

Pediatric Transfusions

Further Information Is Available By Contacting The Medical Director of the Transfusion Medicine Service: Zbigniew M. Szczepiorkowski, M.D. or the Blood Bank Medical Director, Nancy M. Dunbar M.D.

Red Blood Cells

- Patients less than 4 months of (chronological) age
 - Hemoglobin < 13 g/dL (hematocrit < 40%) in neonates < 24 hours old
 - Hemoglobin < 13 g/dL (hematocrit <40%) and at least one of the following conditions:
 - Severe pulmonary disease
 - Cyanotic heart disease or heart failure
 - Severe apnea of prematurity
 - Removal of blood for laboratory testing when the cumulative volume removed exceeds 10% of the infant's blood volume in a 1-week period
 - Acute blood loss \geq 10% of total blood volume
 - Hemoglobin < 8 g/dL (hematocrit < 25%) in stable newborn infants with clinical manifestations of anemia
- Patients 4 months of age and older
 - Significant preoperative anemia, hemoglobin < 8 g/dL (hematocrit < 25%) in emergency surgical cases or in non-emergency cases where an alternate, effective therapy for anemia (e.g. iron therapy in a child with iron deficiency anemia) is not practical and/or available.
 - Intraoperative blood loss \geq 15% of total blood volume
 - Postoperative hemoglobin < 8 g/dL (hematocrit <25%) and symptoms and signs of anemia
 - Acute blood loss with symptoms and signs of hypovolemia not responsive to crystalloid or colloid infusion
 - Hemoglobin < 13 g/dL (hematocrit < 40%) and severe pulmonary disease, cyanotic heart disease or heart failure (surgical and non-surgical).
 - Hemoglobin < 8 g/dL (hematocrit < 25%) in patients receiving chemotherapy and/or radiotherapy
 - Sickle cell disease and one of the following:
 - Cerebrovascular accident
 - Acute chest syndrome
 - Splenic and/or hepatic sequestration
 - Recurrent priapism
 - Preparation for surgery with general anesthesia
 - Chronic congenital or acquired anemias without an expected satisfactory response to medical therapy with a hemoglobin level < 13 g/dL (hematocrit < 40%) and signs and symptoms of anemia
 - Chronic transfusion programs in selected patients with thalassemia syndromes or red cell transfusion dependent disorders.

Platelets*

- Premature infants (gestational age < 37 weeks)
 - Platelet count $\leq 50 \text{ E}+9/\text{L}$ in a stable preterm infant
 - Platelet count $\leq 100 \text{ E}+9/\text{L}$ in a sick preterm infant
- All other patients
 - Platelet count $\leq 20 \text{ E}+9/\text{L}$ in a patient with failure of platelet production
 - Platelet count $\leq 50 \text{ E}+9/\text{L}$ with active bleeding or the need for an invasive procedure in a patient with failure of platelet production
 - Platelet count $\leq 100 \text{ E}+9/\text{L}$ with active bleeding or the need for an invasive procedure in a patient with DIC or other coagulation abnormalities
 - Bleeding with a qualitative platelet defect and significant prolongation of the bleeding time regardless of the platelet count.

Plasma*

- Bleeding, or an invasive procedure, in a patient with documented coagulation factor deficiency or a significantly prolonged PT and for whom a specific factor concentrate is not available.
- Bleeding during massive transfusion (in excess of one blood volume in less than 24 hours) not due to dilutional thrombocytopenia.
- Replacement therapy in Protein C or S deficiencies.
- Replacement therapy during therapeutic plasma exchange for disorders in which FFP is beneficial.

Cryoprecipitate*

Bleeding, or an invasive procedure, in patients with hypofibrinogenemia (per adult criteria) or dysfibrinogenemia

Reconstituted Whole Blood

- Exchange transfusion
 - Hemolytic disease of the newborn
 - Hyperbilirubinemia
 - Under certain clinical situations patients with sepsis and/or disseminated intravascular coagulation (DIC) may be considered for exchange transfusion
- Cardiovascular bypass surgery
- Extracorporeal membrane oxygenation (ECMO)

Granulocytes*

- Bacterial sepsis in neonates < 2 weeks of age with neutrophil plus band count < $3 \text{ E}+9/\text{L}$.
- Bacterial sepsis or disseminated fungal infection unresponsive to antibiotics in patients > 2 weeks of age with neutrophil plus band count < $0.5 \text{ E}+9/\text{L}$.
- Documented infection(s) unresponsive to antibiotics plus a qualitative neutrophil defect regardless of the neutrophil plus band count.

* Subject to pre-transfusion review for compliance with audit criteria.