TRAINING UPDATE

Lab Location:	SGAH and WAH	**Date Implemented:**	5.6.2013
Department:	Blood Bank	**Due Date:**	5.20.2013

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Plasma for Transfusion

Description of change(s):

1. We are changing to thawed plasma with a 5-day expiration date.
    a. The Blood Component Prep code is TH5 instead of TH.
    b. We need to label the thawed plasma a little differently than normal.
        i. Change expiration date and time the same as before.
        ii. Add a thawed plasma label **and** cross off the anticoagulant not included in the unit (leaving the correct anticoagulant showing).
        iii. Cross off the ARC license number (plasma is NOT licensed by the FDA).
        iv. At SGAH, add an FDA registration number sticker.
2. Added instructions for thawing ISBT-128 labeled plasma.
    a. Please note **the Blood Component Prep function for thawing ISBT-128 labeled units is different.**
    b. ISBT units are thawed by placing a T in front of the E product code. For example,
        i. A regular unit of PF24 is product code E2619.
        ii. You will use function TE2619 in BCP to thaw the unit.
        iii. The E code of the thawed unit will be different (E2737).
        iv. You will print a label using the HemaTrax system for the thawed plasma product.
    c. You will receive separate training on the HemaTrax system for printing labeled. However,

Non-Technical SOP

Title	**Plasma for Transfusion**	
Prepared by	Stephanie Codina	Date: 1/24/2011
Owner	Stephanie Codina	Date: 1/24/2011

Laboratory Approval		
Print Name and Title	**Signature**	**Date**
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

Review:		
Print Name	**Signature**	**Date**

Form revised 3/3/00

TABLE OF CONTENTS

1. PURPOSE

Plasma is the aqueous portion of the blood which includes albumin, coagulation factors, fibrinolytic proteins, immunoglobulin, and other proteins. An average unit contains 200-250 mL of plasma and will increase the clotting factor activities by 4-5% and fibrinogen by approximately 10 mg/dL. Plasma is stored frozen ($\leq$ -18°C) for up to 1 year. Once thawed, plasma is stored at 1-6°C for up to 5 days.

2. SCOPE

Plasma may be ordered for transfusion in the following situations:

- Active bleeding with coagulopathy (INR >1.5 or PTT >55s)
- Undergoing invasive procedure with coagulopathy (INR >1.5 or PTT >55s)
- Replacement of factor V due to factor V deficiency
- Thrombotic thrombocytopenic purpura (TTP)
- Therapeutic apheresis procedure
- Acute hemorrhage (>3 liters of volume replacement or bleeding >40 mL/Kg)
- Massive transfusion protocol
- Patients on warfarin who are bleeding or need to undergo an invasive procedure before vitamin K can reverse the warfarin effect
- Management of patients with rare specific plasma protein deficiencies, such as C-1-esterase, Antithrombin III, protein C, protein S, or heparin cofactor
- Replacement of coagulation factor deficiency when the specific coagulation concentrate is not available (factors II, IX, X, and XI).
- In the absence of any of these indications following consultation with the pathologist.

3. RESPONSIBILITY

All Blood Bank employees are required to demonstrate competency in the indications for and handling of plasma for transfusion.

4. DEFINITIONS

Plasma Frozen Within 24 Hours After Phlebotomy (PF24) - Plasma that is collected and frozen within 24 hours of collection. The levels of Factor V, Factor VIII, and other labile plasma proteins are decreased compared with FFP.

Fresh Frozen Plasma (FFP) - Plasma that is collected and frozen within 8 hours of collection. FFP contains plasma proteins including all coagulation factors and high levels of labile coagulation Factors V and VIII.

Thawed Plasma -Derived from either FFP or PF24 that is given a 5-day expiration date after thaw. Thawed plasma contains stable coagulation factors, but has decreased levels of other factors. SGAH and WAH convert both FFP and PF24 to thawed plasma.

