Plasma (Frozen Within 24 Hours of Collection) vs Fresh Frozen Plasma (FFP)

The Blood Bank will be substituting the routine use of Fresh Frozen Plasma (FFP) to Plasma – Frozen Within 24 Hours of Collection (fp24) to all patients at Saint Joseph Hospital and Childrens Hospital of Orange County. In our opinion, the two products are interchangeable. The availability of FFP has dwindled due to the Blood Bank communities’ efforts to reduce the incidence of Transfusion Related Lung Injury (TRALI). The following describes these products and their differences:

**Fresh Frozen Plasma (FFP):**
FFP is the fluid portion of blood that is separated and frozen at −18°C or colder within 8 hours after collection of whole blood if the anticoagulant solution is CPD, CP2D, OR CPDA-1. Plasma collected in ACD or 2-3% Sodium Citrate must be frozen within 6 hours of collection.

FFP contains plasma proteins including all coagulation factors. By definition, each mL of idealized plasma contains 1 international unit (IU) of each coagulation factor. Since the volume of this component is generally between 180 and 300 mL, a unit of FFP usually contains about 200 IU of each coagulation factor. The amount of coagulation factor activity in one unit of FFP equals approximately 7% of the coagulation factor activity in a 70 kg patient.

**Plasma – Frozen Within 24 Hours of Collection (fp24):**
(fp24) is usually separated and frozen at −18°C between 8 and 24 hours after whole blood collections. It contains all stable proteins found in FFP. This component contains about 150 IU of Factor VIII.

**Indications:** Treatment of stable coagulation factor deficiencies for which no viral-inactivated coagulation factor concentrates are available.

**Contraindications:** Do not use fp24 for replacement of labile coagulation factors such as Factors V and VIII. Otherwise, the contraindications are the same as for FFP.

**Discussion:** There is little difference in the levels of labile coagulation factors between FFP and fp24. Factor V levels studies were essentially the same in plasma frozen at 8 hours and at 24 hours after collection. On the average, the major difference is a 25% reduction of Factor VIII. Upon immediate thaw, plasma held at 4°C for 8 hours after collection was 84% ± 16% versus plasma held at 4°C for 24 hours after collection, which was 64% ± 13%. Thawed plasma can then be stored at refrigerator temperature (1-6°C) for an additional 4 days. At expiration, all coagulation factors are maintained, except Factor VIII, which declines to approximately 40% of normal, still above the level required to maintain effective hemostasis (30-35%).