5.1 Transfusion Criteria

Since transfusion of blood or blood components may cause serious complications, transfusion should be undertaken only after considering the etiology and course of the patient’s disease and clinical condition. If transfusion therapy is indicated, the specific agent that is lacking should be identified and a specific component used to replace the deficit.

A. Transfusion Criteria for Red Blood Cells

1. Leukocyte Reduced Red Blood Cell Transfusion
   - Threshold:  • Hemoglobin – 8 g/dL  • Hematocrit – 24%

   - General Medical Patient Guidelines for red blood cell transfusion:
     1) CVP <4 CMS/H₂O and HCT <24% or
     2) Systolic blood pressure < 90 mmHg or
     3) Falling blood pressure > 20% and HCT < 24% or
     4) Increased pulse rate > 100 and HCT < 24% or
     5) Actual or anticipated blood loss > 500 cc and HCT < 24% or
     6) Symptomatic (chest pain, SOB, weakness, fatigue, fainting, dizziness, etc.) and HCT < 24%
     7) Symptomatic anemia

   - The following clinical situations that might be exceptions, requiring transfusion levels above the threshold HGB 8g/dL and HCT 24%.
     1) Actively Bleeding cases
     2) Hemodynamically unstable cases
     3) Major surgery cases with anticipated blood loss
     4) Closed procedure where bleeding cannot be controlled
     5) Advanced coronary artery disease
     6) Angina pectoris
     7) Advance peripheral vascular or cerebrovascular disease
     8) Recurrent anemia associated with an unresectable GI malignancy and active bleeding
     9) Unanticipated hemorrhage following percutaneous biopsy procedures
     10) Elderly patients undergoing joint replacement procedures
     11) Patients receiving autologous blood

   - In the following clinical settings leukocyte reduced red blood cells must be transfused.
     1) All outpatient transfusions
     2) All patients with a history of febrile, non-hemolytic transfusion reaction.
     3) Patients on immunosuppressive therapy who may need repeat blood/platelet transfusions.
     4) Patients who are candidates for organ transplantation.
5) Paroxysmal nocturnal hemoglobinuria

B. Transfusion Criteria for Platelets
   - Pre-transfusion platelet count is done and
   - Count <20,000 and diagnosis of a malignancy infiltrating the bone marrow or induced by chemotherapy OR
   - Count <50,000 with active bleeding or pre-op

C. Transfusion Criteria for Frozen Plasma:
   - Active bleeding with a PT > 16 secs OR a PTT > 55 secs (these times not being due to Heparin) AND Platelet count > 80,000
   - Surgical patient with generalized bleeding that cannot be controlled by sutures or cautery, with a PT > 16 secs, OR a PTT > 55 secs (these times not being due to Heparin) AND Platelet count > 80,000
   - Patient has congenital deficiencies of Factors II, V, VII, X, XI, or XIII, AND is bleeding OR is about to undergo an invasive procedure
   - To correct a drug Warfarin effect when the patient is actively bleeding OR when emergency surgery is required.
   - To treat TTP (thrombotic thrombocytopenic purpura)

D. Cryoprecipitate
   - Von Willebrand’s disease. (If Humate P ® Factor VIII Concentrate is not available)
   - Hypofibrinogenemia.
   - Hemophilia A if factor VIII product is not available.

E. Rh Immune Globulin
   Rh (D) negative mothers without immunity to Rh (D) (anti-D antibody) in the following clinical situations:
   - Amniocentesis.
   - Abdominal trauma or vaginal bleeding during pregnancy.
   - Spontaneous or induced abortion.
   - Delivery of a Rh (D) positive baby.
   - Prophylactically at 28 weeks.
   NOTE: Rh immune Globulin should be given within 72 hours of the event.

F. Antihemophilic Factors (Ordered directly from the pharmacy)
   - Factor VIII
     - Hemophilia A (Factor 8 deficiency).
     - Von Willebrand’s Disease (should be treated with Humate P ® Factor VIII concentrate if available)

Before ordering and after administering antihemophilic Factor VIII, result of Factor VIII Assay should be obtained. Time is needed to order the
antihemophilic product. Factor VIII is dispensed through the Pharmacy. The physician is responsible for determining the appropriate dose.

- **Factor IX**
  - Hemophilia B (Factor 9 deficiency)