

Hamilton Regional Laboratory Medicine Program - HRLMP (effective at Hamilton Health Sciences, St. Joseph's Healthcare and Associated Health Care Facilities)		
Initial Issue Date: Revision Date:	Administration Guidelines	Section: Laboratory Medicine Sub-Section: Transfusion Medicine
Title: FRESH FROZEN PLASMA, (Human) Fresh Frozen Plasma, Apheresis		Document Number:
<i>Approved By:</i> Director, Laboratory Medicine Chair, Regional Transfusion Medicine Committee Head, Transfusion Medicine, HRLMP Manager, Transfusion Medicine, HRLMP Technical Specialist, Transfusion Medicine, HRLMP Chief of Nursing Practice, Hamilton Health Sciences Chief of Nursing Practice, Hamilton Health Sciences		Page 1 of 4

Purpose: To Establish the Indications and Administration of Fresh Frozen Plasma (FFP)

Scope: Applies to all patient care areas across HHS and St. Joseph's Healthcare

Definitions: Fresh Frozen Plasma is separated from whole blood and frozen within 8 hours of collection and contains a minimum of 0.70 IU/mL of Factor VIII plus other labile and non-labile plasma coagulation factors.

Other Names: FFP	Date Approved:	Pages: 1 of 4
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<p>INDICATIONS:</p> <ul style="list-style-type: none"> - Helps stabilize coagulation status in newborn infant - Exchange transfusions in neonates - Massive transfusion in patients with a demonstrated deficiency of Factor VIII and V, otherwise, cryosupernatant plasma is adequate
<p>DOSAGE:</p> <ul style="list-style-type: none"> - Volumes transfused depends on clinical situation, patient size, and may be guided by serial laboratory assays of coagulation function - For replacement of coagulation factors for adults and newborns, dose of FFP is 10 to 20 mL/Kg; which is expected to increase the level of coagulation factors by 20%.
<p>SUPPLIED:</p> <ul style="list-style-type: none"> - Volume is at least 100mL of plasma when derived from a whole blood collection - Fresh frozen plasma, apheresis is collected by apheresis and frozen within 8 hours of collection (this is equivalent to 2 bags of regular FFP made from a whole blood collection) - Stored frozen for 12 months at minus 30°C or colder.

RECONSTITUTION AND STABILITY:

- Stored frozen thawing may take 20 to 30 minutes
- Once thawed, the product may be given as FFP within 24 hours if stored at 1-6°C, or as plasma for up to 5 days, if stored at 1-6°C
- If maintained at room temperature, for more than 30 minutes, must be transfused within 4 hours from the time it leaves the laboratory, or discarded

ADMINISTRATION:

- Prior to administration, recipient and product identification must be made
- FFP must be ABO compatible

Recipient Group	Compatible Donor FFP Group(s)	} RH not a consideration
O	O, A, B, AB	
A	A, AB	
B	B, AB	
AB	AB	

- Newborn infants receive group AB mini FFP

METHOD	WHO/WHERE	DILUTION	HOW TO ADMINISTER	INFUSION PUMP	PRECAUTIONS AND MONITORING
IV PUSH	N/A	N/A	N/A	N/A	N/A
MINIBAG/ BURETROL	No	No	No	No	No
PRIMARY IV BAG	RN	No	- Administer by infusion using blood administration set with filter	Yes	- Observe and monitor for adverse reaction
IM or SC	N/A	N/A	N/A	N/A	N/A

COMPATIBILITIES/INCOMPATIBILITIES:

- FFP should not be used to provide blood volume expansion due to possible exposure to risk of transfusion transmitted diseases

ADVERSE EFFECTS:

Acute Reactions:

a) **Allergic Reaction:**

- Manifested by cutaneous urticaria, wheezing
- If only a cutaneous reaction occurs product should be stopped, antihistamine administered and the transfusion can usually be resumed.
- Subsequent reaction may be prevented by premedication with an antihistamine

b) Bacterial Contamination:

- Manifested by chills, high fever, hypotension, or rigors
- Symptoms usually appear early in the transfusion
- Stop infusion immediately
- Return product to Transfusion Medicine for culture
- Perform blood culture on the patient
- Aggressive supportive care and antibiotic treatment

c) Anaphylactic Reaction:

- Manifested by bronchospasm, dyspnea, hypotension and shock
- Occurs in an IgA deficient recipient, who has antibody to IgA
- Usually occurs after a small volume of blood (10 to 15mL) infused.
- Immediate treatment with adrenaline and cortico-steroids indicated
- Discontinue product immediately

d) Transfusion Related Acute Lung Injury (TRALI):

- Manifested by fever, pulmonary edema without evidence of cardiac failure, tachycardia, hypotension
- Can occur 2 to 8 hours post transfusion
- Usually caused by a potent white cell antibody in the donor product that reacts with the patient's white cells
- Treat symptoms; report to Transfusion Medicine (as donor must be removed from the donor pool).

e) Febrile Reactions (non-hemolytic febrile transfusion reactions)

- Manifested by temperature rise of $<1.5^{\circ}\text{C}$ with or without chills - usually due to cytokines released by leukocytes

f) Circulatory Overload

- Manifested by pulmonary edema
- Can occur after a transfusion of excess volumes, or at excessively rapid rates
- Particular risk in elderly, patient with small stature or in patients with chronic severe anemia
- Can be avoided by slowing the rate of infusion or administering diuretic

g) Passive Alloimmune Thrombocytopenia

- Manifested by abrupt onset of thrombocytopenia within hours after plasma infusion
- Caused by donor plasma alloantibodies that destroy recipient platelets.
- Report to Transfusion Medicine (as donor must be removed from donor pool)

h) Alloimmune Hemolysis

- Hemolytic transfusion reaction may occur when incompatible ABO group plasma is given
- Stop transfusion, manage symptoms
- Treat symptoms

Delayed Reactions

(a) Post transfusion purpura:

- dramatic sudden thrombocytopenia 5 to 10 days after blood transfusion
- Transmission of infectious agents (HIV, HBV, HCV)
- Transmission of infectious diseases (Malaria, Chagas)

MANAGEMENT OF ADVERSE EFFECTS:

Notify Transfusion Medicine

Notify Physician

NOTES:

Distributed by Canadian Blood Services

Documentation:

Issue Transfusion sheet or requisition with unit number must be included in patient's chart.
Written consent for transfusion must be obtained prior to administration.

References:

Circular of Information Canadian Blood Services, August 1999.
Blood Transfusion Therapy. A Physician's Handbook, 7th Edition American Association of Blood Banks, 2002

Developed By In Consultation With:

Transfusion Medicine Operations Group
Adult Clinical Nurse Educators
Pediatric Clinical Nurse Educators
Neonatologists
Pediatricians

REVIEW DATES:

REVISION DATES: