## TITLE: Neonatal Transfusion Orders Procedure (Patients Less than 4 Months)

**PURPOSE**

The neonatal period is generally considered to extend from birth up to 4 months. Newborn infants present unique problems in transfusion therapy. Indications for transfusion of infants differ with weight, gestation, and circumstances of delivery and with subsequent maturation. Appropriate transfusion practice requires knowledge of neonatal physiology and careful clinical observation.

CLINICAL SIGNIFICANCE

Supplying blood banks should be capable of providing components tailored to satisfy the specific requirements of these tiny recipients whose small blood volumes and impaired organ functions provide little margin of safety. The fact that all newborn infants are more likely to receive transfusions than hospitalized patients of any other age testifies to the importance of this aspect of transfusion medicine. One major reason for this is that the amount of blood removed for laboratory samples may be quite substantial.

### PERSONNEL

Medical Technologists

### SPECIMEN

### No sample necessary unless there is no previous record of ABO type, Rh type and Direct Coombs results on patient and/or maternal sample is not available. If sample is needed no special preparation of the patient is necessary. An EDTA sample collected in a small lavender microtainer. Sample must be less than 3 days old.

### EQUIPMENT REAGENT & PREPARATION

See Compatibility Test Procedure No. 4840-BB-312 and 4840-BB-308

**QUALITY CONTROL**

SoftID provides positive patient and specimen identification at the point of care. This effective lab software solution enhances patient safety by accurately identifying the patient and the appropriate lab test and ensuring that patient lab specimens are correctly bar coded and labeled.

# STEPWISE PROCEDURE

 **Maternal Profile**

1. Check record for a mother’s ABO, Rh typing and antibody screen done during the delivery hospital stay.
2. If no results are found order a Maternal Profile on the mother.

 See Procedure No. 4840-BB-610 for more information if needed.

 **ABO, Rh typing and Direct Coombs Testing on the Infant.**

1. When the Blood Bank is notified that a transfusion may be indicated, check Blood Bank records for an ABO, Rh type and Direct Coombs result on the infant, if no record is found, have baby drawn for an ABO, Rh and Direct Coombs.

######  **Transfusion Order**

To notify the laboratory that a transfusion is needed, a neonatal red blood cell product order needs to be placed in the EHR.

1. Gather all necessary labels,
2. **If no maternal profile is available**, 2 lavender micro-containers need to be drawn for this crossmatch from the baby.
* IF YOU ARE DRAWING THE PATIENT, Go to the patient’s room.
* Draw patient in accordance with Procedure No. 4840-LCC-312, SoftID
* Send blood sample and all the paperwork to the Laboratory.
* ***Blood bank orders without appropriate documentation will not be accepted by the Blood Bank.***
* Perform an ABO and Rh typing, and Antibody Screen on this baby’s sample.
* If no cord blood results exist, perform a direct coombs test.
* Add on additional testing orders to the Neonatal RC Order as needed.
1. If the initial antibody screen on the mother or baby is negative, it is unnecessary to crossmatch donor red cells for the initial or subsequent transfusions, provided that the cells are O negative. Repeat testing may be omitted for the remainder of the neonatal period during any one hospital admission.

 4. If they Type and Screen in negative on the baby and the antibody screen is positive on maternal specimen due to Rhogam, an antiglobulin phase crossmatch is not indicated and the Type and Screen on the baby may be omitted for the remainder of the neonatal period during any one hospital admission.

5. If the initial antibody screen on mom or baby, demonstrates clinically

significant unexpected red cell antibodies, these antibodies shall be identified and units shall be prepared for transfusion that do not contain the corresponding antigen and these units shall be crossmatched using a sample from the baby, using methods that include the antiglobulin crossmatch. If there is not enough plasma from baby, mom’s sample may be used for the anitglobulin crossmatch (only if mom’s sample is less than 72 hours old), just add comment “Sample from mother MR# 1234567 used for crossmatch”

NOTE: Crossmatching is necessary only once on the red blood cell unit, not on each pedi pack. If possible sequester the rest of the neonatal unit and order a new unit for other possible neonatal transfusions.

 When the unit is selected for baby, the order should change to a full AHG crossmatch, if it does not an AHG (Coombs) crossmatch needs to be added to the Neonatal Transfusion. Report out the AHG crossmatch so that the tags contain the AHG results.

**Do not report the neonate crossmatch.**

See Blood Bank Procedure Book #4 for more information on antibody identification.

 **NOTE: If the neonate(less than 4 months of age) leaves the hospital and is than readmitted, ABO & Rh typing and antibody screen testing must be done on the neonate. This would be considered a new admission. A new hospital chart is started for the neonate with a new financial number.**

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6 . Call Versiti to order a neo-natal unit if none is available in our blood bank. If a neo-natal unit is available in our blood bank, it may be used until it’s outdate**.**

**7. Order an O negative, CMV negative, Sickle Cell (HbS) Negative, Leukoreduced, Irradiated, Less than 5 days old, preferred CPD anticoagulant but AS (adenine-saline) is ok when CPD is not available, pedi-pack unit.**

8. Neonatal recipients **may not** be transfused with whole blood, plasma or other blood

 components that contain clinically significant unexpected antibodies.

V. **Transfusion**

1. Remove unit from Blood Bank refrigerator when floor is ready to transfuse.
2. Mix unit well.
3. Open clips on satellite bags.
4. Allow blood to run into satellite bags, reserve 50-60mL in the original bag, each unit should be appx. 50mL.
5. Seal tubing in three places. One near the blood-containing bag, one near the

 transfer bag and one in the middle. Use the heat sealer to accomplish this sealing.

1. Cut or separate the tubing at the middle seal to prevent possible open system contamination if seal begins to leak.
2. The expiration date does not change.
3. Split unit in the computer by using the Edit function of the Inventory Application.
4. See Blood Bank Computer Manual for more information.
5. Under Inventory>Patient Orders>Select. Select one pedi-pack from the unit for

the patient.

1. Place tagged unit in the refrigerator until the floor sends a release.
2. Prior to dispensing unit the instructions need to be confirmed under Patient>Orders>Results, double click on unit and confirm each instruction while verifying that the unit has that attribute.
3. Split units are dispensed in the same manner as routine crossmatches.
4. Print an extra unit label with the patient identification label for nursing staff to place on the syringe during transfusion (Inventory>Product Order Services>Label). Place this label in the bag when sending up the aliquot/unit of blood.

# REPORTING RESULTS

1. All results are reported through the Laboratory Information System. See Blood Bank Computer Manual for more detail.
2. For STATS, call the floor and notify them when blood is available.

 Note on the product order person spoken to for clarification later, if necessary.

3. Stopper patient sample if available, and place in the daily rack. Samples are saved for 21 days.

# CALCULATIONS

None indicated

**NOTE:**

1. In a rare occasion of a non-group O neonate receiving non Group O red cells (directed donor), the neonate’s serum/plasma must be screened for anti-A or anti-B if the donor unit and maternal blood ABO blood groups are not compatible. The screening must include an antiglobulin phase and documented on the manual log.

2**.**  Before non-group O (ABO compatible red blood cells {as in a designated donor} can be issued an AHG crossmatch must be performed with a compatible result. If crossmatch is incompatible the unit cannot be used and only O negative neonatal units may be transfused. Crossmatch is necessary only once on the red blood cell unit, not each pedi-pack. All other requirements (CMV negative, Irradiated, sickle cell negative, leukoreduced ect. must be met).

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***REFERENCES***

AABB Technical Manual 18th edition 2014

Standards for Blood Banks and Transfusion Service

Soft Computer, Clearwater, Florida