**PURPOSE:**

To provide guidance for selecting plasma and cryoprecipitate components for transfusion to adult, bone marrow transplant and neonatal/infant transfusions

**PRINCIPLE & CLINICAL SIGNIFICANCE:**

Prophylactic and therapeutic plasma transfusions are commonly indicated to replace missing coagulation factors on patients with an elevated INR before an interventional procedure or during bleeding, respectively. Plasma can be used alone or in combination with albumin as replacement fluid during therapeutic apheresis procedures.

Due to the presence of isoagglutinins, plasma components should be type specific or plasma compatible when possible.

Cryoprecipitate transfusions are usually indicated for patients with low fibrinogen levels as observed on patients with liver disease, disseminated intravascular coagulation, massive bleeding, and obstetric bleeding.

Plasma and cryoprecipitate transfusions can result in transfusion reactions, including allergic, febrile or hemolytic reactions.

**POLICIES:**

**Pre-transfusion test requirements** for issuing ABO specific plasma components:

* + 1 current admission ABO/Rh

**Plasma:**

* Fresh frozen plasma, plasma frozen within 24 hours and apheresis plasma are used interchangeably and relabeled as 5 day plasma at the time of thaw. Jumbo plasma is stocked for plasma therapeutic apheresis procedures and each unit is equivalent to 2 unit of plasma. Liquid Plasma will not be stocked at the UWMC TSL due to the presence of viable lymphocytes in this component and the need to irradiate prior to administration in patients at risk for GVHD.
* Thawed plasma should be selected before thawing additional components
* Thawed AB plasma set aside for emergencies should be rotated into general inventory to prevent expiration
* Jumbo plasma components come in volumes of 400-600 mL and considered the same as two standard dose plasma components
	+ Generally, jumbo plasma should be thawed only for plasma exchanges, but thawed plasma may be issued to any patient with an order of 2 or more plasma components for inventory management purposes (frozen components expiring within 1 month)
* **ABO** **identical plasma** is provided when inventory levels, testing and clinical status allow (see specific requirements for neonates/infants < 4 months of age)
* **Rh type** is not a consideration in the selection of plasma
* **Universal Donor Plasma** (Group AB plasma) is issued in the following circumstances:
	+ No ABO/Rh on file from current admission
	+ Massive Transfusion Protocol (ABO identical or compatible may be issued if available and does not cause delay)
	+ Patient is a neonates/Infant< 4 months old (approval from a UWMC BB MD is required to issue other ABO groups)
	+ Intrauterine Transfusions
* **Post Bone Marrow Transplant** (Post-BMT) require plasma compatible with both the patient and bone marrow donor
	+ Transplant date and recipient and donor ABO/Rh is found in the comment section of the patient’s Sunquest (SQ) LIS record.

**Cryoprecipitate:**

* + - * **Adult patients** (regardless of BMT status): ABO/Rh type is not a consideration in selection of cryoprecipitate and any ABO/Rh type may be provided
			* **Patients <4 months old**
	+ Group AB or ABO identical cryoprecipitate should be provided
	+ Rh type is not a consideration

**INSTRUCTIONS:**

[**Patient LIS Record Review**](#LISReview)

[**Plasma - Neonates/Infants <4 Months of Age**](#NeonatePlasma) **& IUT**

[**Plasma - Adult Patients: Excludes Post-BMT**](#AdultPlasma)

[**Plasma - Post-BMT Patients**](#PostBMTPlasma)

[**Cryoprecipitate for All Patients**](#Cryoprecipitate)

**Patient LIS Record Review**

| **STEP** | **ACTION** |
| --- | --- |
| **1** | Review the patients LIS (Laboratory Information System) record prior to selecting and/or issuing any plasma component to determine:* Required testing is complete
	+ 1 current admission ABO/Rh
* Any restrictions or special requirements
	+ BMT
	+ Age: Neonate/Infant < 4 months old
	+ Some patients may receive plasma components only after UWMC Blood Bank (BB) MD approval due to their clinical status (ie. IgA deficiency, severe transfusion reaction).
* Discrepancies between order and patient historical requirements

**NOTE:** If clinical status or current available inventory prohibits the ability to honor all patient requirements, consult with a UWMC BB MD for instructions on selecting components.  |
| **2** |

|  |  |
| --- | --- |
| **If there are**  | **Then** |
| No discrepancies or other issues  | Go to next step  |
| Discrepancies between patient and order requirements | * Resolve before selecting plasma or cryoprecipitate
* Consult with a UWMC BB MD or manager for resolution, if needed
 |

