# Section IV – Transfusion Service Policies

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Introduction

Each employee involved with patient treatments that include blood or blood products should be familiar with the policies/procedures included in this section of the Laboratory Manual and the Marin General Hospital “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS” policy.

Pre-transfusion Consents

Prior to transfusion, obtain “Physician Documentation for Informed Consent for Blood”, which includes:

- “Paul Gann Blood Safety Act - Patient Notification” (only one consent is required during each hospital stay)
- Consent to Surgery, or Special Diagnostic/Therapeutic Transfusions (medical consent for transfusions)

Follow hospital policy and procedure outlined in “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”.

Transfusion Service TAT

The turn-around-times (TAT) for common Transfusion Service testing are listed below:

Note: The physician and/or nursing unit will be notified immediately should there be any delays in these published TAT’s.

<table>
<thead>
<tr>
<th>IF</th>
<th>TAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT crossmatch or type and screen</td>
<td>45 minutes from receipt in the Lab to result</td>
</tr>
<tr>
<td>ASAP</td>
<td>Up to 2 hours from receipt in the Lab to result</td>
</tr>
<tr>
<td>Routine crossmatch or type and screen</td>
<td>Within the shift (from receipt in Lab)</td>
</tr>
<tr>
<td>Frozen Plasma or Cryoprecipitate</td>
<td>30 minutes from a request to thaw the product to the product being available</td>
</tr>
<tr>
<td>Plateletpheresis, product in stock at MGH</td>
<td>15 minutes from request to product availability</td>
</tr>
<tr>
<td>Plateletpheresis, product at BCP</td>
<td>1-2 hours for transport to the MGH Transfusion Service from BCP in San Francisco</td>
</tr>
<tr>
<td>Special Products (CMV Negative, Irradiated, Neonatal split units, etc)</td>
<td>1-2 hours - directly ordered from Blood Centers of the Pacifc (BCP)</td>
</tr>
<tr>
<td>Emergency Release of Uncrossmatched O negative packed cells - see special blood bank policies</td>
<td>5 minutes or less from receipt of a phone call (ext 7159), or Vocera call “Blood Bank”, depending on product availability.</td>
</tr>
<tr>
<td>Massive Transfusion</td>
<td>See special Blood Bank policies</td>
</tr>
<tr>
<td>Transfusion Reaction Work-up</td>
<td>60 minutes from receipt in Lab to preliminary report</td>
</tr>
</tbody>
</table>

Continued on next page
Transfusion Service Policies, Continued

Specimen For Type & Cross

Obtain an EDTA anticoagulated blood specimen, label properly with patient’s name, birth date, and time of draw, and employee number (or employee’s legible signature). Attach to the specimen, a unique alphanumeric sticker from the patient’s red blood bank armband.

Follow hospital policy and procedure outlined in “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”.

NOTE: A Blood type-confirmation (B-CONF) will be required if there is no MGH previous record of a blood type.

Blood and Blood Component Compatibility

The following table is used to select the correct blood group for transfusion of whole blood, packed cells or any plasma product (frozen plasma, cryoprecipitate, platelet products, etc). The laboratory may issue, depending on the blood bank’s stock of available blood, any combination of acceptable RBC or FFP units for a patient’s blood type.

<table>
<thead>
<tr>
<th>Patient Blood Type</th>
<th>Acceptable RBC Units</th>
<th>Acceptable FFP units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>A+, A-, O+, O-</td>
<td>A+, A-, AB+, AB-</td>
</tr>
<tr>
<td>A-</td>
<td>A-, O-</td>
<td>A+, A-, AB+, AB-</td>
</tr>
<tr>
<td>B+</td>
<td>B+, B-, O+, O-</td>
<td>B+, B-, AB+, AB-</td>
</tr>
<tr>
<td>B-</td>
<td>B-, O-</td>
<td>B+, B-, AB+, AB-</td>
</tr>
<tr>
<td>AB+</td>
<td>AB+, AB-, A+, A-, B+, B-, O+, O-</td>
<td>AB+, AB-</td>
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<tr>
<td>AB-</td>
<td>AB-, A-, B-, O-</td>
<td>AB+, AB-</td>
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<td>O+</td>
<td>O+, O-</td>
<td>AB+, AB-, A+, A-, B+, B-, O+, O-</td>
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<tr>
<td>O-</td>
<td>O-</td>
<td>AB+, AB-, A+, A-, B+, B-, O+, O-</td>
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</tbody>
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**Procedure for Signing Out Units for Transfusion**

