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Special Transfusion Requirements For Patients Greater Than Four Months Old - Blood Bank

Document Type: Policy

I. PURPOSE AND OBJECTIVE:

The purpose of this document is to provide requirements relating to patients' special transfusion requirements.

II. SCOPE:

A. This document applies to special transfusion requirements for patients greater than 4 months old. Some examples of special transfusion requirements include the following:
   1. Irradiation
   2. CMV-seronegative components (CMV)
   3. Washed components
   4. Aliquots
   5. Blood warmers
   6. Human Leukocyte Antigen (HLA) matched or crossmatched platelets; refer to Transfusion Medicine policy, *Selection of Platelets, Plasma, and Cryoprecipitate for Patients Greater Than Four Months Old,* Section V.O Patients with Special Platelet Considerations.
   7. Hemoglobin S negative RBCs*;* refer to Transfusion Medicine policy, *Policies Specific to Patients with Sickle Cell Disease or Thalassemia.*
   8. Jehovah's Witnesses

B. This document does not apply to neonates (less than 4 months old); refer to Transfusion Medicine policy, *Selection of Blood Components for Neonatal Transfusion.*

C. For policies relating to ABO and Rh considerations of red blood cells (RBCs), refer to Transfusion Medicine policy, *RBC Crossmatching Guidelines.*

D. For patients requiring granulocyte transfusions refer to Transfusion Medicine policy, *Granulocytes by Apheresis*.

III. DEFINITIONS / ABBREVIATIONS:

A. **Neonates**: Patients from birth to four months old.

B. **Special transfusion requirements**: A patient's need for a component that has been modified or that contains special attributes; i.e., neonates have the special transfusion requirements found in a standard neonatal RBC unit.

C. **Designee**: Any Blood Bank technical director, or transfusion medicine fellow.

D. **DB**: Dearborn Blood Bank

E. **FH**: Farmington Hills Blood Bank

F. **GP**: Grosse Pointe Blood Bank

G. **RO**: Royal Oak Blood Bank

H. **TR**: Troy Blood Bank

I. **TTW**: Taylor, Trenton and Wayne Blood Banks

IV. POLICIES:

A. Unclear Test Orders

1. Unclear test orders must be clarified with the patients' caregivers.

B. Review of Special Transfusion Requirements

1. The Blood Bank may become aware of special transfusion requirements via computer generated reports, verbal orders from medical personnel, F-1564 *Blood Product Dispense Form,* previous special messages in the Blood Bank computer, etc. When a technologist becomes aware of an order with special transfusion requirements, they should consider whether the special transfusion requirement is indicated, as described throughout this document. The technologist proceeds as follows:
    a. If a previous special message for irradiation is present in the Blood Bank computer, the technologist provides components that meet the special transfusion requirement, or
    b. The technologist should consult the Medical Director or designee (MD) to review the special requirement if they have any question about whether any special transfusion requirements are indicated (including the appropriateness to bill for irradiation).
        i. RO, TR, FH: The technologist should document and submit the *Medical Review of Special Transfusion Requirements* form (Attachment 1) or
        ii. DB,GP, TTW: The technologist should contact the Medical Director in person, by phone, or email with patient name and MRN to request a review.
        iii. The MD will review the patient's chart and determine whether the special transfusion requirement is indicated. MD will notify the requesting technologist and will document this review either on the *Medical Review of Special Transfusion Requirements* form, directly on the order shingle or via email to the department supervisor.
        iv. If a decision from the Medical Director is not immediately received for any reason, the technologist shall provide products to meet the special requirement until a decision from the medical director is obtained.

v. If a decision is made that the special transfusion requirements are indicated; the technologist will update the patient's special messages field to reflect the decision. A comment will also be added to the patient's computer record indicating the review of the requirement. For example, the **IRR** special message "Issue Irradiated Products", **CMVN** "Issue CMV Negative Units", and additional comment codes (i.e. **BIRR**, "Bill Patient for irradiation", **NBIRR** "No Bill for Irradiation") or a **CMTXT** comment text will be added to the computer record with any additional notes requested by the reviewing physician.

vi. If a decision is made that the special transfusion requirements are not indicated, the technologist will update the patient's special messages field to reflect the decision. A comment will also be added to the patient's computer record indicating the review of the requirement. For example, **NOIRR**, "No Irradiation Required per MD".

vii. The documentation of the review will be stored in the designated *Special Transfusion Requirement Review* File or Binder at each site.

viii. Under most circumstances it is not necessary to request a review for every product order but the technologist should request another review by the Medical Director if there is any evidence of a new diagnosis, or pending diagnosis (mass, abnormal labs) which requires irradiation regardless of previous review messages i.e **NOIRR** or **NBIRR** in the computer.