**NOTE:** If clinical status or current available inventory prohibits the ability to honor all patient requirements, consult with a UWMC BB MD for instructions on selecting components.  |
| **3** | Go to the appropriate section:* **Plasma - Neonates/Infants <4 Months of Age & IUT**
* **Plasma - Adult Patients: Excludes Post-BMT**
* **Plasma - Post-BMT Patients**
* **Cryoprecipitate for All Patients**
 |

**Plasma: Neonates/Infants <4 Months of Age & IUT**

| **STEP** | **ACTION** |
| --- | --- |
| 1 | Select group AB plasma, Rh type is not a consideration |

**Plasma: Adult Patients: Excludes Post-BMT**

| **STEP** | **ACTION** |
| --- | --- |
| 1 | * Select ABO compatible plasma components based on the compatibility table below
* Rh type is NOT a consideration when selecting plasma for the adult patient

|  |
| --- |
| **Plasma Compatibility for Adult Patient (excludes Post-BMT)** |
| **Recipient Type** | **Plasma ABO** |
| **O** | **A** | **B** | **AB** |
| **O** | **✓** | **✓** | **✓** | **✓** |
| **A** |  | **✓** |  | **✓** |
| **B** |  |  | **✓** | **✓** |
| **AB** |  |  |  | **✓** |
| **NTD or** **unknown ABO** |  |  |  | **✓** |

 |

**Plasma: Post-BMT Patients**

| **STEP** | **ACTION** |
| --- | --- |
| 1 | * Select plasma components ABO compatible with both the recipient and bone marrow donor based on the compatibility table below
* Rh type is NOT a consideration when selecting plasma for the adult patient

| **Plasma Compatibility for Post-BMT Recipient** |
| --- |
| **Recipient ABO** | **BMT Donor ABO** | **Plasma ABO** |
| **O** | **O** | **O, A, B, AB** |
| **A** | **A, AB** |
| **B** | **B, AB** |
| **AB** | **AB** |
| **A** | **O** | **A, AB** |
| **A** | **A,AB** |
| **B** | **AB** |
| **AB** | **AB** |
| **Plasma Compatibility for Post-BMT Recipient** |
| **Recipient ABO** | **BMT Donor ABO** | **Plasma ABO** |
| **B** | **O** | **B,AB** |
| **A** | **AB** |
| **B** | **B,AB** |
| **AB** | **AB** |
| **AB** | **O** | **AB** |
| **A** | **AB** |
| **B** | **AB** |
| **AB** | **AB** |

 |

**Cryoprecipitate: All Patients**

| **STEP** | **ACTION** |
| --- | --- |
| 1 |

|  |  |
| --- | --- |
| **If the patient is**  | **Then** |
| Adult  | * ABO/Rh type is not a consideration in selection of cryoprecipitate and any ABO/Rh type may be provided
 |
| Neonate/Infant < 4 monhs of age | * Group AB or ABO identical cryoprecipitate should be provided
* Rh type is not a consideration
 |

 |

**CALCULATIONS/INTERPRETATIONS/RESULTS REPORTING/NORMAL**

**VALUES/CRITICAL VALUES**

**Interpretation**

None

**Results Reporting in Sunquest**

None

**CALIBRATION:**

None

**PROCEDURE NOTES AND LIMITATIONS:**

* “BMT” listed in the patient’s SQ “comment” field designates the patient is a bone marrow transplant candidate. The date of transplant and donor type will be listed for SCCA patients when UWMC BB is provided this information from the SCCA TSO office. The recipient should be considered post-BMT on the day of transplant. Non-SCCA BMT recipient transplant date and donor ABO/Rh may be added if known.
* Any deviation from this procedure should be approved by the UWMC BB Medical Director and documented the deviation on a QI form (include the name of the MD who approved the deviation)

**REFERENCES:**

* Technical Manual. Bethesda, MD: AABB Press, current edition
* Standards for Blood Banks and Transfusion Services. Bethesda, MD: AABB Press, current edition

**RELATED DOCUMENTS:**

SOP *Blood Component Processing*

|  |
| --- |
| **UWMC SOP Approval:** |
|  |  |  |  |
| **UWMC CLIA Medical Director** |  |  |  |
|  | Mark H. Wener, MD | Date |  |
|  |  |  |  |
| **Transfusion Service Manager** |  | Date  |  |
|  | Nina Sen |  |  |
|  |  |  |  |
| **Compliance Analyst** |  | Date  |  |
|  | Christine Clark |  |  |
| **Transfusion Service** **Medical Director** |  | Date |  |
|  | Monica B. Pagano, MD |  |  |
|  |  |  |  |
| **UWMC Biennial Review:** |  |  |
|  |  |  |  |
|  |  | Date |  |
|  |  |  |  |
|  |  | Date |  |
|  |  |  |  |