# Applicable Laboratory(s)):

[x]  North Carolina Baptist Hospital (NCBH)

[ ]  Lexington Medical Center (LMC)

[ ]  Davie Medical Center (DMC)

[ ]  Wilkes Medical Center (WMC)

[ ]  High Point Medical Center (HPMC)

[ ]  Westchester

[ ]  Clemmons

# Procedure Statement

Plasma Components are utilized to replace coagulation factors in patients with demonstrated deficiencies, and as replacement fluid in therapeutic plasma exchange.

# Scope

i. Procedure Owner/Implementer: Julie H. Simmons/Christina Warren

ii. Procedure Prepared by: Julie Simmons

iii. Who Performs Procedure: Blood Bank Staff/management

# Definitions

1. Procedure: A process or method for accomplishing a specific task or objective.
2. WFBH Lab System: Wake Forest Baptist Lab System is a health system that includes Wake Forest Baptist Medical Center and all affiliated organizations including Wake Forest University Health Sciences (WFUHS), North Carolina Baptist Hospital (NCBH), Lexington Medical Center (LMC), Davie Medical Center (DMC), Wilkes Medical Center (WMC), High Point Medical Center (HPMC), Lab at Westchester and Lab at Clemmons.
3. F24: 24 Hour Plasma that is frozen 24 hours after phlebotomy. Contains stable

coagulation factors such as Factor IX and fibrinogen in concentrations similar to

FFP, but reduced amounts of Factors V and VIII.

1. FFP: Fresh Frozen Plasma contains plasma proteins including all coagulation factors.
2. FFP, divided: FFP that has been collected and divided into parts. Same description as FFP.
3. FFP, pheresis: FFP that is collected by apheresis from a donor
4. CPP: Cryoprecipitated Poor Plasma contains plasma that is deficient in Factor VIII,

von Willebrand factor, fibrinogen, cryoglobulin and fibronectin. Proteins such as

albumin, Factors II, V, VII, IX, X and XI remain in the same concentrations as in FFP.

1. vWF: von Willebrand Factor
2. WFBMC-BB: Wake Forest Baptist Medical Center Blood Bank
3. Adult:>15 years of age
4. Pediatric: < 15 years of age
5. Chuck: Blue absorbent pad

# Sections

1. Protocol
2. Thawing Plasma (WaterBath)
3. Pooling Plasma
4. Computer Function
5. Labeling

# Policy Guidelines

1. F24 plasma is considered comparable to FFP and is routinely ordered from blood suppliers.
2. CPP is not routinely ordered from the blood supplier and should only be ordered if there is shortage of 24-hour plasma or FFP
3. CPP should not be used as a substitute for F24 or FFP in patients with congenital deficiencies of fibrinogen, Factor VIII or vWF.
4. CPP is approved by the Medical Director for use in TTP patients when the blood supplier cannot meet the quantity ordered.
5. FFP can be ordered from blood supplier as a special request. FFP is not routinely ordered or stored at WFBMC-BB.
	1. AB FFP is on a standing order with One Blood. 15 units arrive monthly.
6. The Patient must have an ABO/Rh type performed within the past year at WFBMC BB
7. Frozen plasma is stored at -18C or colder for up to 1 year after date of collection.
8. Thawed plasma is stored at 1-6C and is routinely given a 5-day expiration after thawing and is relabeled as “thawed plasma”.
9. Thawed plasma cannot be refrozen.
10. FFP and F24 may be given a 24-hour expiration date after thawing and labeled.
	1. When thawing in SCC the expiration date defaults to 5 days.
11. Pooled plasma is given a 24-hour expiration date after pooling or the earliest expiration date if plasma used has less than 24 hours expiration.

1. The expiration shall not exceed the storage time limit specified in the package insert of the satellite container. If no package insert is available, the component shall have an expiration time of 4 hours after transfer from original container.

1. Pooled plasma that contains both Rh positive and Rh negative plasma should be labeled as Mixed Rh which is the SCC default.
2. Pooled plasma should contain only one ABO type. Do not pool if multiple ABO types.

1. Pooled plasma can only contain plasmas with the same Ecode. You can’t mix Ecodes in a pool.
2. Pooled plasma can be issued to any patient if not used. Confirm the number of units in the pool are equivalent to the number ordered.
3. Thawed plasma that has been issued and not transfused must be returned within 20 minutes if not issued in a validated blood cooler. The temperature of the product should be taken if there is a question of product temperature. The temperature must be 1-10C or the product will be destroyed.
4. Some consideration and judgment is made if plasma thawed within 4 hours.
5. Thawed plasma should routinely be issued in a validated 10 hour blood cooler.
	1. If plasma thawed and not yet 1-6C; do not store with blood units, use another prepared cooler at 1-6C.
6. ABO type of the product is considered when selecting plasma. Rh type does not apply
7. Group A plasma is routinely used in adult (≥16 years of age) trauma situations when ABO is not yet determined and may be used with medical director approval in Group AB patients.
8. Pediatric patients weighing ≥ 50 kg. may arrive in the adult ED and can receive Group A plasma
9. Group AB plasma will be used routinely for pediatric (<15 years of age) trauma patients.
10. WFBMC BB does not recover thawed plasma and return to the blood supplier or sell it.
11. For liquid plasma, go to *Liquid Plasma Protocols and Procedures: BB.COMP.1042*
12. Selecting ABO for Plasma Transfusions.

