PURPOSE

To provide instructions for processing requests of thawed plasma.

A. FFP contains plasma proteins including all coagulation factors. FFP contains functional amounts of coagulation factors V and VIII (Labile Coagulation Factors) and serves as a source for deficient or defective plasma proteins. These being indicated in the following conditions:
   1. Management of preoperative or bleeding patients who require replacement of multiple plasma coagulation factors.
   2. Patients with massive transfusion who have clinically significant coagulation abnormalities.
   3. Patients on coumadin who are bleeding or need to undergo an invasive procedure before Vitamin K could reverse the coumadin effect.
   4. Patients with thrombotic thrombocytopenic purpura (TTP).
   5. Management of patients with selected coagulation factor deficiencies for which no concentrates are available.
   6. Management of patients with rare specific plasma protein deficiencies, such as C-1 esterase.

B. Plasma Frozen within 24 hours of Phlebotomy
   1. Plasma components containing reduced amounts of labile coagulation factors V and VIII.
   2. Contain stable coagulation factors such as Factor IX and fibrinogen in concentrations similar to that of FFP.

C. Plasma Cryoprecipitate Reduced
   1. Deficient in Factor VIII, Factor XIII, von Willebrand factor (vWF), fibrinogen, cryoglobulins and fibronectin.
   2. Proteins such as albumin, ADAMTS13, Factors II, V, VII, IX, X and XI remain in the same concentration as in FFP.

D. 5 Day Thawed Plasma
   1. FFP, PF24, or PF24RT24 thawed between 30-37 ºC stored between 1-6 ºC for up to 5 days.
   2. Contains stable coagulation factors such as Factor II and fibrinogen in concentrations clinically similar to those of FFP, but variably reduced amounts of other factors.
   3. Levels and activation state of coagulation proteins in thawed plasma are variable and change over time.
   4 Thawed plasma should not be used as treatment for isolated coagulation or specific plasma protein deficiencies where other products are available with higher concentrations of the specific factor(s) or proteins.

EQUIPMENT

A. Plasma Thawer
B. Plastic bags

SPECIMEN and REQUISITION

A. Refer to Blood Bank Specimen and Requisition SOP.

B. Frozen plasma stored at -18^{o}C or below.

C. Plasma requisition does not need to be signed, dated or timed unless it is accompanied by a specimen.

D. The appropriate KPHC order is the one with the heading 'Prepare Fresh Frozen Plasma'.

E. A manual Transfusion Service requisition is also acceptable if properly completed with information when KPHC is unavailable.

PROCEDURE:

A. **Selection of appropriate ABO group plasma for transfusion**

1. Check the patient's **ABO/Rh** and **Special Needs** in the LIS.
   a. **Inpatients and ER patients:** Two ABORh are required with one of the ABORh performed within the **current** admission before plasma can be dispensed.
   b. **Outpatients:** Two ABORh are required before plasma can be dispensed.
   c. Refer to ***Unusual Product Request Policy*** for **quantity and Special Needs restrictions** prior to filling the order.
2. Search for Auto/DD availability.
3. Select a unit of plasma that is ABO compatible with the patient. Select pedi-FFP for neonates or babies less than 1 year old.
4. Rh need not be considered for plasma transfusion because plasma does not contain red cells.
5. CMV negative, irradiated, leukoreduced or red cell antigen negative need not be considered for frozen plasma.

Patient's ABO	Plasma Donor Selection
O	O , A , B , AB
A	A , AB
B	B , AB
AB	AB

B. **Thaw frozen plasma**

1. Start thawing frozen plasma only when a requisition is received, unless in urgent situations i.e. patient in surgery or bleeding profusely when phone request is acceptable, which must then be followed ASAP with a written order.
2. Use any thawed plasma no longer needed by the original patient first before thawing any additional frozen plasma.
3. Carefully remove the frozen product from the freezer.
4. Examine for cracks, broken port or tubing and signs of thawing during freezing.
5. Process frozen component to thawed plasma in the LIS. (See Computer SOP and section below).
6. Place the frozen plasma into the plastic plasma thawing bag to prevent contamination of entry ports.

7. Thaw plasma in the plasma thawer.
8. Leave the frozen plasma in the plasma thawer for 15-20 minutes or until thawed.

C. **Product Modification in LIS**

1. Modify the frozen component to 5 day-thawed plasma (except for component collected in an opened system and pedi-FFP- see Note) and assign to patient. **Note:** Thawed cryopoor plasma collected in a closed system has 5 days expiration. Thawed plasma and cryopoor plasma collected in an opened system has 24 hours expiration. Thawed pedi-FFP has 24 hours expiration.
2. New ISBT face label will print for all thawed products. After unit is thawed, affix the printed ISBT face label (minus the unit#) over the original face label leaving the original unit# visible. Proceed to Label Verification. Unit that fails verification must not be dispensed until after problem is resolved.
3. Affix the LIS generated Component Label to the back of the unit.
4. Affix one Prepare FFP Accession# aliquot label on the top right quadrant of each yellow chart copy.
5. Leave the Transfusion Service Component Report with the requisition in the tray on the front counter.

D. Place thawed plasma in 1-6 ^{o}C blood storage refrigerators according to blood group.

PROCEDURE NOTE(S)

A. If a unit of plasma breaks in the plasma thawer,
   1. Final dispose the unit in the LIS to 'Destroyed' status.
   2. Fill out the appropriate blood supplier form for credit.

B. If the thawed plasma is not used before the expiration time (or overtemp when returned), destroy unit in the LIS. Document in the Blood Product Wastage Access database.

REFERENCE

A. AABB, Standards for Blood Banks and Transfusion Service, current edition, Bethesda, MD.
B. AABB Technical Manual, current edition, Bethesda, MD.
C. Circular of Information.