Blood and blood products can be issued to a RN, MD, CLS, LVN and unlicensed hospital personnel who have documented annual training and competency in this procedure. All staff transporting blood products must have a sticker with current year indicating the Healthstream competency for picking up blood has been completed. Nursing managers are responsible for assuring their staff is assigned the competency, and for distributing the sticker to staff members upon completion of the competency. Nurse managers should obtain current stickers from the blood bank.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
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</table>
| 1    | Ensure MD’s order is complete and all consents are obtained, completed, and charted.  
- Physician Documentation for Informed Consent for Blood Administration  
- Consent to Surgery, or Special Diagnostic/Therapeutic Transfusion |
| 2    | Obtain label with patient’s name, date of birth, and unique alphanumeric number from the patient’s red transfusion service wristband. Place the stickers on the pink: Blood Component Release form and bring to the blood bank. It is acceptable to write the blood bank ID bank alphanumeric number on the form. |
| 3    | Verify and read back patient label information, the blood product unit tag, the transfusion record form, the unit label securely attached to the unit, as well as the LIS information for two patient identifiers:  
- Patient name and date of birth  
- Unique alphanumeric number (from patient’s red Transfusion Service wrist band)  
- ABO and Rh type of donor unit  
- ABO and Rh of patient  
- ABO and RH compatibility of donor unit and patient  
- Compatibility of crossmatch if indicated  
- Unit number and expiration date |
| 4    | Blood product must be inspected for bag integrity. Additionally, blood product must be inspected for abnormal color, appearance, and presence of clots.  
*Note:* Packed cells should be deep red in color, plasma should be yellowish and clear in color and unit should be free of clots. |
| 5    | Both employees must sign the Transfusion Record form, accepting responsibilities that all of the verification information is correct, and that the sign-out procedure has been followed. |
| 6    | The transaction is documented into the Laboratory Information System by the CLS.  
*Note:* In LIS downtime the blood bank log may be used in lieu of a computerized sign-out. All information is subsequently entered into the laboratory information system as soon as possible. |
### Transfusion Service Policies, Continued

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<thead>
<tr>
<th>Section</th>
<th>Policy Description</th>
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<tbody>
<tr>
<td>7</td>
<td><strong>Blood products</strong> are placed in a plastic zip lock bag for immediate transport to the site of the transfusion. The temperature of blood transported, temporarily stored in a blood bank cooler, must be monitored to assure safety and quality. A Safe-T-Vue temperature sticker is affixed to packed cells, and Checkpoint temperature probe is placed in a cooler following Transfusion Service policies and procedures. An exception is a Massive Transfusion.</td>
</tr>
</tbody>
</table>
| 8 | With the first unit of each transfusion episode, lab personnel will provide:  
- Transfusion of Episode Documentation form  
- Post Transfusion Instructions form  
- Documentation of Indication for Transfusion Sticker (to be placed on physician order sheet)  
- Red Biohazard bag (to store used blood product bags transfused in the episode) in case a possible transfusion reaction occurs, and a transfusion reaction workup is ordered. |
| 9 | Refrigerated blood products cannot be returned to the Blood Bank for reissue if it has been out of refrigeration for longer than 30 minutes. Therefore, **routinely**, only one blood product is signed out for a patient at a time.  
If a cooler is used, refrigerated blood products can remain in the cooler as long as the Safe-T-Vue monitoring devices and Checkpoint temperature probe indicates the acceptable temperature of the blood products has not been exceeded.  
*Note:* Blood signed out for transfusion must be transfused within four hours. |
**Leukocyte-Poor Packed Cells**

100% of the red cell inventory at MGH is prefiltered leuko-depleted packed cells. Red cells (except for autologous blood) must be transfused within three days from the date the crossmatch blood sample was drawn. Random, designated, and autologous should be crossmatched prior to transfusion, except if transfusion order is an emergency or massive.

Pre-storage Leukodepleted packed cells contain less than $5 \times 10^8$ residual Leukocytes. A benefit of prefiltered blood is that compared to bedside filtration, the length of time for transfusion is significantly reduced. Prefiltered blood represents a major advance in improved red blood cell quality which reduces the likelihood of transfusion reactions, HLA Alloimmunization, certain types of viral transmission and reactivation and helps prevent the immunomodulatory effects associated with exposure to donor leukocytes.

A Transfusion Service history of a previously confirmed ABO and Rh is required, or a Blood type confirmation (B-Conf) must be performed. The patient’s identification must include the blood bank identification band number.

**Indications:**
- If the patient requires only supplementation of oxygen-carrying capacity, red blood cells is the component of choice. If blood loss was acute, the patient's measured hemoglobin and hematocrit may remain normal or nearly normal for an hour or more, but he/she may nevertheless require transfusion for hypovolemia. In most patients, the loss of approximately 20% of blood volume can safely be corrected by crystalloid (electrolyte) solutions alone.
- When anemia has developed over a long period of time the patient may be asymptomatic and not require transfusion. The presence of symptoms, not of abnormal laboratory findings, should dictate decisions.
- There is no evidence that it is necessary to transfuse a patient to “normal” hemoglobin prior to surgery.

**Required monitoring:**
- Hgb, Hct before administration (within 24 hours)
- Hgb, Hct after each transfusion (within 24 hours)

**Effectiveness, post transfusion:**
- One unit of red cells should raise the hemoglobin concentration in an average adult by approximately 1g/dL (raise hematocrit by percentage points)

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**Washed Packed Cells**

- Washed packed cells is no longer a routine method of providing a leukopenoor product. Washed packed cells is an open system of removing white cells and plasma and therefore this preparation must be transfused within 24 hours. Washed packed cells are ordered directly from Blood Centers of the Pacific.
- Units prepared by washing may be indicated for patients with conditions that require transfusion of red cells with minimal amounts of plasma. These units may be used in patients with antibodies to IgA or IgE. IgA deficient patients who have anti-IgA antibodies with a risk of anaphylactic reactions may also be transfused with blood from an IgA deficient donor.
Autologous Blood

- Request for Autologous blood donation is initiated by the patient’s physician by contacting Blood Centers of the Pacific (415) 567-6400.
- Autologous blood is delivered to the MGH Transfusion Service in the form of packed cells. Autologous blood, once set up for transfusion, will be held in the Transfusion Service until the expiration date on the unit. Verification of the patient’s type, antibody screen and crossmatch will be performed by MGH Transfusion Service.

Designated Donor Blood

- Request for Designated donor blood donation is initiated by the patient’s physician by contacting Blood Centers of the Pacific (415) 567-6400.
- The Blood Center of the Pacific requires three to five days for processing designated donations.
- Designated donor blood is delivered to the MGH Transfusion Service in the form of packed cells. Red cells must be transfused within three days from the date the crossmatch blood sample was drawn.
- Transfusion Service History of a previously confirmed ABO and Rh is required, or a Blood Type Confirmation (B-Conf) must be performed. The patient’s identification must include the blood bank identification band number.
- Once the patient has been discharged, unused designated units are released to the random donor stock.
Frozen Plasma

- Frozen plasma serves as a source of plasma proteins for patients who are deficient in, or have defective plasma proteins.
- Blood Centers of the Pacific in San Francisco provides MGH Transfusion Service with plasma frozen within 24 Hours. In defined clinical situations where a factor VIII level below 50% exists and surgery is required, then the use of factor VIII concentrates should be considered. In those patients with severe Von Willebrand’s disease, factor VIII plus Von Willebrand factor replacement through concentrates is recommended. Factor VIII is available through the pharmacy.
- MGH Transfusion Service History of a previously confirmed ABO and Rh is required, or a Blood Type Confirmation (B-conf) must be performed for type specific FFP. A current Blood Bank specimen is required to be tested for ABO Rh type. AB FFP is the universal FFP type. Patient’s identification must include the blood bank identification band number. No crossmatch is required to issue frozen plasma products.
- Frozen plasma may be ordered as single units or in groups of two (2) units. Units will be thawed and available in 30 minutes by the Blood Bank as they are needed for transfusion. FFP once thawed, has a shelf life of 24 hours at 1° to 6°C. The plasma can be relabeled as “thawed plasma”, which can be stored for an additional four days at 1° to 6°C. Thawed plasma with an outdate of 5 days, contains reduced levels of Factor V (> 40%). FFP should not be used when coagulopathy can be corrected more efficiently with specific therapy.

Cryoprecipitate

- Cryoprecipitated AHF may be indicated for treatment of congenital or acquired fibrinogen deficiency or Factor XIII deficiency. Cryoprecipitate should be used only if virus inactivated Factor VIII concentrates or recombinant factor preparations are not available for patients with hemophilia A or Von Willebrand disease. Cryoprecipitate may also be used as fibrin adhesive.
- A Blood Type Confirmation (B-Conf), or a Transfusion Service History of a previously confirmed ABO and Rh is required. A current blood bank specimen is required to be tested for the ABO Rh type. The patient’s identification must include the blood bank identification band number. No crossmatch is required to issue cryoprecipitate products.
- Cryoprecipitate is usually ordered in groups of 10 units for adults. Prepooled units containing 5 donor units will be provided routinely. Units will be thawed by the Blood Bank as they are needed for transfusion. Once thawed cryoprecipitate must be used within six hours. Please allow 30 minutes to thaw. Thawed cryoprecipitate is stored at room temperature.
Platelets

- Platelet transfusion is indicated for treatment of patients bleeding due to critically decreased circulating platelet count or functionally abnormal platelets.

- A Transfusion Service History of a previously confirmed ABO and Rh is required, or a Blood Type Confirmation (B-Conf) must be performed. The patient’s identification must include the blood bank identification band number.

- A Blood Type Confirmation (B-Conf), or a Transfusion Service history of a previously confirmed ABO and Rh is required. No crossmatch is required to issue platelet products. A current specimen (labeled with the alphanumeric Blood Bank number) is required for the specimen to be tested for a current ABO Rh.

- Platelets are primarily ordered as one to two plateletpheresis units. One plateletpheresis is an interchangeable product with 6-8 platelet concentrates. Individual platelet concentrates are not available. A plateletpheresis is usually provided as a leuko depleted component. If plateletpheresis is not leuko depleted, a leuko depleted filler will be issued with the unit for transfusion. Platelets remain at room temperature and should never be warmed, or refrigerated. Platelets require at least 15 minutes agitation prior to issue.

THE REFRACTORY PATIENT: CROSSMATCHED VERSUS HLA MATCHED PLATELETS:

Failure of transfused platelets may be due to non-immunologic causes such as disseminated intravascular coagulation, or sepsis and should be ruled out before attributing failure to immunologic causes. Additionally, ITP cannot be effectively treated by allogeneic platelet transfusions. Sixty percent (60%) of transfused platelets should appear in circulation unless they are being destroyed by alloantibodies induced by previous transfusions, pregnancies, or allografts. Forty percent (40%) of transfused platelets will pool in the spleen.

Special circumstances (approved by pathologist):

Finding HLA identical or near-identical donors is difficult and it is generally agreed that 30% of HLA-compatible transfusions are unsuccessful, presumably because the patient has formed non-HLA antibodies or non-complement-fixing HLA antibodies. An alternative approach to HLA typing is to select compatible platelets by a crossmatch technique which detects all significant antibodies whether HLA or not. Blood Centers of the Pacific uses a commercially available solid phase technique, and platelets in their inventory are crossmatched first so that compatible platelets, if found, can be dispensed immediately. Crossmatched platelets are more effective, faster, and less expensive. Blood Centers of the Pacific recommends that platelets be selected by crossmatch first. Subsequent transfusions from identified compatible donors can be carried out using platelets collected from those donors by apheresis. If sufficient compatible donors cannot be obtained after crossmatching 100 random donor platelets, then Blood Centers of the Pacific would call in HLA-matched platelet donors.

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Transfusion Service Policies, Continued

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<tr>
<th>Platelet Transfusions Therapy (cont.)</th>
<th>Required monitoring:</th>
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<tbody>
<tr>
<td></td>
<td>Platelet counts from the recipient prior to the transfusion, one hour later and 18-24 hours after transfusion, so that the clinical effectiveness of the selected platelets can be established.</td>
</tr>
</tbody>
</table>

| Effectiveness Post Transfusion | One platelet pheresis should increase the platelet count by 30,000 to 60,000/microliter when measured 10 minutes to one hour post infusion. |

| Albumin Solution | Obtained from Pharmacy. Refer orders to the Pharmacy Department. |

| Zoster Immune Globulin | Obtained from the Pharmacy. Refer orders to the Pharmacy Department. |

| NOVO Seven (Factor VII) | Obtained from the Pharmacy. Refer orders to the Pharmacy Department. |

| Recombinant (Factor VIII) | Obtained from Pharmacy - special orders. Refer orders to the Pharmacy Department. |

| Profilnine (Factor IX) | Obtained from the Pharmacy. Refer orders to the Pharmacy Department. |

| Humate P Von Willebrand | Obtained from the Pharmacy. Refer orders to the Pharmacy Department. |
Follow hospital policy and procedure outlined in “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”.

- Follow physician’s orders for pre-transfusion medications and/or rate of infusion. Typically, approximately 30 minutes prior to the onset of the blood infusion episode, Benadryl (12-25 mg) is administered to minimize the risk of hives and Tylenol (325 mg 1-2 tablets) is administered to minimize the risk of fever. The transfusion should be completed within four hours due to the potential risk of bacterial proliferation.

- All blood components must be transfused using a blood filter - see “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”.

- NEVER USE LACTATED RINGERS OR DEXTROSE CONTAINING SOLUTIONS AS A BLOOD ADMINISTRATION SOLUTION. USE ONLY STERILE NORMAL SALINE.

When dextrose-containing solutions precede or follow blood products, the filter and related tubing must be flushed with saline. Prime Y blood administration set with Normal Saline, making certain the in-line filter is completely covered to prevent hemolysis. If blood is administered by pump, use specialized transfusion set for the pump.

- Lactated Ringers solutions contains ionized calcium that reverses the anticoagulant and allows small clots to form.

- In vivo hemolysis occurs when red cells are exposed to 5% dextrose in water or saline. Glucose solutions also tend to clog the tubing.

- Never add medication to blood. Addition of medication can cause hemolysis or agglutination of RBCs and can be a source of contamination.

- Avoid medication administration through same IV lines, if possible. If necessary to administer medication through same line, flush the tubing with saline before and after medication is administered. If situation precludes this, consult with physician regarding the administration of blood and medication.

Warming of blood before transfusion is usually unnecessary, but maybe appropriate in unusual circumstances such as:

1. Massive transfusion or when the infusion rate is greater than 50 mL/minute;
2. Exchange transfusion of the newborn; children receiving blood in excess of 15 ml/kg/hour.
3. Patients with potent cold agglutinins (Blood Bank will label these units accordingly).

The warming system is equipped with a visible thermometer and an audible warning system. Blood must not be warmed above 42°C.
The following filters are available for transfusing blood and blood components:

1. A standard (170-260 micron pore size) filter must be used in transfusing packed cells and blood components, and can be used to transfuse up to two units of blood product, for up to four hours per filter (available from Central Supply).

2. Microaggregate transfusion filters have a 20-40 microns pore size, and removes fibrin strands (clumps of dead cells). Blood components can be transfused using this filter, and up to 4 units of blood can be given per filter, with filter use not to exceed 4 hours.

3. Depth-type microaggregate filters or any filters capable of removing leukocytes, must not be used for transfusion of granulocyte concentrates, or plateletpheresis units (available from Central Supply).

Irradiation

Irradiated blood is indicated for use in patient groups that are risk for Graft versus Host Disease (GVHP) from transfusion. At-risk groups include:

- Fetuses receiving intrauterine transfusions
- Selected immunocompromised, or immunocompetent recipients
- Recipients of cellular components known to be from a blood relative
- Recipients who have undergone a bone marrow transplant or peripheral blood progenitor cell transplantation
- Recipients of cellular components whose donor is selected for HLA compatibility.

Irradiated blood products are provided by Blood Centers of the Pacific on request. Irradiated units will have a 28 day outdate from the date of irradiation, but not more than the outdate of a non-irradiated unit.