C. Leukocyte Reduction

1. Generally, all allogeneic red blood cells (RBCs) and platelets that are received into inventory are leukocyte reduced by the blood supplier. All allogeneic RBCs and platelets dispensed from the Blood Bank should be leukocyte reduced.
2. Occasionally, a rare or directed donor RBC that is not leukocyte reduced by the blood supplier will be received. These units may need to be dispensed with a leukocyte reduction filter. The Medical Director should be consulted for any RBC received that is not leukocyte reduced.
3. If an autologous RBC that is not leukocyte reduced by the blood supplier is received, it is not necessary to dispense it with a leukocyte reduction filter.

D. Irradiation

1. Indications for irradiation
    a. Selected immunocompromised patients; including congenital immunodeficiencies, DiGeorge syndrome, Wiscott Aldrich syndrome, and severe combined immunodeficiency (SCID).
    b. Bone marrow transplant recipients
    c. Hematologic malignancies including myelodysplastic syndrome
    d. All platelet products including HLA and crossmatched platelets are irradiated with the exception of Pathogen Reduced (i.e. Psoralen treated) Platelets since the treatment lowers the risk of Transfusion Associated Graft versus Host Disease (TA-GVHD).
    e. RBCs and platelets from directed donors
    f. Granulocytes
    g. Aplastic anemia or unexplained cytopenias, particularly if treated with antilymphocyte or antithymocyte globulin

h. Fludarabine therapy

i. Non-hematologic cancer patients treated with multi agent chemotherapy or combined chemo/radiotherapy within past year

j. Patients on the oncology floor, Oncology Infusion Center, or the Short Stay Unit; refer to *Responsibility to order Irradiated Components*, below.

k. Non-hematologic cancer without multi-agent chemotherapy or combined chemo/radiotherapy. Note that this is not a CMS approved indication for irradiation. However, the Blood Bank may supply irradiated components for these patients but will not bill as per review instructions provided by the Medical Director or Designee. The special instructions **IRR**, “Issue Irradiated Products” and **NBIRR**, “Do not Bill for Irradiation” should be added if applicable.

2. Not Indications for Irradiation

   a. Patients with AIDS (Acquired Immune Deficiency Syndrome) due to HIV infection.

   b. Solid organ transplant patients.

3. Responsibility to order Irradiated Components
   It is the responsibility of the patient’s physician to order irradiated components when they are indicated. However, the Blood Bank will attempt to provide irradiated components for the following patients:

   1. Patients with a previous special message in the Blood Bank computer for irradiated components.

   2. Patients in designated specialty units, such as Oncology floors, Oncology Infusion centers or in the Short Stay Units who do not have a special message for irradiated components shall have the special requirements confirmed with either Medical Director Review or ordering physician before issuing products. The appropriate special message **IRR** (Issue Irradiated products) or **NOIRR** (No Irradiation per MD) should be added to the patient record.

4. If necessary irradiated blood products should be issued pending the review by the Medical Director for any patient where irradiation requirements are in question.

   1. Add the special message **IRRPD** "Irradiation Pending Review" and **IRR** "Issue Irradiated Products" to the patient profile in the Blood Bank computer.

E. CMV Negative Special Transfusion Requirements

1. In the past, it was standard to provide CMV-negative RBCs and platelets for potential stem cell transplant recipients with CMV-seronegative status (IgG and IgM). CMV-negative RBCs and platelets are no longer provided for potential stem cell transplant recipients. However, CMV-negative products are still provided for neonates as described in Transfusion Medicine policy, *Policies for the Selection of Blood Components for Neonates*. Requests for CMV-negative blood products are therefore managed as follows:

   a. If the patient has a historic special message for CMV negative products and the current order **does not** request CMV negative products, then it is not necessary to provide CMV-negative products. The following steps are performed (in the order they appear).

      i. A comment will be added to the CMV-negative special message indicating, for example, that “CMV negative products are not required due to a change in protocol.”

      ii. The CMV-negative special message will be inactivated.

   b. If a current patient order **does** request CMV negative products, then a request to review should be submitted to the MD regardless of whether or not the patient has a historic special message for CMV

negative products.

c. If a CMV-negative special message was previously added as part of the neonatal protocol and the patient is now greater than four 4 months old, then a review should be requested from the Medical Director.

F. Washed Components

1. The Medical Director should be consulted for any order for washed products.
2. Indications for washed RBCs and platelets
   a. Multiple, progressive allergic reactions
   b. Hyperkalemic patients not undergoing dialysis
   c. Neonates or fetal intra-uterine recipients, most often in cases of neonatal alloimmune thrombocytopenia (NAIT). The transfusion of unwashed platelet components procured from the mother to these recipients is strongly discouraged. For additional information refer to Transfusion Medicine policy, *Washing Platelet Components - Royal Oak.*
   d. IgA-deficient patients with anti-IgA antibodies
      i. In addition to washed components, request for IgA deficient components may also be received. These components are special orders from the blood supplier.
      ii. The Medical Director should be consulted if an order for washed or IgA deficient components are requested.
         A. When washed RBCs or platelets are requested, the order is coordinated with Royal Oak, where they will be washed.
         B. These patients may require "extra" washed RBCs in which case the cell washer should be set for an extra wash as described in Transfusion Medicine policy; *Washing Red Blood Cells - Royal Oak.*

