatologist in TN. Goal is have lab results within 2 hours of life.
- Infant **WILL NOT BE transferred *to "Well Baby Care"* in FCC until initial STAT lab results are reported & reviewed with Neonatologist. Lab values must be within normal parameters**.
  - If lab results are abnormal and reflect coagulopathy, infant will be a direct admit to the NICU
- Infant will receive medications in TN- Vitamin K administered SQ not IM.
- **Routine Head Ultra Sound (US) prior to Discharge**: In the asymptomatic, clinically stable infant at risk for hemophilia or another hematologic condition
  - Do not discharge without head US results: **If a result of the Head US is abnormal** notify the **Neonatologist**. Infant will likely need a brain MRI.

- At any time the infant becomes symptomatic and/or clinically unstable the infant will be admitted to NICU for additional monitoring
- **Discharge plan:** If infant is asymptomatic, normal lab values **AND** negative head US (all reviewed with Neonatologist) infant will follow up with Hematology as an outpatient patient. **Please contact**: Dru Haines, RN, PNP, Hemostasis Program Nurse Coordinator at 510-428-3853 for discharge plan.

Hemophilia Guidelines

(Adopted from Children's Hospital 2014)

Goal: Appropriate diagnosis and timely management to ensure optimal newborn outcomes

Obstetrical Recommendations for Deliveries at risk for Hemophilia

The following precautions should be taken when a pregnancy is at risk for hemophilia or another significant bleeding disorder:

1) OB provider to discuss modes of delivery with family
   a) Fetal/Newborn Risk Factors
   b) Intracranial hemorrhage risk, 0.5% in cesarean section delivery up to 4% in vaginal delivery
   c) Instrumentation contraindicated (highest risk of hemorrhage)
   d) Male fetus carries have a higher risk of intracranial hemorrhage.
   e) Provide mom's name to fetal diagnostic program
      (1) b. Maternal Risk Factors
      (2) Measure mom's factor levels.
      (3) Need to have factor available and know dosing
      (4) Maternal carriers with Factor VIII or IX deficiency are at increased risk of Intrapartum hemorrhage
   f) Reference:
      (a) http://www.hemophilia.org/Researchers-Healthcare-Providers/Medical-and-Scientific-Advisory-Council-MASAC/MASAC-Recommendations/MASAC-Guidelines-for-Perinatal-Management-of-Women-with-Bleeding-Disorders-and-Carriers-of-Hemophilia-A-and-B
2) Cesarean section when clinically indicated

3) No fetal scalp monitor, no forceps, no vacuum extraction

4) Pediatrician should be notified of the baby's possible hemophilia diagnosis so baby can be monitored very closely (Also OB should be contacted to be made aware of the potential bleeding risks for the mother)

Pediatric recommendations Newborns at risk for Hemophilia

1) Coagulation studies should be done ASAP and prior to any administration of blood products.
2) Obtain a STAT PT (Prothrombin time) and PTT (Partial thromboplastin time), CBC.
3) Further testing as listed below, dependent on particular bleeding disorder suspected.
4) If family history unclear, but high suspicion of a bleeding disorder, all of the studies should be obtained.

	TEST	COMMENTS
Hemophilia A	Factor VIII activity	Also send vWD panel if possible
Hemophilia B	Factor IX activity	
Von Willebrand Disease	Factor VIII activity Ristoceitin Von Willebrand Antigen	Send especially if family history of severe vWD (type 2 or 3) or prior to a planned procedure

a. The Alta Bates Laboratory performs STAT PT, PTT, Factor VIII and Factor IX testing on-site. A minimum of two (2) 2.7 mL blue top (citrate) tubes are needed for these tests.
   a. For Alta Bates Testing: Do not use the EPIC Von Willebrand Panel code (it will route as Routine to Quest). USE CODES: LABF8 (Factor VIII), LABMISC01→ in open field type Risoceitin and VW Ag stat to Machaon Lab on CORD BLOOD.

b. Draw 2-3 EXTRA 2.7 mL blue top tubes for additional tests if possible, especially prior to administration of any blood products.
c. *Cord blood samples are acceptable for testing except for the CBC specimen*. Notify lab if sample is drawn from a heparinized line.
d. Clearly label sample tubes with source as "cord blood" or "peripheral blood".

1. If the delivery is traumatic or if the baby shows any signs of increased intracranial pressure, including non-specific signs such as vomiting, irritability, poor feeding; an MRI scan should be performed to rule out an intracranial hemorrhage.

2. *Head **Ultra Sound** imaging should be done on ALL infants diagnosed with Hemophilia, regardless of symptoms. A cranial ultrasound is an acceptable head imaging mode in the asymptomatic infant. Review the results with hematology consultant and pediatric radiologist. If there is any abnormality with the head US please talk with the UB CHO Hematologist and Neonatologist for potential MRI.*

3. Circumcision, if desired, should be delayed until a potential bleeding disorder is identified or excluded, so that a treatment plan can be outlined if needed.

4. NO intramuscular injections should be given until a diagnosis of hemophilia is ruled out. For newborns identified with Hemophilia, vitamin K can be administered subcutaneously using a 25 g needle.

Please contact Children's Hospital Oakland Hematology for any questions regarding the expected birth or delivery of an infant with a bleeding disorder. We can be reached at the below listed contact information, or should it be after hours, please contact our Hematologist on call at 510-428-3000; or Dru Haines, RN, PNP, Hemostasis Program Nurse Coordinator at 510-428-3853.

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*If you have any questions about this plan of care please contact the Fetal Medicine Program Coordinator at (510) 428- 3156 or fetalmed@mail.cho.org