|  |  |
| --- | --- |
| Recipient ABO | Donor ABO |
|  | First Choice | Second Choice |
| A | A | AB |
| B | B | AB |
| AB | AB | \*A (Medical Director approval needed) |
| O | O | A, B, or AB |
| NEO | Group AGroup BGroup OGroup AB | ABABABAB | ABA, O, BNone |
| ABO UNKNOWN (Trauma – Adult) | A\* | AB |
| ABO UNKNOWN (Trauma – Pediatric) | AB |  |
| NO GROUP Pediatric (Discrepancy between Forward and Reverse) | AB  |  |
| NO GROUP Adult (Discrepancy between Forward and Reverse) | \*A | AB |
| Refer also to: Selection of Blood and Blood Components  |

*\*GROUP A PLASMA is being used in Adult Trauma situations when group is unknown and*

*may be used for Group AB adult patients when there is a shortage of AB plasma.*

1. When plasma is requested by another facility.
2. Confirm the time needed.
3. Start the thawing process when shipping at 1-6C to facilitate the time needed

# Procedure

**Thawing Plasma by Water baths**

Chemical Risk Assessment: Low

Biological Risk Assessment: Low

Protective Equipment: Lab coat, gloves

Reagents: **NA**

Supplies: Plastic overwrap bag/chuck

Equipment: 30-37C Plasma Water Bath

Specimen Requirements: NA

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Check Plasma Water bath for temperature.*** 1. Acceptable temperature: 30-37C
 |
| **2.0**  | **Determine Group of plasma needed.** |
| **3.0** | **Remove plasma from freezer.** |
| **4.0** | **Inspect bag for cracks or breaks or evidence of thawing/refreezing.** |
| **5.0** | **Place plasma in a plastic overwrap bag to protect ports from water.** |
| **6.0** | **Place overwrapped plasma in plasma bath.** |
| **7.0**  | **Set timer for 35 ±5 minutes.** |
| **8.0** | **Remove plasma from water bath at end of 35 ± 5 minutes.** |
| **9.0** | **Check plasma to ensure thawed sufficiently.** |
| **10.0** | **Inspect units for leakage and appearance.** ***Refer to Protocol: Visual Inspection of Blood and Blood Products, Visual***  ***Inspection of Blood and Blood Products Photo Table*** |
| **11.0** | **Place any unacceptable units on QC shelf in refrigerator for crediting the next business day.**11.1 Discard contents of leaking units in component prep (CP) sink and place empty bag in a plastic bag before placing on QC shelf. |
| **12.0** | **Proceed to documentation in computer.**12.1 Refer to Section III: Computer Function- Thaw, Pool |
| **13.0** | **Perform label verify (check).**13.1 Label check needs to include all single plasma bags. |
| **14.0** | **Proceed to Section IV if pooling multiple units together.** |

**III. Computer Function**

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **Thaw** | **Go to SCC>Inventory>Edit>cr\_Product>Change.**1.0 Scan or type E code of frozen plasma in ‘orig’ box.2.0 Select correct thawed product from drop down and F12 to accept.3.0 Scan each unit number and E code.4.0 F12 to accept. 5.0 Proceed to *Section V, Labeling: Thawed single plasmas*.NOTE: If plasma is to be pooled, it MUST be thawed in the computer first. |
| **Pool** | **Pooling:** 1.0 Go to SCC>Inventory>Edit>cr\_Product>Pool.2.0 Select product to be pooled. Plasma is the default.2.1 F12 to accept.2.2 Multiple ABO groups should NOT be pooled into a single bag.2.3 Mixed Rh types are acceptable to be pooled into a single bag.3.0 Scan unit number (and product code if prompted) for each plasma in the pool.3.1 The **same Ecodes must be used within a pool**. You cannot mix Ecodes in a pool4.0 F12 and accept. 5.0 The new Product code **MUST** be changed.5.1 Delete the current Product code (TPSM code)5.2 Select the pooled code (TPPS code) from the drop down list WorF10E5.3 If you forget to change the new product code, *Refer to Attachment 1:*  *How to correct a pool in SCC when you forget to change the final product code.*6.0 Physically pool the units refer to *Section IV: Pooling Multiple Units*7.0 Select the pooled unit to the patient.8.0 Add the POOL instruction to the unit for billing purposes.Refer to *Attachment 2: How to order Instructions in SCC*Refer to *Attachment 3: SCC-Component Prep Quick Reference Guide (also posted in CP area)* |

