

TRANSFUSION GUIDELINES Adult Patient

Risks of transfusion

1 in 100	Minor Allergic reaction
1 in 100	Transfusion Associated Circulatory Overload (TACO)
1 in 300	Febrile Non Hemolytic reaction
1 in 7000	Delayed Hemolytic reaction
1 in 10,000	Bacterial Sepsis to platelets (per platelet pool)
1 in 10,000	Transfusion Related Acute Lung Injury (TRALI)
1 in 40,000	Acute Hemolytic reaction due to ABO-incompatibility error
1 in 40,000	Severe Allergic reaction
1 in 60,000	Death from Bacterial Sepsis (per platelet pool)
1 in 250,000	Bacterial Sepsis to red cells
1 in 500,000	Death from Bacterial Sepsis (from red cells)
Less than 1 in 1,000,000	West Nile Virus
1 in 1,700,000	Hepatitis B Virus (HBV) transmission
1 in 4,000,000	Chagas Disease (Trypanosoma cruzi)
1 in 4,300,000	Human T-Cell Leukemia Virus (HTLV) transmission
1 in 6,700,000	Hepatitis C Virus (HCV) transmission
1 in 8,000,000	HIV transmission

RED BLOOD CELLS Non-Bleeding Patient

Typical infusion time: 1 unit over 2 hours (maximum 4 hours)

If at risk for overload or elderly, transfuse 1 unit over 3-4 hours with furosemide pre-transfusion

HEMOGLOBIN g/L	UNITS of RBC	RECOMMENDATION
less than 60	1-2	Transfusion highly recommended <ul style="list-style-type: none"> • Young patients may tolerate greater degrees of anemia • Patients with chronic iron deficiency can often be treated with IV iron alone
less than 70	1	Likely appropriate
less than 80	1	Likely appropriate in patients with cardiovascular disease
less than 90	1	Only if there are signs and symptoms of impaired tissue oxygen delivery
greater than 90	none	Likely inappropriate <ul style="list-style-type: none"> • Consult Blood Bank physician and document indication in patient chart

Transfuse 1 unit then re-assess patient's symptoms (shortness of breath, chest pain, tachycardia, dizziness) as well as hemoglobin level prior to ordering another unit

RED BLOOD CELLS Bleeding Patient

CLINICAL SETTING	RECOMMENDATION
<ul style="list-style-type: none"> • Low risk patient 	Maintain hemoglobin greater than 70 g/L during active bleeding
<ul style="list-style-type: none"> • Cardiovascular disease • Acute coronary syndrome 	Maintain hemoglobin greater than 80 g/L during active bleeding

PLATELETS Typical infusion time: 1-2 hours (maximum 4 hours)

CLINICAL SETTING	PLATELET COUNT X 10 ⁹ /L	RECOMMENDATION
<ul style="list-style-type: none"> • ITP – Immune thrombocytopenia 	less than 10	Transfuse platelets ONLY with life threatening bleeding
<ul style="list-style-type: none"> • Non-immune thrombocytopenia 	less than 10	1 platelet pool
<ul style="list-style-type: none"> • Prior to procedures NOT associated with significant blood loss e.g. vaginal delivery, central venous catheter insertion, paracentesis, thoracentesis 	less than 20	1 platelet pool
<ul style="list-style-type: none"> • Therapeutic anticoagulation that cannot be stopped 	less than 30	1 platelet pool
<ul style="list-style-type: none"> • Significant Bleeding • Major surgery • Pre invasive procedure associated with significant blood loss • Lumbar puncture • Acute promyelocytic leukemia <ul style="list-style-type: none"> • during acute presentation 	less than 50	1 platelet pool
<ul style="list-style-type: none"> • Peri-neurosurgery • Head trauma or CNS bleeding • Extreme life-threatening hemorrhage 	less than 100	1 platelet pool
<ul style="list-style-type: none"> • Platelet dysfunction due to antiplatelet agents (e.g. clopidogrel) or post cardiopulmonary bypass pump AND marked bleeding 	Any	1 platelet pool

PLASMA Typical infusion time: 30 min - 2 hours per unit (maximum 4 hours)

CLINICAL SETTING	INR	RECOMMENDATION
Warfarin reversal or Vitamin K deficiency AND <ul style="list-style-type: none"> • Pre emergency surgery • Serious bleeding 	greater than 1.5	<p><u>DO NOT USE PLASMA</u></p> <p>PCC (prothrombin complex concentrates) as per monograph on Sunnynet AND Vitamin K 10 mg IV</p>
<ul style="list-style-type: none"> • Significant bleeding • Liver disease coagulopathy AND pre invasive procedure 	greater than 1.8	3-5 units plasma Note: plasma is not required prior to procedures not associated with blood loss irrespective of INR e.g. paracentesis, thoracentesis, central line placement
<ul style="list-style-type: none"> • Microvascular bleeding • Extreme life threatening hemorrhage 	Unable to wait for results	2-4 units plasma for every 4 units of RBCs Note: If massive transfusion required follow the Code Omega policy available on Sunnynet

CRYOPRECIPITATE Typical infusion time: 15-30 min (maximum 4 hours)

CLINICAL SETTING	FIBRINOGEN g/L	RECOMMENDATION
Microvascular bleeding	less than 1	10 units cryoprecipitate
Extreme life-threatening hemorrhage	less than 2	10 units cryoprecipitate
Acute promyelocytic leukemia <ul style="list-style-type: none"> • during acute presentation 	less than 1.5	10 units cryoprecipitate