**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:**

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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
	+ Do not have a total of 2 serologic ABO/Rh type results from 2 separate collections over all HMC encounters
* Issue ABO compatible plasma components when:
	+ ABO/Rh testing has been performed in the current HMC encounter AND a second ABO/Rh has been tested on a separate collection
	+ Exception: first sample was collected in a controlled setting such as the Operating Room.
		- * *With the exception of neonates and infants < 4 months of age*, Rh type is not a consideration in the selection of plasma components, therefore patients ≥ 4 months of age may receive plasma components of any Rh type.
 | 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 platelets if < 4 months of age
* 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 and infants < 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 and Infants < 4 months of age may receive platelets of any ABO type
 |  |
| 4 | * **Prepooled Whole Blood Platelets**
	+ TSL does not stock Prepooled Platelets
	+ Prepooled Platelets are ordered and issued with Medical Director or Resident/Covering Physician approval only.
 |  |
| 5 | * **Specially selected platelets** such as 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.
 |  |
| 6 | * Platelet inventory should be 100% Leukoreduced. In the event that non-leukoreduced platelets are available,
* **Leukoreduced Platelets** will be routinely provided for:
* Neonates & Infants < 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
 |  |
| 7 | * **Irradiated Platelets** will be routinely provided for:
	+ Neonates & Infants < 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
 |  |

|  |  |
| --- | --- |
| **Plasma**  |  |
| **General Statements** |  |
| 1 | * Neonates/Infants < 4 months/age shall ONLY receive
	+ 1st: ABO identical
	+ 2nd: Group AB plasma
	+ 3rd: Low Titer Plasma (minimize use)
* 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
 |  |
| 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.*
 |  |
| **Low Titer Plasma** |  |
| **6** | **Use of Low Titer Plasma (LTP)*** Limit transfusion of LTP to less than 10 units in adult patients, if possible
* Infants and small children: use of LTP should be minimized. Notify Medical Director as soon as possible.
* Initial response from TSL should be no more than 6 units of LTP plasma.
* Subsequent transfusion of LTP to a non-group compatible patient (beyond 10 LTP in an adult 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 | B | O++ |
| **O** | O | B | AB | A |
| **A** | A | AB | B | O |
| **B** | B | AB | A | O |
| **AB** | AB | A | B | O |

 \* Neonates and infants < 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 and Infants < 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.