



Transfusion Service

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Human Blood and Blood Components(7/02)

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General Information

- The transfusion service operates 24 hours per day, 7 days a week.
- Services provided include blood component preparation, compatibility testing, and other red cell antigen/antibody testing.
- All blood products are obtained from the Community Blood Center, Dayton, Ohio.
- The Transfusion Service is accredited by College of American Pathologists. It is regulated by the Food and Drug Administration.

Specimen requirements

To be acceptable for pre-transfusion testing (TYAS, THLD, XM, TGR) and TYPE for plasma products (platelets, FFP, CRYO), specimens must be labeled at the time of collection with:

- Full patient name
- Medical record number
- Final check code (except neonates < 4 months of age)
- The specimen collector's tech code
- The collection date (*the specimen must be less than 72 hours old*)



The following specimens will normally be sufficient. In cases of antibody detection, or other serologic problems, additional samples may be requested:

Test	Specimen
Type & Crossmatch	3.0 mL EDTA (purple top) or 3 EDTA bullet tubes
Type & Screen	3.0 mL EDTA (purple top) or 3 EDTA bullet tubes
Type & Screen (for <i>NICU patients only</i>)	1 EDTA bullet tube
Type & Hold	3.0 mL EDTA (purple top) or 3 EDTA bullet tubes
Type (ABO/Rh)	3.0 mL EDTA (purple top) or 1 EDTA bullet tubes
Direct antiglobulin test	3.0 mL EDTA (purple top) or 1 EDTA bullet tubes

Physician order form

A Physician Order form must be submitted whenever a crossmatch or a blood product for transfusion is ordered. The following must be completed on the form:

- Patient's first and last name
- Medical record number
- Product and amount ordered
- Indications ("TF number")
- Physician's name and signature

Standing orders will not be accepted.



Sunquest ordering

Test	SunQuest Ordering (REI)	Notes
Type & Crossmatch	XM	<ul style="list-style-type: none"> → Includes ABO, Rh, antibody screen, and crossmatch. → If the crossmatch is ordered in mL, instead of units, enter "1" for "%Units Ordered" in Sunquest.
Type & Screen	TYAS	<ul style="list-style-type: none"> → Includes ABO, Rh, antibody screen
Type & Hold	THLD	<ul style="list-style-type: none"> → Does not include testing.
Type (ABO/Rh)	TYPE	<ul style="list-style-type: none"> → Includes ABO and Rh
Direct antiglobulin test (direct coombs)	DAT	
ABO Titer	ABOT	
Indirect Coombs (antibody screen)	IAT	



Components

Product	Storage Temp	Est. Vol.	Est. Hct	Crossmatch Required ?	Notes
Red blood cells (RBC), CPD	1-6° C	240 ml	65-70%	Yes	<ul style="list-style-type: none"> → CPD anticoagulant is used for NICU patients → Stocked at Children's Blood Bank
RBC, AS-5	1-6° C	340 ml	55-65%	Yes	<ul style="list-style-type: none"> → Stocked at Children's Blood Bank
Platelets, random	20-24° C	55 ml	N/A	No	<ul style="list-style-type: none"> → Special ordered from CBC → Must be leukoreduced prior to issue. → Will have 4 hour expiration when leukoreduced
Platelets, apheresis	20-24° C	200-350 ml	N/A	No	<ul style="list-style-type: none"> → Special ordered from CBC
Platelets, volume reduced	20-24° C	varies	N/A	No	<ul style="list-style-type: none"> → Special ordered from CBC → Used to reduce the volume of plasma infused, either to prevent circulatory overload, or to transfuse ABO incompatible platelets. → Requires 2 hours to prepare, leaving 2 hours for transfusion prior to expiration
FFP thawed	1-6° C	150-290 ml	N/A	No	<ul style="list-style-type: none"> → Stocked at Children's Blood Bank
Cryo thawed	20-24° C	5-10 ml	N/A	No	<ul style="list-style-type: none"> → Stocked at Children's Blood Bank



ABO Rh compatibility tables

Red Blood Cell Products			
Patient	1st Choice	2nd Choice	3rd Choice
O Pos	O Pos	O Neg	
O Neg	O Neg		
A Pos	A Pos	A Neg or O Pos	O Neg
A Neg	A Neg	O Neg	
B Pos	B Pos	B Neg or O Pos	O Neg
B Neg	B Neg	O Neg	
AB Pos	AB Pos or AB Neg	A Pos or B Pos	A Neg, B Neg, or O Neg
AB Neg	AB Neg	A Neg or B Neg	O Neg