Plasma Cryoprecipitate Reduced (CPP) -Also known as cryopoor plasma. CPP is made from FFP that has been centrifuged and depleted of cryoprecipitate. The remaining plasma product is labeled as CPP and is deficient in fibrinogen, Factor VIII, Factor XIII, von Willebrand factor (vWF), cryoglobulin, and fibronectin. CPP can be helpful in plasma exchange for patients with a diagnosis of thrombotic thrombocytopenic purpura (TTP) who have not responded to apheresis with regular plasma, because the high-molecular-weight forms of vWF (multimers) are more thoroughly removed than smaller multimers. CPP is not routinely stocked in the hospitals.

5. PROCEDURE

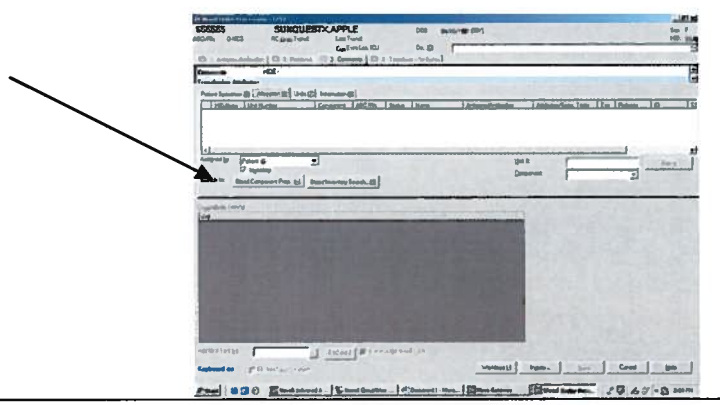
A. Selection of Plasma for Transfusion

Step	Action
1	Ensure the following requirements are met prior to allocating plasma. A. The recipient must have had a T&S drawn and tested within 10 days of plasma transfusion **and** be wearing a valid blood bank armband. B. The floor must fax a completed "Transfusion Order" form to the blood bank or have a documented telephone order on file in the blood bank. C. The floor must place a "TPLAS" order in Cerner or have a documented telephone order on file in the blood bank.

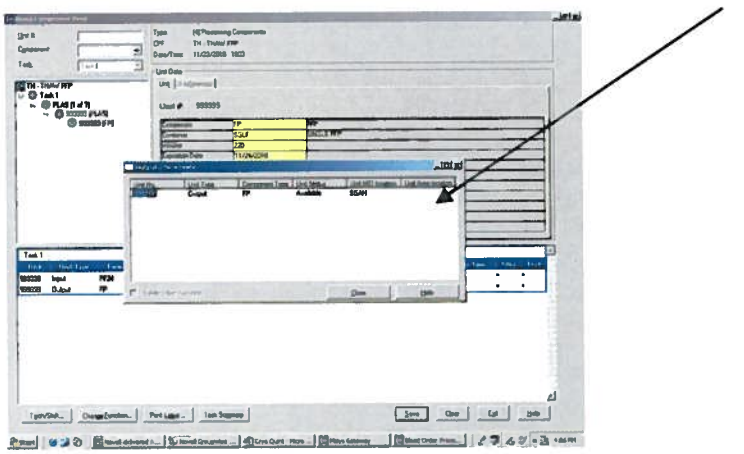
Form revised 3/31/00

Step	Action
2	Choose plasma units from the freezer for the recipient. A. Plasma products MUST be ABO-compatible. B. Rh does not need to be taken into consideration when transfusing plasma since plasma is non-cellular. C. Refer to Appendix A for guidance. D. Give AB plasma products in emergency situations where the recipient's blood type is unknown. E. CPP **cannot** be substituted for plasma and should only be transfused when specifically requested and approved by a pathologist. F. **Note: Only 2 plasma may be ordered for a patient at one time unless the patient is actively bleeding or undergoing plasma exchange.** The provider must re-evaluate the patient and place a new order if additional plasma units are needed.
3	Remove each unit of plasma from its box or wrap and inspect for splits or breakage. Discard any unit that contains splits or breakage and select another unit for thawing. Refer to procedure, "Disposal of Blood and Blood Products."
4	Document the following information on the "Thawed Product Label Verification Log." A. Unit number B. Product Type (E code prior to thawing)

B. Allocating and Thawing Plasma

Step	Action
1	Access the patient in Sunquest function Blood Order Processing.
2	Select the "TPLAS" order from the order selection list.
3	Click on the "Allocation" tab.
4	Click on the "Blood Component Prep" button. 

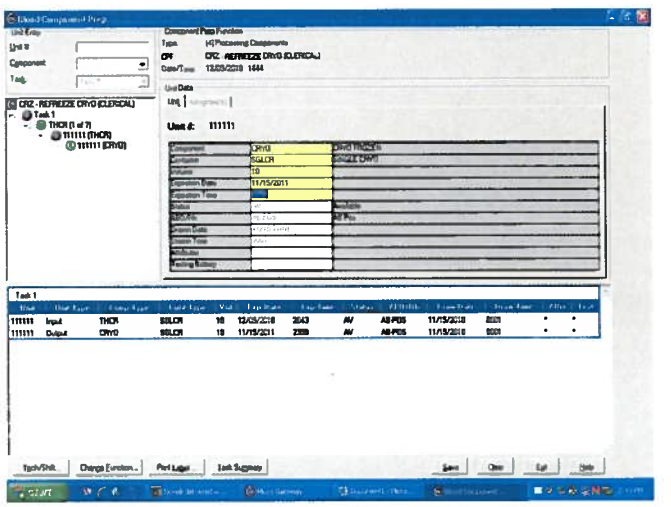
Form revised 3/31/09

Step	Action
5	A "Blood Component Prep" screen will appear. A. At the "Value" prompt, type the component prep function that corresponds to the unit that you are thawing. Refer to appendix B for guidance. B. Press the tab key twice to default the current date and time. C. Click the "Continue" button.
6	A second "Blood Component Prep" screen will appear. A. Scan the unit number of the plasma unit to be thawed in the "Unit #" field. B. Choose the correct component from the dropdown menu and press the "tab" key. C. Repeat steps A and B for any additional units to be thawed. D. Note the new expiration date and time. Document the new expiration date and time on the "Thawed Product Label Verification Log." Click the "Save" button.
7	The message "File all units?" will appear. Click the "OK" button.
8	An output screen will appear. Verify all output information to ensure accuracy (include hospital to ensure the plasma is assigned to the correct HID) and click on the "Close" button. 
9	The LIS will return to the allocation screen in Blood Order Processing. In the "Compatibility Testing" column, indicate whether the plasma is OK for transfusion. A. Type "[" to indicate "OK for transfusion." B. Type "]" to indicate "not OK for transfusion." C. DO NOT issue any unit that is not acceptable for transfusion. Discard per procedure, "Disposal of Blood and Blood Products."

Form revised 3/31/00

Step	Action
10	Thaw the plasma unit(s) in a 30-37°C waterbath. **Do not attempt to speed thawing by raising the temperature of the plasma thawer!** A. The use of an automated plasma thawer is preferred. B. Place each unit in a plastic bag if the unit(s) will be submerged in water (open waterbath). This step may be omitted if the plasma is thawed in a closed-system. C. Remove plasma from the waterbath immediately when completely thawed.
11	Wipe any moisture from the outside of the bag with a clean, disposable towel.
12	Update the unit label. A. For ISBT_128 labeled units, print a new label and apply to the front of the unit. Refer to procedure "ISBT-128 Label Production." B. For Codabar-labeled units: a. Change the expiration date and time of the unit. The new expiration date and time were documented on the "Product Modification Log." i. Draw a single line through the existing expiration date and initial. ii. Write the new expiration date and time on the unit using moisture-proof, permanent ink. iii. Thawed FFP, PF24, and CPP expire 120 hours (five days) after thaw or the original manufacturer's expiration (whichever is sooner). b. Cross out the product license number and initial. Thawed plasma is not licensed by the FDA. c. Place a barcoded, thawed plasma product label over the FFP or PF24 label. Cross out the anticoagulant that was not used (Ex. If the original unit was made from whole blood collected with CP2D anticoagulant, cross out the CPDA-1 anticoagulant on the label).
13	Give the edited blood product, "Thawed Product Label Verification Log," and the printed Blood Bank Product Tag to a second tech to review the edited expiration date and new product label. A. The second tech must verify the expiration date and time modified on the thawed unit are correct and match the expiration date and time listed on the Blood Bank Product Tag. B. The second tech must verify the correct product label or E code was placed on the unit. C. You may review the expiration date edits yourself only if you are the only tech working the shift.
14	Attach the "Blood Bank Product Tag and Administration Record" to the plasma bag and store refrigerated (1-6°C) until issue or expiration.

