**Purpose**: To describe the ABO/Rh selection of platelets, plasma and cryoprecipitate at Harborview Medical Center (HMC) including alternative selections when ABO/Rh identical products are unable to be transfused due to inventory management issues.

**Policy:**

* HMC Transfusion Services maintains 100% leukoreduced inventory. *Exception: Liquid AB and Liquid low titer group A plasma.*

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| --- | --- | --- |
| **Step** | **Statements** | **Related Documents** |
| **General Policies** |  |
| 1 | Plasma Components are:* + Platelets
	+ Plasma
	+ Cryoprecipitate
 |  |
| 2 | When inventory allows, ABO/Rh typed patients shall receive ABO identical plasma components. * Issue Universal Donor Blood Components when:
	+ No ABO/Rh type from their current HMC encounter
	+ Historical ABO/Rh
* Issue ABO compatible plasma components when:
	+ One ABO/Rh testing has been performed in the current HMC encounter.

Rh type:* In patients ≥4 months of age, Rh type is not a consideration in selection of plasma components.
* In neonates <4 months of age
* Rh is not a consideration with cryo or previously frozen plasma
* Give Rh compatible or Rh negative platelets
* **Liquid plasma** can only be given to neonates <4 months of age with prior Medical Director/LMR approval
 | QP: Pre-Analytic Sample RequirementsTrauma Response ProcessMassive Transfusion Protocol |
| **Platelets** |  |
| 1 | Whenever ABO identical platelets are not available, alternative selections will be made in the order stated on the Alternative ABO Selections for Platelets Table (Table 1) | Table 1: Alternative ABO Selection of Platelets |
| 2 | Universal Donor platelets are defined as:* Group B, A or AB platelets if ≥ 4 months of age
* Group AB/Rh negative platelets if < 4 months of age
* Low Titer group O platelets

If these ABO types are not available, please notify Transfusion Services (TS) Medical Director or Resident/Covering Physician for direction and approval of another ABO type. |  |
| **Platelets** (continued) |  |
| 3 | Group A, B and AB neonates < 4 months of age shall receive ABO identical or group AB platelets. If these are not available, Transfusion Services Medical Director or Resident/Covering Physician approval is required to release other ABO groups* Group O Neonates < 4 months of age may receive platelets of any ABO type
 |  |
| 4 | **Pre-storage Pooled Platelets (PSPP)*** + TSL does not routinely stock Prepooled Platelets
	+ Prepooled Platelets are ordered and issued with Medical Director or Resident/Covering Physician approval only.
	+ Prepooled platelets are approved to be received if the blood supplier has no apheresis platelets available. Leave copy of inventory order for Medical Director review
 | Ordering Blood Products for Inventory |
| 5 | **Specially selected platelets** * HLA-matched, crossmatch compatible, HLA or HPA antigen negative will be provided based on Medical Director or Resident/Covering Physician approval for patients who have been demonstrated to be refractory.
* Random whole blood platelets will be provided based on Medical Director approval
 |  |
| 6 | Platelet inventory should be 100% Leukoreduced**Leukoreduced Platelets** will be routinely provided for:* Neonates < 4 months age
* Pregnant females
* HIV positive patients
* Chronically transfused patients
* e.g. sickle cell disease, thalassemia
* Patient’s with hematologic malignancies
* e.g. leukemia, lymphoma, Hodgkin’s disease
* Hematopoietic progenitor cell (HPC)/”bone marrow” transplant candidates & recipients
* Solid organ transplant candidates & recipients
* e.g. kidney, liver, heart, lung transplants
* Patients with bone marrow failure
	+ e.g. severe aplastic anemia
* Patient’s with congenital immunodeficiencies
* Patients on cardiac bypass (until 24 hours post op)
* Patients on intra-aortic balloon pumps, LVAD, artificial hearts, awaiting cardiac transplant.
* Intrauterine transfusion
* Seattle Cancer Care Alliance (SCCA)
 |  |
| 7 | **Irradiated Platelets** will be routinely provided for:* + Neonates < 4 months age
* Patient’s with hematologic malignancies
* e.g. leukemia, lymphoma, Hodgkin’s disease
	+ Patients receiving fludarabine or other high dose chemotherapy
* Hematopoietic progenitor cell (HPC)/”bone marrow”/”stem cell” transplant candidates & recipients
* Patient’s with cellular immunodeficiencies
* e.g. SCID, Di George syndrome
* Recipients of HLA matched platelets & blood products
* Directed donor RBCs and Platelets
* e.g. parent, sibling, child, family friend donated unit
* Seattle Cancer Care Alliance (SCCA) patients

