

## Availability of Blood Products

The time necessary to process an order for administration of a blood product includes the time required to collect a specimen to identify the patient's blood type and the time to perform the necessary procedures for matching and preparation of the product.

The specimen used for product preparation procedure or the crossmatch will be collected within the following time frames:

**STAT:** immediately

**To Give:** within 1 hour of order receipt

**Routine:** within 2 hours of order receipt

Norman Regional Moore and Norman Nine has a limited Blood Bank test menu and available products. On site services include ABO/Rh, emergency release of O Neg PRBCs and Rhogam. Routine transfusions may take up to 4 hours for compatible blood products to arrive at NRM including FFP, Platelets and Cryoprecipitate.

After receiving a specimen in the Blood Bank, the product will typically be available in the times listed below:

Type for products	30 min
ABO/Rh Type	30 min
Type/Screen	60 min
Type/Crossmatch (PACKED CELL ORDERS) Routine	120 min
Type/Crossmatch (PACKED CELL ORDERS) STAT	75 min
Additional Crossmatched Products (Type/Screen completed)	15 min
Type/Crossmatch with Antibodies	3 hours or longer
MTP-Massive Transfusion Pathway; 6 PRBC, 6 FFP, 1PLT	Immediate
Emergency Release (uncrossmatched) Group O	Immediate
Type Specific Emergency Release	10 min
Transfusion Reaction Workup-initial testing	60 min
Antibody Titer	24 hours
Platelet pheresis (product on site)	30 min
Fresh Frozen Plasma (thawed) type specific	30-45 min
Fresh Frozen Plasma (thawed) Group A Emergency Release	Immediate
Cryoprecipitate (thawed)	30-45 min
Cytomegalovirus (CMV) Negative, Irradiated Hgb Neg products and platelet pheresis when not in stock, require additional time for preparation or to obtain from OBI	

## Autologous

Autologous donation is one in which the patient donates his/her own blood for possible use during elective surgery. It is the safest possible product for transfusion, but it must be initiated in advance of the scheduled surgery. The sooner that the request is initiated, the more donations the patient can make before surgery.

Requests for autologous blood must be initiated by the patient's physician. Donations are scheduled with the Oklahoma Blood Institute (405-297-5566). Norman Regional Laboratory Services (NRLS) Blood Bank is notified to expect autologous units. If the product is transfused, the patient will be charged by NRLS for blood product collection and for testing and handling.

A **type and crossmatch** is performed upon the patient's admission to Norman Regional Hospital (NRH). The patient must agree to receive blood from the regular inventory if blood requirements exceed the number of autologous units collected.

## Directed Donations

Directed donations are from donors selected by the patients or family members for direct infusion to the patient. The assumption that blood from patient selected donors is safer than that available from volunteer donors in the community has no scientific basis. Requests for directed donation put pressure on the selected donors which may cause them to be untruthful about their inability to meet donor requirements. Therefore, directed donations are discouraged, but accepted.

Directed donations are collected at the Oklahoma Blood Institute (405-297-5566), upon request of the patient's physician. Patients are charged an additional processing fee for directed donations to cover administrative costs. Directed donations that are not transfused to intended recipient will be retained until product expiration.

## Uncrossmatched Units of Blood

Occasionally, in an acute emergency situation blood must be issued before testing can be completed. Call the Blood Bank to request an “issue of Uncrossmatched Blood”. This is accepted as a verbal order. State the patient’s name, age/sex of patient, and the product and quantity.

Type specific blood is best, but Group O may be given to recipients of all blood types in the form of packed cells. Only 10 minutes is required to determine the ABO and Rh of a patient, once a specimen is obtained. If the ABO group has not been determined, group O packed cells will be issued by approved protocol. Changing back to group-specific blood may be done when the patient’s blood type is determined.

## Massive Transfusion Protocol

This protocol is called by a physician, usually from Emergency Department (ED), Surgery, Obstetrics Surgery, or Intensive Care Unit who designates a MTP nursing manager. Blood Bank prepares a MTP pack which consists of 6 packed cells, 6 fresh frozen plasma (FFP), and 1 platelet pheresis which is quickly available for transfusion. Multiple MTP packs may be ordered, if needed per the protocol.

## Collecting and Labeling Specimens

Because even the most extensive and technically correct compatibility testing is potentially dangerous if the recipient specimen is improperly collected or collected from the wrong patient, the following checks and procedures are established as the only acceptable manner in which such specimens will be collected.

Note: Blood Bank specimens are good for 72 hours

## Supplies and Equipment

- Orders and patient identification materials
- MC75 Handheld Device
- 6-mL pink-top (K2 EDTA) Vacutainer® tube
- Venipuncture equipment
- Blood Bank wristband (provided by NRHS laboratory), if tests are for potential transfusions.