Form revised 3/31/00

Step	Action
15	Notify the patient care area that the plasma is available for pickup. Issue per procedure, "Issuing Blood Components."
16	Thawed plasma should NEVER be refrozen. However, if the plasma unit was thawed in the LIS but not physically thawed, the unit can be clerically refrozen in the LIS. If a supervisor is present, the status of the plasma should be changed using function "Blood Status Correction." If a supervisor is not present: A. Access Sunquest function "Blood Component Preparation." B. At the "Value" prompt, type "FRZ" to indicate "Refreeze Plasma Clerical" then press the "Tab" button. C. Press the "Tab" key twice to default the current date and time or type in the correct date and time. D. Click the "Continue" button. E. At the "Unit #" prompt, scan or type the unit number. F. Select the correct component type from the drop-down menu. G. Type in the expiration date and time of the original product. The expiration time will be 2359 unless otherwise listed.  H. Click on the "Save" button. I. At the "File all units?" prompt, click the "OK" button. J. An "Output/New Units" screen will pop-up. Click the "Close" button. K. Return the units to the freezer.

6. RELATED DOCUMENTS

SOP: Disposal of Blood and Blood Products
SOP: Issuing Blood Components
SOP: ISBT-128 Label Production
Form: Thawed Product Label Verification Log

Form revised 3/31/00

7. REFERENCES

1. Roback, J.D., Combs, M.R., Grossman, B.J., Hillyer, C.D. 2011. Technical Manual of the AABB, 17th ed. AABB Publishing, Bethesda, Maryland.
2. Standards for Blood Banks and Transfusion Services, 28th ed. AABB Publishing, Bethesda, Maryland.
3. Circular of Information for the Use of Human Blood and Blood Components. 2009.

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes WAB.014.000, SHB.014.001		
000	4.16.13	Section 2: Updated transfusion indications. Section 4: Updated to reflect change from PF24 to thawed plasma with an expiration date of 5 days. Section 5: Updated to reflect change from PF24 to thawed plasma with an expiration date of 5 days. Removed instructions for placing and receiving orders; nursing now completes these tasks in Cerner. Added instructions for ISBT-128 labeled units. Section 9: Added appendix B and C.	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

Appendix A - Selection of plasma products
Appendix B - Plasma thawing functions
Appendix C - Labeling codabar units

Form revised 3/31/00

Appendix A
Selection of Plasma Products

Recipients Type	1st Choice	2nd Choice	3rd Choice	4th Choice
O-positive or O-negative	O	A	B	AB
A-positive or A-negative	A	AB		
B-positive or B-negative	B	AB		
AB-positive or AB-negative Or Unknown Blood Type	AB			

