Marshfield Labs™
A division of Marshfield Clinic

Adult Transfusion Criteria

Indications for transfusion of any blood component, repeat testing and/or physician statement concerning a change in a patient's condition following transfusion shall be documented within 24 hours (96 hours for outpatients) of the transfusion.

PACKED RED BLOOD CELLS

Nonsurgical

Need shall be documented by one or more of the following:

- ☐ Hemoglobin < 7 g/dL
- ☐ Hematocrit < 21%

Patients not meeting this criteria should have other clinical indication documented to justify the transfusion such as hemodynamic instability, existence of significant cardiac, pulmonary, or vascular disease or advanced age. Transfusion at Hgb/Hct < 7/21 assumes an otherwise stable euvolemic patient.

Exception: Oncology patients receiving chemotherapy and those patients that are experiencing a significant decline in Hgb are predicted to become significantly anemic without intervention.

Surgical

Need shall be documented by one or more of the following:

- ☐ Hemoglobin < 7 g/dL
- ☐ Hematocrit < 21%
- ☐ Estimated blood loss in surgery > 1000 mL, and patient receives PRBCs within 24 hours of surgery.

Exception: Cardiac Surgery.

Autologous transfusion

Need shall be documented by one or more of the following:

- ☐ Hemoglobin < 11 g/dL
- ☐ Hematocrit < 34%

PLATELETS

Non surgical

Need shall be documented by one or more of the following:

- ☐ Platelet count < 10,000 – 20,000/uL^3 for prophylaxis
- ☐ Bleeding time prolonged
- ☐ Coagulation consult recommending platelet transfusion

Exception: In general, myelodysplastic patients and other patients with platelet dysfunction may be an exception.

Surgical/bleeding lesion

Need shall be documented by one or more of the following:

- ☐ Platelet count < 50,000
- ☐ Bleeding time prolonged
- ☐ Coagulation consult recommending platelet transfusion
- ☐ Intraoperative blood loss greater than one blood volume (adult = 10 units) or use of autologous salvage equipment

Exceptions: Cardiac patient with pit < 100,000 if patient has been on aspirin or if patient is actively bleeding. Neurosurgery, Spine Surgery or Opthalmologic Surgery if pit < 100,000.

Recommended Dose: 1 platelet concentrate per 10 Kg of body weight.

FRESH FROZEN PLASMA (FFP)

Need shall be documented (preferably within 4 hours of the transfusion) by one or more of the following:

- ☐ History of clinical course suggestive of a coagulopathy due to deficiency(ies) of labile coagulation factor(s)
- ☐ Bleeding documented by:
  - PT > 15 seconds
  - APTT > 40 seconds
  - Coagulation of studies of isolated factors pending at time of infusion
- ☐ Reversal of warfarin effect (vitamin K better, but slower)
- ☐ Severe disease with coagulopathy
- ☐ A criterion from liquid plasma as stated below

Exception: Cardiac Surgery, if PT > 14 seconds, APTT > 36 seconds or patient actively bleeding and/or if multiple units of PRBCs are given for the massively bleeding patient, Thrombotic thrombocytopenic purpura (TPP), Antithrombin III deficiency or large, active bleeding.

CRYOPRECIPITATE

Need shall be documented (preferably within 12 hours of the transfusion) by one or more of the following:

- ☐ Fibrinogen < 100
- ☐ Abnormal factor VIII assay
- ☐ Coagulation consult recommending cryoprecipitate transfusion
- ☐ Uremia (BUN > 40 mg/dL or Creatinine > 4mg/dL)
- ☐ Factor XIII deficiency

Exceptions: Cardiac surgery if actively bleeding or fibrinogen

< 100 mg/dL
Specific factor deficiency
DIC/pump induced platelet dysfunction
Massively transfused patient

GRANULOCYTES

Need shall be documented by one or more of the following:

- ☐ Indication of infection (fever, positive blood culture, lesion, chest x-ray showing pneumonia)
- ☐ Absolute granulocyte count < 500/uL
- ☐ Unresponsive to appropriate antibiotic therapy > 24 – 48 hours
- ☐ Bone marrow with myeloid hypoplasia
- ☐ Reasonable chance for patient survival

Exception: Neonate with sepsis (granulocyte dysfunction).

All requests for granulocytes are referred to a Blood Center of Wisconsin physician for consultation with ordering physician

FACTOR CONCENTRATES (Dispensed by Pharmacy)

Need shall be documented by one or more of the following:

- ☐ Appropriate clinical setting:
  - Hemophilia A for Factor VIII concentrate
  - Hemophilia B for Factor IX concentrate
  - Deficiency of Factor IX or VII for prothrombin complex concentrate
- ☐ Presence of Factor VIII inhibitors
- ☐ Coagulation consult recommending specific concentrate transfusion

Link to Blood Center of Wisconsin 2011 Blood Utilization Guidelines:
http://www.bcw.edu/cs/groups/public/documents/documents/mdaw/mda2/~edisp/2011_blood_utilization_guide.pdf

TRANSFUSION REACTIONS

Shall be documented and reported to the Blood Bank when one or more of the following occur:

- ☐ Transfusion disease transmission including:
  - Hepatitis C
  - Human immunodeficiency virus (HIV)
  - Other
- ☐ Hemolytic or nonhemolytic reactions (frequency 5 – 10%) most often manifested by:
  - Temperature elevation (> 1^{o}C or > 1.5^{o}F)
  - Chills, chest pain, hypotension, nausea, flushing, dyspnea, hemoglobinuria, shock, generalize bleeding, oliguria/anuria, back pain, pain at infusion site
- ☐ Cutaneous hypersensitivity, i.e., urticaria (frequency 1 – 3%)
- ☐ Anaphylactic reactions
- ☐ Bacterial contamination
- ☐ Other symptoms of circulatory overload, noncardiogenic pulmonary edema (TRALI), air embolism, hemosiderosis, anticoagulant effect, electrolyte imbalances, graft vs. host disease
- ☐ Delayed hemolytic reaction
- ☐ Transfusion-associated circulatory overload

Link to NHSN reporting criteria:
http://www.cdc.gov/nhsn/PDFs/Biovigilance/BV-HV-protocol-current.pdf