G. Component Aliquots

1. Indications for which aliquots may be requested
   a. Pediatric patients
      Note: Components for neonates are routinely provided in aliquots as described in Transfusion Medicine policy, *Selection of Blood Components for Neonates*.
   b. Patients who have experienced transfusion associated circulatory overload (TACO)
   c. Patients with severe anemia
   d. Patients with congestive heart failure
   e. Patients with warm autoantibodies (WAAs) *or* HTLA / Bg^a antibodies when incompatible units that are not phenotypically matched must be transfused. Refer to the following Transfusion Medicine policy, *Warm Autoantibody Investigations /* the policy *Determining whether to Aliquot Incompatible Donor RBC Units for Patients with WAAs* and *HTLA / Bg^a Investigations.*
   f. Patients with passive CD-38 antibodies.

H. The Use of Blood Warmers

1. Blood warmers are rarely indicated for routine transfusion services, and if used improperly they may cause damage or hemolysis to the RBCs. However, blood warmers may be useful for the rapid infusion of components during a trauma or surgery, for neonatal transfusion, or for patients with cold agglutinin syndrome.
2. It is the responsibility of the patient's physician to initiate the use of a blood warmer.
3. Blood warmers are not supplied by the Blood Bank. If a caregiver calls the Blood Bank with questions about obtaining a blood warmer, they should be instructed to call Anesthesia, Specialty Units (ED,OR,ICU) or Biomedical Departments.

I. HLA Matched or Crossmatched Platelets

1. HLA matched or crossmatched platelets may be ordered for patients who appear to be refractory to platelet transfusions.
2. The Medical Director should be consulted to determine whether HLA or crossmatched platelets are indicated.
3. Once the MD makes this determination, applicable special messages should be added. For example: "Use HLA Matched Platelets", "Use Crossmatched Platelets" or **NOXMH**, "XM/HLA Platelets Not Required".
4. If HLA matched platelets are unavailable for a patient who requires HLA matched platelets, it is the responsibility of the patient's physician to determine whether to transfuse non-HLA matched platelets or to wait for HLA matched platelets.

   Refer to Transfusion Medicine policy, Selection of Platelets, Plasma, and Cryoprecipitate for Patients Greater Than Four Months Old

J. Jehovah's Witnesses

1. Patients who are Jehovah's Witnesses may have certain wishes relating to transfusion. Some patients may not wish to receive any blood transfusions whatsoever, some may wish to receive only certain products or derivatives, some may wish to receive blood products only if necessary to save life, etc. If the Blood Bank becomes aware that a patient is a Jehovah's Witness, the following policies apply:
   a. The special message **JHVW**T (Jehovah's Witness) should be added to the patient's Blood Bank computer record.
   b. Each time that F-1564 *Blood Product Dispense Form* is received for a patient with the Jehovah's Witness special message, then the technologist should notify the patient's caregiver, for example, that "Blood Bank historic records indicate patient is a Jehovah's Witness." This notification should be documented in the computer at the time of issue; the canned message **JHVWT** may be used for this purpose.
   c. If multiple dispense forms are received for the patient in a very short time period (e.g., emergency, massive transfusion) and it is not feasible to notify the caregiver each time a component is issued, then this notification may be documented for only the first product issued in the emergency.

V. REFERENCES:

1. AABB, *Technical Manual*, current edition.
2. AABB, *Transfusion Services Checklist*, current edition.

Attachments

Special Transfusion Requirements Review Form.pdf

Approval Signatures

Step Description	Approver	Date
	Ryan Johnson: OUWB Clinical Faculty	2/8/2022
	Jeremy Powers: Chief, Pathology	2/3/2022
	Ann Marie Blenc: System Med Dir, Hematopath	2/1/2022
	Vaishali Pansare: Chief, Pathology	2/1/2022
	Muhammad Arshad: Chief, Pathology	2/1/2022
	John Pui: Chief, Pathology	2/1/2022
Policy and Forms Steering Committe (if needed)	Gail Juleff: Project Mgr Policy	2/1/2022
Policy and Forms Steering Committe (if needed)	Kelly Sartor: Supv, Laboratory	2/1/2022
	Craig Fletcher: System Med Dir, Blood Bank	2/1/2022
	Anji Miri: Supv, Laboratory	1/17/2022
	Brooke Klapatch: Medical Technologist	1/17/2022
	Karrie Torgerson: Supv, Laboratory	1/14/2022
	Rebecca Thompson: Medical Technologist Lead	1/14/2022
	Teresa Lovins: Supv, Laboratory	1/14/2022
	Michael Rasmussen: Supv, Laboratory	1/14/2022
	Kelly Sartor: Supv, Laboratory	1/13/2022
	Kelly Sartor: Supv, Laboratory	1/13/2022

Applicability

Dearborn, Farmington Hills, Grosse Pointe, Royal Oak, Taylor, Trenton, Troy, Wayne