## Procedure: Key Points

- Gather necessary supplies and equipment.
- Explain procedure to patient: explanations minimize anxiety.
- Verify the patient’s identification (ID). The patient must be wearing an armband with a current numerical identifier. Label the tube as follows:
  1. Ask patient to state his/her name.
  2. Match stated name to ID bands.
  3. Compare patient’s name and numerical identifier with the information imprinted on the test request label or Outreach requisition. All information must match exactly. Do not ask patient “is your name Mr. Smith?” (Many patients will answer ‘yes’ to any direct question. Do ask “What is your full name? How do you spell it?”
- **Perform Venipuncture** (see “Specimen Collection”). Collect a 6 mL pink-top (K2 EDTA) Vacutainer® tube. Additional specimens may be needed if the patient is already known to have a history of antibodies. Call the Blood Bank at 405-307-1126 for more information.
  - Blood must not be drawn from a heparin lock or IV tubing without first flushing the line with saline. The first 5-7mL must be discarded before collecting the specimen.
  - Hemolyzed specimens can’t be used as the hemolysis can mask the reaction of a hemolytic antibody.
- **Label Specimen at the patient’s chairside:** Attach the appropriate label or handwrite the following information on the tube:
  - **For Norman Regional Hospital inpatients and outpatients:** use chart or laboratory patient label (which includes the patient name, account number, date, time and collector’s Meditech ID. and unique Blood Bank wristband number. If using a chart label add date, time and collector’s Meditech ID.
  - **For PSC:** patient name label or handwritten full name, patient Social Security Number or last 4 digits of the SSN and unique Blood Bank Wristband number. Include collection date, time and collector’s initials.
  - **For offsite patients, physician’s office:** Hand written name, Social Security Number or last 4 digits, and date of birth, and unique Blood Bank wristband number. Include collection date, time and collector’s initials.

### Labeling continued...

- Obtain a Blood Bank wristband, firmly place a patient specimen label on, or handwrite the patient's full name and account number on the wristband.
- Attach the tear-off label with the unique Blood Bank number to the specimen.
- Attach the Blood Bank wristband to the patient's arm.
- Verify all information for correctness and completeness. If labels are incomplete, the specimen must be redrawn. Specimens will be examined by the Blood Bank technologist. Information on the tube label is compared with the request label.
- Any specimen not meeting all the listed requirements will be rejected, and a new properly collected specimen will be required.
- Transport the labeled specimen to the laboratory. Insert computer label, request form and the patient information sheet into the outer pocket of a biohazard specimen bag.
- If blood needs to be Emergency issued, Group O blood may be obtained without crossmatch. When requesting uncrossmatched group O blood, notify the Blood Bank at 405-307-1126 for Porter and 405-515-0125 for HealthPlex.

### Getting Blood Products from the Blood Bank

NRHS locations enter a "Blood Product Order" in Meditech. PSC will fax a "Transfusion Request Form: to 405-515-0124. If picking up the blood in person, bring the request form. A separate Transfusion Request Form and Blood Product Issue order is needed for each unit of blood. If multiple units are to be hung at the same time, then one request form or order will suffice to request all of the products.

### *The procedure for picking up blood from the Blood Bank is as follows:*

- Prior to Nursing Personnel going to the Blood Bank to pick up blood products, a "Blood Product Issue" order is entered into Meditech or a completed Transfusion Request Form is brought to the Blood Bank. In urgent situations products will be dispensed by providing the patient's chart labels.
- The blood product issuing procedure is performed by the Blood Bank Tech in Meditech including documentation of the requesting nurse that is entered on the "Blood Product Issue" order or Transfusion Request Form.
- Blood products that are to be stored or transported in coolers are packed in a manner to maintain acceptable temperature.

### *The procedure for blood issue via pneumatic tube is as follows:*

Nursing service enters a "Blood Product Issue" order in Meditech.

- The blood product issuing procedure is performed by the Blood Bank Tech in Meditech including documentation of the requesting nurse that is entered on the "Blood Product Issue" order or Transfusion Request Form.
- The unit of blood is bagged, placed in a carrier and sent to the unit. The unit is notified that the blood product has been sent via pneumatic tube system. Blood Product Issue order is completed in the computer.
- A unit of blood cannot be returned to Blood Bank if it has been out of the Blood Bank for more than 30 minutes or temperature exceeds 10° C. If unit is returned but found to be unsuitable for reissue, the product is destroyed.



## Blood Products General Information

Detailed information about blood and blood product transfusion is included on the “Consent for Transfusion of Blood and Blood Products” form.

- Obtain patient consent for transfusion before taking blood or blood products from the Blood Bank. Patient or authorized person signs the form.

**Blood products should be administered within 4 hours after being dispensed from the Blood Bank.**

- It is preferable to administer blood products immediately. Return product to Blood Bank if it cannot be started within 30 minutes of issue.

**Piercing the bag with IV tubing contaminates the unit of blood.**

- May be transfused immediately: unit cannot be returned if transfusion is postponed.