Platelet Products				
Patient	1st Choice	2nd Choice	3rd Choice	Last Choice
O	O	A or B	AB	
A	A	AB	B (volume reduced)	O (volume reduced)
B	B	AB	A (volume reduced)	O (volume reduced)
AB	AB	A or B (volume reduced)		O (volume reduced)

FFP or Cryo			
Patient	1st Choice	2nd Choice	3rd Choice
O	O	A or B	AB
A	A	AB	
B	B	AB	
AB	AB		



Picking up blood products from the blood bank

- Only CMC employees may pick up blood products
- Blood will only be issued for one patient at a time
- Except for trauma and surgery patients, only one unit of blood will be issued at a time.

Transfusing blood

See the Nursing "Blood Administration" procedures for additional information

Transfusion reactions

All transfusion reactions must be reported to the blood bank and documented (as described in the Nursing "Blood Administration" procedures).

Leukoreduction of components

The policy at CMC is to use all leukoreduced products. Cellular products (RBC, Platelets, Apheresed Platelets) not already received as leukoreduced from CBC must be leukoreduced here prior to issue.

Irradiation of components

Indications for irradiation of cellular components (RBC and platelets) :

- Immunocompromised hematopoietic progenitor cell (HPC) or organ trans-plant recipients (this includes allogeneic and autologous HPC transplants)
- Patients with hematologic disorders who will be undergoing transplantation imminently
- Intrauterine transfusions
- Neonates undergoing exchange transfusion or use of extracorporeal membrane oxygenation
- Patients with Hodgkin's disease
- Patients with congenital cellular immunodeficiencies
- Chronic Lymphocytic Leukemia patients receiving fludarabine phosphate.
- At CMC it is also our practice to irradiate cellular products for all neonatal patients up to age 4 months.

FFP and cryo do not need to be irradiated.

Once irradiation is ordered, all subsequent products must be irradiated unless the first irradiation order was erroneous. Exception: once an infant reaches age 4 months, subsequent products do not need to be irradiated unless ordered by the physician.



CMV testing of components

- CMV negative requests are met through leukoreduction of 100% of RBC and Platelet products at CMC.
- NICU patients are an exception. Our neonatologists require CMV-seronegative RBC and platelets.
- FFP and cryo never need to be ordered as CMV negative.

Emergency release

- Uncrossmatched O Negative red cells are available for emergency release.
- An appropriately labeled sample must be submitted, preferably before uncrossmatched blood is issued, so that compatibility testing can be performed for issued units and any additional units.
- The ordering physician must sign an "Emergency Release of Red Blood Cells" form, either before or after transfusion. This form will be provided by the Blood Bank at the time blood is issued.

Neonatal transfusion

- Blood for neonatal patients can be issued based on a Type & Screen, without a full crossmatch, provided that group O cells are transfused and the antibody screen is negative.
- No subsequent testing will be required for the remainder of the admission until the patient reaches age 4 months.

Exchange transfusion

- Contact the Transfusion Service immediately when an exchange transfusion is being considered to allow ample time for patient testing and obtaining blood products.

Sickle cell patients

- Red cells transfused to Sickle cell patients must be tested as Sickle cell negative.
- Chronically transfused Sickle cell patients may be phenotypically matched for C, E, and K red cell antigens.
- It is the responsibility of the ordering physician to request Sickle cell negative units, and phenotype matched, if appropriate. The request must be documented on the Physicians Order form.



Autologous donations

- Arrangements for autologous donation are made through the Special Donations department at Community Blood Center (937) 461-3450.
- When a patient has autologous blood it must be used before any other products.
- Autologous blood cannot be used for other patients.
- Autologous blood must be ABO-rechecked upon receipt, and must be crossmatched in the same way as regular units.
- Autologous blood does not need to be irradiated.

Directed donations

- Arrangements for directed donation are made through the Special Donations department at Community Blood Center (937) 461-3450.
- Directed donor blood cannot be used for other patients.
- Directed donor blood must be crossmatched in the same way as regular units.
- Directed donor units must be ***irradiated*** prior to issue.
- Paperwork to request directed donations is available from the CMC Transfusion service.

Therapeutic Apheresis

- Arrangements for directed donation are made through the Apheresis department at Community Blood Center (937) 461-3450