# CHOC CHILDREN’S
## PEDIATRIC BLOOD USE GUIDELINES

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| Whole Blood or Reconstituted Whole Blood | *Exchange transfusion*  
*Extracorporeal Life Support (ECLS)*  
*Replacement of more than one blood volume in 24 hours.*                                                                                                                                                                                                                                      |
| RED BLOOD CELLS (Infants ≤ 4 months old) | *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) | *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 or 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                            | *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                         | *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                        | *Diffuse microvascular bleeding in a patient given more than one blood volume and coagulation test results not yet available*  
*Microangiopathic hemolytic anemia (e.g 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)                        | *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  
Circular of Information, For The Use of Human Blood and Blood Components, AABB, 2014  
Pediatric Transfusion Guidelines, 12/11/2006  

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