Sutter Health
Sutter Roseville Medical Center

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Owner:	*Nadera Poirier: Supervisor, Laboratory Analytic*
Policy Area:	*Lab - Transfusion Service*
References:	
Applicability:	*Sutter Roseville Medical Center*

Routine Neonatal Transfusion Protocol

PURPOSE

To provide instruction on required pre-transfusion testing and appropriate selection of blood components for neonatal patients (<4 months of age).

POLICY

- Neonate pre-transfusion specimen acceptability follows standard collection and labeling requirements. See *Acceptability Criteria for and Labeling of Transfusion Services Specimens* SOP.
  - Specimen must be **peripheral 1.5 mL minimum EDTA** sample
  - Cord blood specimens may NOT be used as a primary or confirmatory ABORh
  - Heel stick specimens are unacceptable for pre-transfusion testing
- Two adult-sized RBC units meeting neonate selection requirements (see *Product Selection*) will be kept in stock through standing order (every 3-4 days) at all times. Units will be marked with the last date they may be used for neonatal transfusion and rotated into adult inventory past that date.
  - Adult units will be issued unless pediatric units are specifically requested by the clinician
  - Pediatric aliquots must be ordered as such from the blood supplier
- Neonate blood filter is to be attached and issued with each blood product. Contact NICU for additional filters, as needed.
- The EDTA tubes for drawing the pre-transfusion and confirmation testing along with job aid will be sent to NICU when order for transfusion testing has been placed or requested by the NICU nurse.
- **Exchange Transfusions:**
  - Product with final hematocrit of 45-60% will be manufactured at the blood supplier upon request using selection criteria noted below
  - Total volume of final product will range from 370-420 mL, containing approximately 220 mL RBCs and 150-175 mL of plasma
  - Units may not be equilibrated to 1-6ºC prior to transport due to STAT need and abbreviated expiration of 24 hours from manufacture
  - Exchange transfusions require a blood warmer: add test **PI** and result with ETC **WARM** (Blood Warmer Required)
  - If **intrauterine** exchange transfusion is requested, perform all routine pre-transfusion testing on the *mother's XM accession* and complete AHG crossmatch.
    - Add **BBC**: "Intrauterine exchange transfusion"
    - Add **PI**: "Intrauterine exchange transfusion. Blood warmer required."

TESTING FREQUENCY/ORDERS

IF neonate is:	THEN pre-transfusion testing is performed:
< 4 months, during current admission	On the first sample, NOT repeated during admission (unless plasma is needed for testing and no is longer available)
< 4 months, discharged and readmitted	On new sample from readmission, NOT repeated during new admission
≥ 4 months, regardless of admission status	Every 3 days

NEONATAL ORDER CODE	ADULT EQUIVALENT	COMMENTS
INWU	XM/TS	• Required for first order of **ANY** blood product • Includes ABORh, antibody screen, and IgG DAT • To be performed according to testing frequency noted above • Can be ordered with or without volume of product requested
TINF	ADDXM	• Routine request for additional infant RBCs • Result UO and HX, then allocate on original INWU accession

PRODUCT SELECTION

<table>
<tr><th>COMPONENT</th><th>SELECTION</th><th>COMMENTS</th></tr>
<tr><td>Red Blood Cells (routine)</td><td>• O negative
• Leukocyte reduced
• AS-1 or AS-3
• <7 days post-irradiation
• Irradiated
• CMV negative
• Antigen negative, if indicated</td><td>• O negative only
• Consult pathologist if appropriate product unavailable from blood supplier</td></tr>
<tr><td>Platelets</td><td>• Plasma compatible (select in order listed)<table><tr><th>NEONATE ABO:</th><th>SELECTION:</th></tr><tr><td>O</td><td>O, A, B, AB</td></tr><tr><td>A</td><td>A, AB</td></tr><tr><td>B</td><td>B, AB</td></tr><tr><td>AB, INVAL, Unknown</td><td>AB</td></tr></table>• Leukocyte reduced
• Irradiated
• CMV negative</td><td>• Rh type not a consideration except in cases of Rh negative female, in which case Rh negative will be selected
• Consult pathologist if Rh positive must be given to Rh negative female to determine is Rhogam should be administered</td></tr>
<tr><td>Plasma</td><td>AB only</td><td>• Rh type not a consideration</td></tr>
<tr><td>Cryoprecipitate</td><td>ABO compatible</td><td>• Rh type not a consideration</td></tr>
<tr><td>Whole Blood (exchange)</td><td>RBC requirements:
• O negative
• Leukocyte reduced
• CPD or CPDA-1
• < 3 days old (per nursing SOP)
• Irradiated
• CMV negative
• HgbS negative
• Antigen negative, if indicated