CMV

CMV seronegative blood is indicated in CMV seronegative recipients who are at risk for severe CMV infections. These at-risk groups include:

- Pregnant women and their fetuses
- Low birth weight infants
- Marrow transplant recipients
- Solid organ transplant recipients
- Severely immunosuppressed recipients
- HIV infected patients

CMV negative blood products are provided by Blood Centers of the Pacific upon request.

Continued on next page
Transfusion Service Policies, Continued

Completion of Transfusion

- When the transfusion is completed, if there has been no reaction, date and sign the appropriate section of the Transfusion Record form. Place the tubing and empty blood product bag into a red biohazard trash bag (provided by Transfusion Service when the first unit is released). Retain the red biohazard bag until 1 hour post completion of the entire transfusion episode. Discard the red biohazard trash bag after the 1 hour post transfusion vital signs have been found to be acceptable.

- If a transfusion reaction is suspected, stop the transfusion immediately and follow the steps listed on the reverse side of the “Transfusion Episode Documentation” form. Complete the form and place the tubing and blood product bag into a red biohazard trash bag and immediately submit to the Lab.

- Post-transfusion instructions are given to each patient receiving blood. The documented and signed Post Transfusion Instructions form is filed in the patient’s chart. Patient copy is given to the patient.

- Follow hospital policy and procedure outlined in “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”.

Transfusion Reactions

Transfusion reactions are evaluated immediately. When there is a suspected adverse reaction to a transfusion, the nurse attending the patient will immediately notify the attending physician and the Blood Bank extension at 7159.

Immediately submit the following to the Laboratory:

1. Lab copy (yellow) of the completed Transfusion Record form
2. Red Biohazard Bag (containing the tubing and the remaining blood product)
3. Completed Blood Transfusion Episode Documentation form (see reverse side of form for transfusion reaction documentation)
4. Copy of the patient’s Medication Administration Record (MAR)
5. Post Transfusion Urine Specimen
6. Post Transfusion EDTA Blood Specimen (Call Lab for blood draw if necessary.)

- A Pathologist reviews all transfusion reaction work-ups and will notify the patient’s physician immediately if the reaction indicates a hemolytic transfusion reaction, bacterial contamination, delayed transfusion reaction, TRALI, or other significant outcome.

- See hospital policy and procedure “ADMINISTRATION OF BLOOD AND BLOOD COMPONENTS”, for detailed descriptions of transfusion reactions.
Transfusion Service Policies, Continued

Transfusion Reactions, continued

• If the patient’s clinical condition strongly suggests any other adverse reaction, further investigation is warranted despite negative results from preliminary testing.

• If hypotension and/or a greater than 2°F (or 1°C) rise in temperature occurs, blood cultures may be indicated on the remaining donor blood and on the patient. Notify the physician immediately and order blood cultures on the donor blood if bacterial contamination is suspected. Donor bags from transfusion reaction will be held for at least 48 hours pending orders to culture.

IgA Deficiency Transfusion Reaction

• A very severe form of transfusion reaction that does not involve any red cell destruction is associated with IgA deficiency. IgA deficient people can form IgG, complement-binding anti-IgA, and may have a severe anaphylactic reaction when transfused with blood components that contain IgA. Such patients must be transfused with washed or frozen-thawed red cells or receive blood products made from IgA deficient donors.

• Immediately report to the pathologist and physician.

TRALI

Transfusion related acute lung injury (TRALI) is caused by noncardiogenic pulmonary edema due to passively transfused donor leukoagglutinins. Suspected cases of TRALI are immediately reported to the pathologist and Blood Centers of the Pacific by the Blood Bank. Once confirmed, the physician will be notified.

Transfusion Transmitted Diseases

Blood Centers of the Pacific (BCP) has established policies and procedures, based on their accreditation standards, for investigation and follow-up of suspected transfusion transmitted diseases. The Pathologist, in consultation with the attending physician, will follow-up with the patient involved when there is a potential risk that a transfused donor unit is suspect.

Blood Product Deviation

The MGH Transfusion Services submits a written report for all suspected blood product deviations to the Centers for Biologics Evaluation and Research (CBER) within 45 days of the occurrence.

Transfusion Fatality

When a fatality occurs as a result of a complication of blood, or blood transfusion components the MGH Transfusion Service will:

• Within one business day, notify the Director, Office of Compliance and Biologics Quality, Center for Biologics Evaluation and Research (CBER).