**IV. Pooling Multiple Units**

Chemical Risk Assessment: Low

Biological Risk Assessment: Low

Protective Equipment: Lab coat, gloves

Reagents:NA

Supplies: Chuck, 1000mL or 2000mL transfer bag, Plastic bag

Equipment: Heat sealer

Specimen Requirements: NA

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Lay plasma units by pool lot with bag.*** 1. Apply ISBT generated label to empty pool bag.
	2. Repeat for each pool bag to be created.
 |
| **2.0** | **Select transfer bag to use.**

|  |  |
| --- | --- |
| **# Plasma Pooled** | **Transfer Bag Size** |
| 2-5 with a combined volume <1000mL | 1000mL |
| 4 or more>1000mL<2000mL | 2000mL |

 |
| **3.0** | **Use one transfer bag and one (1) chuck for each set to be pooled.*** 1. Place chuck on counter with plastic side down.
	2. If more than 2000mls of plasma ordered, divide equally between pools.
 |
| **4.0** | **Open port on the first unit of plasma.**4.1 Pool a single ABO group.4.2 If both Rh positive and Rh negative units are pooled, then the label will print as mixed Rh.4.3 **The same Ecodes must be used within a pool**. You cannot mix Ecodes in a Pool. |
| **5.0** | **Determine if using (2) transfer tubing of the 2000mL bag or (1) transfer tubing of 1000mL bag.*** 1. Hemostat tubing to both transfer tubings on 2000mL or to the one transfer tubing on the 1000mL bag.

5.2 Remove tip protector from the tubing of the transfer bag.5.3 Insert the tip into the outlet port of the first plasma with a twisting  motion until firmly seated.5.4 Remove hemostat.a. Remove tip protector and open the port of second unit.b. Insert tip into outlet port.5.5 Repeat when two (2) transfer tubings on 2000mL bag is used. 5.6 Hang plasma to allow all product to flow into transfer bag.5.7 Hemostat tubing.5.8 Remove empty plasma bag and place on chuck to the side for use in  computer functions.5.9 Open port on the next unit of plasma and repeat steps 5.1-5.8.5.10 Continue until maximum units of plasma are pooled into the transfer bag. (i.e.do not exceed 2000 mls in a 2000 ml bag.) 1. Do not remove transfer set from last bag.
 |
| **6.0** | **Hemostat tubing and heat seal tubing in four (4) places.**  |
| **7.0** | **Proceed to label verify pooled product.** |
| **8.0** | **Select pooled product to patient and generate product unit tag.** |
| **9.0** | **Attach unit tag to pooled bag.** |
| **10.0** | **Cut tubing between seals so that there are two seals left to each bag.** 10.1 NOTE: This step may be done immediately after label verify in step 7 since  new product number is created.10.2 Verify that units in pool are correct. |
| **11.0** | **Store pooled product at 1-6C.**a. Expiration is 24 hours after pooling. NOTE: The expiration shall not exceed the storage time limit specified in the package insert of the satellite container. If no package insert is available, the component shall have an expiration time of 4 hours after transfer from original container. |
| **12.0** | **Gather chuck with empty plasma bags and place in a large plastic bag until transfusion (not issue) is complete in case there is an adverse reaction.**12.1 Label bag with next day to discard. 12.2 Place bag on QC shelf in refrigerator for discard the following day. |

**V. Labeling**

|  | **INSTRUCTIONS** |
| --- | --- |
| **SINGLE PLASMA** | **Label thawed single plasma with the new expiration date/time.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Expiration Date/Time** | **Storage** | **Label**  |
| F24 or FFP | 5 day | 1-6C | Thawed plasma label |

1.0Perform label verify (check). *Refer to CP: Label Verify (check).* |
| **POOLED THAWED PLASMA** | **Label pooled thawed plasma with ISBT label that prints.** 1. Check unit tag for Group/Type that prints.
2. Compare Group/Type on unit tag to units pooled.
3. Obtain the matching ABO/Rh label to the Group/Type on the unit tag and place on the ISBT label.
4. Perform label verify (check).

 *Refer to CP: Label Verify (check).***NOTE**: If there is no blood type on the label: SCC will not print Blood Types on label if blood types are mixed within a single pool. Do not mix ABOs within a pooled bag. |

# References

TECHNICAL MANUAL. Bethesda, MD: American Association of Blood Banks, updated periodically.

# Related procedures/policies

BB: Training: Plasma Training

# Attachments/Linked documents (title 21)

Attachment 1: How to correct a pool in SCC when you forget to change the final product code

Attachment 2: How to order Instructions in SCC

Attachment 3: SCC-Component Prep Quick Reference Guide

# Revision Dates: Review Change Summary as represented in Title 21.