

CHOC CHILDREN'S PEDIATRIC BLOOD USE GUIDELINES

BLOOD PRODUCT	UTILIZATION GUIDELINES
Whole Blood or Reconstituted Whole Blood	<ul style="list-style-type: none"> • Exchange transfusion • Extracorporeal Life Support (ECLS) • Replacement of more than one blood volume in 24 hours.
RED BLOOD CELLS (Infants ≤ 4 months old)	<ul style="list-style-type: none"> • Hemoglobin < 13g/dl and severe pulmonary or cyanotic heart disease or heart failure. • Acute loss of > 10% of blood volume or phlebotomy for laboratory testing when cumulative amount exceeds 10% of blood volume in a 1-week period. • Hemoglobin < 8g/dl in stable newborn infant & with clinical manifestations of anemia, such as tachycardia, tachypnea, recurrent apnea, and decreased vigor
RED BLOOD CELLS (Children > 4 mo. old)	<ul style="list-style-type: none"> • Preoperative hemoglobin <7g/dl when alternative therapy is not available or postoperative hemoglobin < 7g/dl with signs or symptoms of anemia. • Acute loss of >15% of blood volume or signs and symptoms of hypovolemia that is not responsive to fluid administration. • Hemoglobin <13g/dl and severe cardiopulmonary disease. • Hemoglobin <7g/dl in patients receiving chemotherapy. • Hemoglobin <7g/dl in patients with chronic anemia without expected response to medical therapy and signs or symptoms of anemia. • Hemoglobin <10g/dl for patients receiving radiotherapy • Complications of sickle cell disease, such as cerebrovascular accident, acute chest syndrome, or for preoperative preparation. • Chronic transfusion regimen for thalassemia or other red cell-dependent disorder
PLATELETS	<ul style="list-style-type: none"> • Platelet count < 20,000/ul in a non-bleeding patient with failure of platelet production • Platelet count < 50,000/ul and impending surgery or invasive procedure or in a patient experiencing hemorrhage • Diffuse microvascular bleeding following cardiopulmonary bypass or during use of an intra-aortic balloon pump with no significantly abnormal coagulation parameters • Diffuse microvascular bleeding and planned invasive procedure in a patient who has lost more than one blood volume in whom platelet count results are not yet available • Bleeding in a patient with a qualitative platelet defect, regardless of platelet count
GRANULOCYTES	<ul style="list-style-type: none"> • Requires Hematology consult • Bacterial sepsis in an infant <2 weeks of age with neutrophil count <3000/ul that is falling. • Bacterial sepsis or disseminated fungal infection that is unresponsive to antibiotics in a patient >2 weeks of age with neutrophil count <500/ul • Infection that is unresponsive to antibiotics and the presence of a qualitative neutrophil defect, regardless of the neutrophil count.
THAWED PLASMA	<ul style="list-style-type: none"> • Diffuse microvascular bleeding in a patient given more than one blood volume and coagulation test results not yet available • Microangiopathic hemolytic anemia (eg thrombotic thrombocytopenic purpura) being treated with plasma exchange. • Emergency reversal of Warfarin (coumadin) anticoagulation. • Deficiency of specific factors of the coagulation system when virus-inactivated concentrates are not available
CRYOPPT (AHF)	<ul style="list-style-type: none"> • Fibrinogen <80 to 100 mg/dl • Diffuse microvascular bleeding and fibrinogen <100 to 120 mg/dl • Von Willebrand disease or hemophilia unresponsive to 1-deamino-8-D- arginine vasopressin (DDAVP) and no appropriate factor concentrates available • Uremic bleeding (if DDAVP is ineffective or after tachyphylaxis) • Factor XIII deficiency

References:

- Standards for Blood Bank and Transfusion Services, AABB, 29th edition, 2014
- Technical Manual, AABB, 18th edition, 2014
- Circular of Information, For The Use of Human Blood and Blood Components, AABB, 2014
- Pediatric Transfusion Guidelines, 12/11/2006
- Clinical Guide to Transfusion Medicine, Canadian Blood Services, 4th edition, 2007