Plasma requirement:
• Type AB collected in CPD or CPDA-1</td><td>• O negative only
• Ordered reconstituted from blood supplier
• Good for only 24 hours
• DO NOT order until decision to perform procedure at SRMC has been made</td></tr>
</table>

Granulocyte	• O negative • Irradiated • CMV negative • Antigen negative, if indicated	

CROSSMATCH COMPATIBILITY

NEONATE RESULTS	CROSSMATCH METHOD	RESULTING XM
AS: Negative **DIGG**: Negative	Electronic Crossmatch	Auto-populates grids upon saving
AS: Positive **ABID**: Non-clinically significant antibody, ANAPS, or low incidence antibody (regardless of **DIGG** or **ELU** results)	AHG Crossmatch	Result according to AHG crossmatch procedure performed
AS: Negative **DIGG**: Positive **ELU**: Non-clinically significant antibody, ANAPS, or low incidence antibody		
AS: Positive **ABID**: Clinically significant antibody (regardless of **DIGG** or **ELU** results)	Neonatal No XM Protocol AHG crossmatch not required, **MUST** provide antigen negative units	**XIS**: NRQ (~) **Interp**: NCMP (shift ~)
AS: Negative **DIGG**: Positive **ELU**: Clinically significant antibody		

PROCEDURE

Step:	Action:
1.	Perform history check on neonate and mother (if available), then access the INWU accession in *Blood Order Processing* and result the following fields: • **EXX** (Crossmatch Expiration): Date neonate will be 4 months old ◦ Specimen is to be expired upon patient discharge OR exhaustion of neonate plasma, if needed for AHG crossmatches • **UO** (Units Ordered): Number requested or *HIDE* (if none) • **HX** (History Check): *YH* or *NH* • Add/order appropriate confirmation testing based on patient history • Add **PB** and result with free text: "Infant 4 months old on MM/DD/YYYY" • Add **PB** and result with ETCs for required neonatal attributes: **BBIRR**, **BBCMVN**
2.	Perform automated testing on neonate's specimen. Note: Transcibe ABORh results from Echo. Reverse type is not indicated in neonates and will be resulted as *ND*.

3.	Perform antibody ID if antibody screen demonstrates reactivity. • If mother has known specificity and limited neonate plasma is available, PEG selected cells may be used to identify the antibody in the neonate's plasma • All clinically significant antibodies must be ruled out using neonate's current specimen • Result **ABI** with **dated free text** including mother's name and medical record number (if available): "*MM/DD/YYYY* Maternal anti *X*. Mother's name: *LAST, FIRST* (MRN: ###)" • Add **PI** indicating need for antigen negative units, if applicable based on ABID
4.	Add test **ELU** and perform an elution if: • DAT is positive upon initial workup *OR* • DAT strength has increased since previous peripheral specimen testing
5.	Crossmatch and allocate units as needed once all testing had been completed using *Crossmatch Compatibility* section for guidance.
6.	Select *Save.*

RELATED DOCUMENTS

Acceptability Criteria for and Labeling of Transfusion Services Specimens

All revision dates:

Attachments

No Attachments