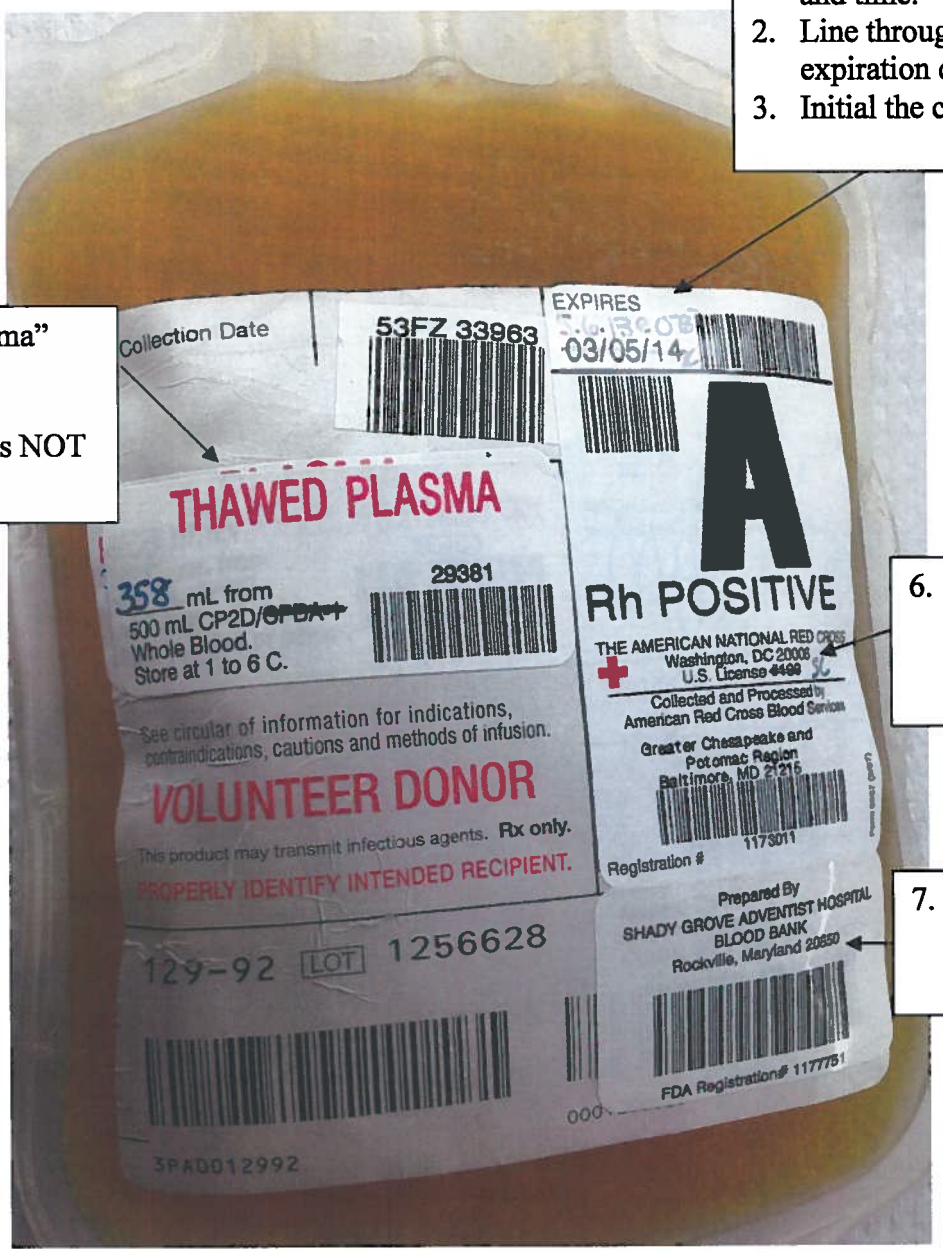
Appendix B
Plasma Thawing Functions

Original Product	Component Prep Function	Final (Thawed) Product
E0701	TE0701	E2701
E0707	TE0707	E2719
E0713	TE0713	E2737
E0869	TE0869	E2284
E1624	TE1624	E2284
E2553	TE2553	E2700
E2555	TE2555	E2701
E2585	TE2585	E2718
E2587	TE2587	E2719
E2617	TE2617	E2736
E2619	TE2619	E2737
Codabar-Labeled Unit	TH5	Thawed Plasma

Appendix C
Labeling Codabar Units

1. Add the new expiration date and time.
2. Line through the original expiration date.
3. Initial the change.

4. Add "Thawed Plasma" label with volume.
5. Line through the anticoagulant that is NOT in the bag.



6. Line through the FDA license number and initial.

7. At SGAH, add the FDA registration label.

Form revised 3/31/00