Transfusion Services

PRETRANSFUSION TESTING REQUIREMENTS

Type and Screen - for patients greater than 8 days of age requiring red cells, or undergoing a procedure or treatment in which transfusion is very unlikely, but possible.(See listing Type and Screen.) A type and screen includes ABO and Rh typing and an antibody screen. Crossmatching of donor red cells unit(s) if subsequently requested by the provider. (See listing Transfuse Red Cell Group)
If the screen is negative and the patient has no history of clinically significant antibodies, the Blood Bank may issue blood of the patient's type in <5 minutes. If an unexpected antibody turns up in the type and screen, a crossmatch becomes necessary, and the patient's provider is alerted to the situation beforehand. Patients with known or **historic** unexpected blood group antibodies require a complete serologic crossmatch including the antiglobulin phase. As a rule, the Blood Bank issues blood of the patient's own ABO and Rh types. When difficulties occur in blood selection, consultation will be necessary between the Transfusion Service and the patient's physician.
Infants under 4 months of age require only one pretransfusion workup per admission.

Newborn Type and Screen – for patients <7 days old requiring red cells. A Newborn Type and Screen includes: ABO and Rh typing, Direct Coombs and Antibody Screen. Infants under 4 months of age require only one pretransfusion workup per admission.

ABO/Rh – for patients only requiring FFP, platelets or cryoprecipitate with NO ABO/Rh on record at Children's Hospital and Clinics Laboratories. (See listing ABO/Rh)

Laboratory Tests Performed:

ABO/Rh: (See listing ABO/RH.) ABO typing consists of testing the patient's RBC's with reagent anti-A and anti-B. An additional confirmation consists of "reverse grouping," (i.e., testing the patient's serum against known A1 and B reagent RBC's).
Rh typing is done by testing RBC's with anti-Rho (D) as a routine. The term "Rh-positive" (or "Rh-negative") refers only to the presence or absence of Rho(D). This is the most important antigen of the Rh system.
Antibody screen*:* (See listing Antibody Screen.) This is the procedure used for detecting unexpected IgG antibodies in the serum of a patient before transfusion of red cell products and for identifying any such antibodies. A negative antibody screen means there is no IgG antibody reacting in the test conditions with the reagent red cells used. The test can miss weak antibodies and those reacting with antigens not present on the test red cells.
A positive result requires identification of antibody before blood is issued for transfusion. That in turn may require selection of donor units negative for the offending antigen before crossmatching. The antibody screen is like a crossmatch but uses a selected RBC substrate (type O reagent red blood cells for antibody detection) instead of donor red cells.
Crossmatching*:* Crossmatching tests determines compatibility between the patient and donor red cells. The crossmatch may include various techniques depending on the patient's Blood Bank history. Crossmatching is required for all patients >4 months of age. Allow additional time for patients known to be immunized to red cell antigens. Unanticipated problems can occur with antibody reidentification and selection of blood of appropriate phenotype. Patients receiving red cell transfusions are at risk of forming red cell antibodies. For this reason, Standards require a new blood sample and repeat antibody screening every 3 days.
Crossmatched blood will be held for 3 days and then is automatically released.
Direct Coombs: (See listing Direct Coombs) This is the procedure used for detecting unsuspected alloantibody or autoantibody (IgG) and/or Complement bound to patient's red cells.

A negative Direct Coombs means there is no detectable levels of IgG antibody and/or Complement absorbed onto the patient's red cell antigen sites.

Patient Specimen Requirements:	
Specimen Type:	Whole blood
Container:	Lavender top (EDTA) tube Alternate: Red top tubes will be accepted, but will delay specimen processing to allow for clotting. **(SST tubes are Not acceptable.)**
Draw Volume:	2 – 5 mL blood
Collection and Labeling:	(See Collection of Patient Specimens for full details). The patient must be positively identified when the specimen is collected. The label on the blood specimen must correspond with the identification on the patient's Medical Records band (or ED ID) and on the physician's/practitioner's orders. All specimens submitted to the Transfusion Service must be appropriately labeled at the bedside with the time and date of collection, and the signature of the individual collecting the specimen. A completed order, either through the HIS or general requisition must accompany each specimen. It is not always necessary to collect a new sample prior to the provision of blood for patients. Consult with the Transfusion Service proper to collecting additional samples if status is unknown.
Sample Rejection:	Gross hemolysis, sample placed in serum separator tube (SST), specimen tube not properly labeled
References:	N/A