In the event, leukoreduced and/or irradiated blood products are not available, consult Medical Director for approval  |  |

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| **Plasma** |  |
| **General Statements** |  |
| 1 | Neonates < 4 months/age shall ONLY receive * + 1st: ABO identical
	+ 2nd: Group AB plasma
	+ 3rd: Low Titer Plasma (minimize use)-During emergency when AB plasma is not available or there will be a delay

If this is not available, Transfusion Services Medical Director or Covering Attending physician approval is required to release other ABO groups |  |
| 2 | Trauma and Massive Transfusion Protocol Response includes:* + Group AB
	+ Low Titer Plasma
	+ Liquid AB or LTP plasma
 |  |
| 3 | For other patients, whenever ABO identical or ABO compatible plasma is not available, alternative selections may be made in the order stated on the Alternative ABO Selections for Plasma Table (table 2) ONLY with Medical Director or Covering Attending Physician Approval |  |
| 4 | Group A, B and AB patients shall not receive group O plasma |  |
| **Liquid Plasma** |  |
| 5 | Liquid Plasma is a cellular product, capable of causing Transfusion Associated Graft versus Host Disease in the patient.* Do NOT select liquid plasma for patient requiring irradiation or leukoreduction. Select a thawed plasma component.
* *Note: Liquid plasma allocated for patients who require Irradiation or Leukoreduction will generate an error message. Do NOT override.*
 | Receiving and Processing Liquid Plasma |
| **Low Titer Plasma** |  |
| 6 | **Use of Low Titer Plasma (LTP)*** Limit transfusion of LTP to less than 10 units in adult patients, if possible. If more than 10 units given to adult of unknown or non-compatible blood group, notify Medical Director on next business day by printing out BBI summary.
* Infants and small children: use of LTP should be minimized to during emergency when AB plasma is not available or there will be a delay. Notify Medical Director as soon as possible.
* Subsequent transfusion of LTP to a non-group compatible patient should be performed after consultation with the TS Lead, Manager, and/or Medical Director.
* Any evidence of hemolysis is to be immediately investigated and reported to the Medical Director or Resident/Covering Physician.
 | Receiving and Processing Low Titer PlasmaTrauma Response ProcessManagement of the Emergency Department RefrigeratorAirlift Northwest |

|  |  |
| --- | --- |
| **Cryoprecipitate** |  |
| 1 | ABO/Rh type is not a consideration in selection of cryoprecipitate (cryo) in patients ≥ 4 months of age and any ABO/Rh type may be provided* + - * In patients < 4 months age, group AB or ABO identical cryo should be provided. If not available and emergency transfusion required before this can be delivered by the blood supplier, contact Medical Director for approval of a different ABO type. The Rh type is not a consideration.
 |  |

**Table 1: Alternative ABO Selections for Platelets:\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Recipient ABO** | **1st Choice** | **2nd Choice** | **3rd Choice** | **4th Choice** |
| **Unknown** | AB\* | A or LTP group O | B | Non LTP group O++ |
| **O** | O | B | AB | A |
| **A** | A | AB | B | O |
| **B** | B | AB | A | O |
| **AB** | AB | A | B | O |

\* Neonates < 4 months of age shall receive only Rh compatible, ABO identical or group AB platelets unless TS Physician approval obtained

++ Requires Medical Director approval

**Table 2:** **Alternative ABO/Rh Selections for Plasma:\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Recipient ABO** | **1st Choice** | **2nd Choice** | **3rd Choice** | **4th Choice** |
| **Unknown** | AB or Low Titer Plasma | Medical Director approval required to issue group A, B or O that is not Low Titer Plasma |
| O | O | A | B | AB |
| A\* | A | AB | B\* | - |
| B\* | B | AB | A\* | - |
| AB\* | AB | A\* | B\* | - |

\* Neonates < 4 months of age shall only receive ABO identical or group AB plasma unless TS Medical Director or Covering Attending Physician approval obtained.

\* Medical Director approval required to issue ABO incompatible plasma to patients > 4 months of age unless Low Titer Plasma is given in a trauma or massive transfusion setting.

**References:**

Standards for Blood Banks and Transfusion Services, Current Edition, Bethesda, MD: American Association of Blood Banks.

Technical Manual, 16th Edition, J Roback (ed). 2008. AABB Press, Bethesda, MD.