



Red Blood Cells:

- Hemoglobin less than 7 g/dL^{1,2}
- Hemoglobin less than 8 g/dL if:
 - Patient with pre-existing cardiovascular disease or undergoing cardiac surgery.^{1,3}
- Patient with symptomatic anemia not responsive to fluids
- Life threatening hemorrhage/massive transfusion protocol (MTP)

Note: One unit of RBCs in an adult (or 8 mL/kg pediatric dose), should increase hematocrit by approximately 3% and hemoglobin by 1g/dL.

Platelets:

- Platelet count ≤ 10 k/mL prophylactically in patients with failure of platelet production^{4,5}
- Platelet count ≤ 20 k/mL with fever, or bleeding related to thrombocytopenia (petechiae, mucosal bleeding, etc.), or undergoing central venous catheter placement⁶
- Platelet count ≤ 50 k/mL in a patient undergoing elective lumbar puncture or invasive procedure⁶
- Platelet count ≤ 100 k/mL in a patient undergoing neurosurgery
- Perioperative bleeding with thrombocytopenia and/or evidence of platelet dysfunction post-cardiac bypass⁶
- Bleeding patients with platelet dysfunction
- Life threatening hemorrhage/massive transfusion protocol (MTP)

Note: A single apheresis unit of platelets should increase the platelet count by 30-60,000/cc³ under normal conditions. Methodist facilities only stock apheresis platelets; one apheresis unit is equivalent to a pool of six whole blood derived platelets (i.e. "six pack" of platelets).

Plasma:

- Replacement of clotting factor if deficient in multiple factors or if factor concentrate is not available.
- Emergent reversal of Coumadin in patients who can not receive PCC
- Suspected TTP or known TTP patient as a bridge to plasma exchange
- Life threatening hemorrhage/massive transfusion protocol (MTP)

Note: A dose of 10-15 mL/kg is usually adequate to correct a coagulopathy. One unit of frozen plasma has a volume of approximately 200-250 mL.

Cryoprecipitate:

- Replacement of fibrinogen in patients with acquired hypofibrinogenemia (i.e. surgical bleeding or post-partum hemorrhage).⁷
- Also contains factor VIII, factor XIII, vW factor, and fibronectin.
- Ordered as individual units for pediatrics, or pre-pooled for adults (1 pool= 5 units).

The above thresholds are guidelines and do not cover all clinical scenarios. If there is a question as to the appropriateness of transfusion or a blood product, a hematology or transfusion medicine/blood bank consult may be helpful. Please contact the blood bank if a specialty blood product is needed. Methodist 84th Street 402-354-4561; Methodist Women's Hospital 402-815-1176; Methodist Jennie Edmundson 712-396-7739; Methodist Fremont Health 402-727-3756.



References:

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3. Carson J, Sieber F, Cook D, et al. “Liberal versus restrictive blood transfusion strategy: 3-year survival and cause of death results from the FOCUS randomized controlled trial.” *Lancet*. 2015; 385(9974): 1183-1189.
4. Slichter S, Kaufman R, Assmann S, et al. “Effects of Prophylactic Platelet Dose on Transfusion Outcomes (PLADO Trial).” *Blood*. 2008; 112(11): 285.
5. Stanworth S, Estcourt L, Powter G, et al. “A No-Prophylaxis Platelet-Transfusion Strategy for Hematologic Cancers.” (TOPPS Trial). *NEJM*. 2013; 368: 1771-1780.
6. Kaufman R, Djulbegovic B, Gernsheimer T, et al. “Platelet Transfusion: A Clinical Practice Guideline from the AABB.” *Annals of Internal Medicine*. 2015; 162(3): 205-213.
7. Cohn CS, Delaney M, Johnson ST, Katz LM, Schwartz J. AABB Technical Manual, 21st Ed. Bethesda, MD: AABB Press; 2023.