• Submit within seven days after a fatality, a written report to the Director, Office of Compliance and Biologics Quality (HMF-600, CBER, FDA)

• Immediately notify CAP of an investigation of the laboratory by a governing entity.

Continued on next page
Transfusion Service Policies, Continued

**Emergency/Massive Transfusion (Uncrossmatched)**

- Four uncrossmatched group O RBC’s in a cooler available in five minutes from the time a verbal call (phone extension 7159, Vocera “Blood Bank”) is received in the Blood Bank.
- Blood Bank will initiate the “Request for Uncrossmatched Blood” form. Blood will be ready to be picked up within five minutes.
- Identification sticker should be available for sign-out.
- Follow Trauma Policy and Procedure 6004.1
- Uncrossmatched *type specific blood* will only be issued if the recipient has previous blood type history in the Blood Bank or Blood type confirmation (B-conf) result.
- Only one person in Blood Bank is required to sign-out group O RBC’s and AB FFP (Universal Donor) No Blood Type Confirmation required

Massive Transfusion RBC and FFP products issued in groups of four. Follow protocol for emergency release. A massive transfusion should be receiving blood components at ratios of 12 RBC’s : 12 units of FFP : 2 plateletpheresis. Note: goal is 1:1 ratio of RBC:FFP.

<table>
<thead>
<tr>
<th>For Every x units of RBC’s</th>
<th>Transfuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 units</td>
<td>4 units FFP</td>
</tr>
<tr>
<td>6 units</td>
<td>1 plateletpheresis</td>
</tr>
<tr>
<td>20 units</td>
<td>2 units cyro-pool, or 10 units of cyroprecipitate (depending on fibrinogen level)</td>
</tr>
</tbody>
</table>

**Forms**

1. Refusal to permit Blood Transfusion
2. Consent for Blood/Synthetic Products
3. Physician Documentation Informed Consent for Blood (physician documentation)
4. Consent to Surgery or Special Diagnostic/Therapeutic Procedures (patient documentation - one per hospitalization)
5. Blood Component Release Form (required to pickup blood from blood bank)
6. Blood Transfusion Record (given with a blood/blood component)
7. Documentation of Indication for Transfusion Sticker (given by blood bank to place on the MD order sheet - one for each transfusion episode)
8. Blood Transfusion Episode Documentation (one for every unit)
9. Post Transfusion Instructions (one per hospitalization)
10. Request for Issue of Uncrossmatched Blood (initiated by calling blood bank for an emergency or massive transfusion)
Special Blood Bank Policies

1. Giving Blood Without Crossmatch: When the attending physician stipulates that the clinical situation warrants, type specific or type compatible blood may be given before crossmatch is completed. Emergency Release policy and procedures are followed. Regulations require a physician's signature to authorize the transfusion of uncrossmatched blood.

2. Returning Blood to Bank. Blood products issued after 30 minutes, must be discarded per Blood Bank protocol. Blood issued in coolers (WIC/ Surgery/ Emergency), Massive Transfusion, or units to be transported with a patient to another facility

3. Request to “Crossmatch and Hold”: Type and Crossmatch will be done and held for three days. Transfusion Service will reconfirm with the physician the continued need every three days to re-crossmatch.

4. Requests to “Type and Screen”: Requests to type and screen for possible crossmatch, must be reconfirmed every three days.

5. The services of Blood Centers of the Pacific Blood Bank Reference Lab may be required for patients with complicated compatibility problems. The work involved will be determined by the nature of the problem, resources required, and the urgency required to obtain needed blood. The reference lab has regular hours and clinical scientists on-call for night and weekend emergencies.

Component Costs

Available upon request from the MGH Transfusion Service.

Transfusion Committee

The Medical Director of the MGH Transfusion Services chairs the Transfusion Committee. The Transfusion Committee meets at least four times a year to review transfusion related performance indicators, blood product deviations, transfusion related fatalities, transfusion transmitted disease, transfusion reactions, and any other transfusion related issues.

Results and recommendations are reported to, but not limited to:

- **MGH**: Lab Liaison Committee, Laboratory/Pathology Committee, and Medical Executive Committee.