**Blood returned within 30 minute time limit may be reissued under certain conditions.**

- Container closure must not have been penetrated or entered in any manner.
- Pigtailed or sealed segment of integral donor tubing must remain attached to container. Records must indicate that blood has been reissued and re-inspected prior to reissue.
- Temperature requirements are met.
  - RBCs are stored between 1-6° C and transported 1- 10° C.
  - Platelets are stored at room temperature, 20-24° C
  - Thawed plasma is stored between 1-6° C and transported 1- 10° C
  - Thawed Cryoprecipitate is stored at room temperature, 20-24° C

## Outpatients Receiving a Transfusion

Outpatients may receive blood in the hospital or at a designated site such as a surgical center. Some protocols may be specific to the site. Outpatients who are to receive a transfusion of blood products within a NRH facility are urged to have a pilot tube drawn on the previous day. A request for blood products is required. An armband is placed on the patient immediately following the time of collection of the blood specimen.

The procedure request and the armband includes:

- Patient’s complete name: first and last name.
- Account number (for inpatients) and Social Security Number (or last four digits) and date of birth (non-hospital patients).
- Date and time of collection.
- Initials or Meditech ID of person collecting the blood.
- Blood Bank unique ID number.

A copy of “Patient’s Instructions for Post-Transfusion Care: Signs of Complications” is given to the patient post transfusion by the transfusionist.

## Administration of Blood Products

TAR-Transfusion Administration Record

TAR uses the scanning of the patient’s wristband, Blood Bank wristband and the blood product bar codes for positive identification. Vital signs and transfusion reactions are documented in TAR.

## Downtime Procedures

At the patient’s bedside, perform ID of patient and blood product according to established procedure. This step should be performed by 2 licensed personnel (1 of which is an RN).

- Ask patient to state his/her name, if possible.
- Compare patient name and account number to patient’s hospital and Blood Bank armbands, crossmatch/assignment tag and issue/transfuse sheet.
- Compare the ABO/Rh of unit to crossmatch/assignment tag and issue/transfuse sheet.



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## Downtime Procedures continued...

- Compare the unit number to crossmatch/assignment tag and issue/transfuse sheet.
- Compare the blood product expiration date on bag to the crossmatch/assignment tag and issue/transfuse sheet.  
*Note: During unexpected computer downtimes the crossmatch/assignment tag is not available and will not be attached to the blood products.*
- Venipuncture: use 19 gauge needle or larger.
- Infusion solution: use only normal saline
- Filters: Red cells, whole blood, platelets, FFP and cryoprecipitate should be administered through a filter in blood infusion set. Change blood filter tubing set after every second unit, or every 4 hours, whichever comes first. Change entire tubing set (primary and blood) at completion of infusion.
- Rate of infusion: PRBC=125mL/hr. Plasma, Platelets and Cryo=250mL/hr. The transfusion should be complete within 4 hours due to the dangers of bacterial growth and red cell hemolysis.
- Nursing Care:
  - Obtain baseline values for temperature, pulse, respiration, and blood pressure before beginning transfusion.
  - The rate of infusion for the first 15 minutes should be very slow. Observe patient closely during this period, and increase rate of infusion if transfusion proceeds normally.
  - Warming of blood is not necessary unless: infusion rate is >100mL/min as in massive transfusions; patient has a potent cold agglutinin; or exchanging in a newborn.
  - When using a blood warming device, keep water bath temperature between 35° C and 38° C. Once blood has been warmed it cannot be returned to the blood bank.

## Rho (D) Immune Globulin (RHO)

RhO (D) Immune Globulin is a solution of IgG anti-D. This globulin suppresses the immune response in the Rh-negative mother by destruction of fetal D-positive cells or by preventing recognition of D-positive cells by the immune system. The actual mechanism of immunosuppression is unknown. Rh-immune globulin is administered within 72 hours after delivery or any situation when fetomaternal hemorrhage results.

### Rho (D) Immune Globulin (RHO) continued

For prenatal patients, a **type** is ordered and the mother's Rh is determined. If the mother is negative, RHO is ordered to obtain the product for administration.

For post-partum patients, evaluation of the cord blood determines if Rhogam is warranted. If the Rh is negative, no RhIG procedures are necessary. If the cord blood is Rh positive, a fetal screen is performed.

If the fetal screen is positive, a Kleihauer-Betke stain is performed by a reference laboratory and these results are used to determine the level of Rh-immune globulin dosage. The Rho order is placed, and then the "Blood Product Issue" order is entered in Meditech for the Blood Bank to send the Rh immune globulin for administration.

## Therapeutic Phlebotomy

Therapeutic phlebotomy is a term used when blood is drawn to reduce volume for medical indications. Blood is taken from a prominent vein on the patient's arm, usually in the area of the antecubital fossa.

- Therapeutic phlebotomy is performed only at the request of the patient's physician who specifies the amount of blood to be collected.
- Therapeutic phlebotomies are performed for inpatients by OBI (Oklahoma Blood Institute) or NRHS Outpatient Infusion Center. Please contact OBI at (405) 297-5800 to schedule the procedure.
- Outpatients may be referred to NRHS Outpatient Infusion Center (OIC) by calling (405)307-4038 or the OBI center on 24<sup>th</sup> Ave. NW in Norman.

