METHODIST HOSPITAL
PATHOLOGY CENTER

# TRANSFUSION GUIDELINES FOR BLOOD COMPONENTS
## Approved by the Methodist Hospital Medical Staff, December 2020

**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 packed red cells in an adult, 8 mL/kg pediatric dose, will increase hematocrit by approximately 3% and hemoglobin by 1g/dL*

**Platelets:**

- Platelet count </= 10k/mL prophylactically in patients with failure of platelet production[4,5]
- Platelet count </= 20k/mL with fever, or bleeding related to thrombocytopenia (petechiae, mucosal bleeding, etc.), or undergoing central venous catheter placement[6]
- Platelet count </= 50k/mL in a patient undergoing elective lumbar puncture or invasive procedure[6]
- Platelet count </=100k/mL in a patient undergoing neurosurgery
- Perioperative bleeding with thrombocytopenia and/or evidence of platelet dysfunction post-cardiac bypass[6]
- Bleeding patients with platelet dysfunction
- Life threatening hemorrhage/ massive transfusion protocol (MTP)

***NOTE:** A single apheresis unit of platelets will increase the platelet count by 35,000 – 55,000/cc$^3$ in an adult*

**Plasma:**

- Replacement of clotting factor if deficient in multiple factors or if factor concentrate is not available.
- Emergent reversal of Coumadin in patients who cannot receive prothrombin complex concentrate (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 220ml.*

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 consult may be helpful.

**References:**


1. Carson J, Guyatt G, Heddle M, et al. “Clinical Practice Guidelines from the AABB: Red Blood Cell Transfusion Thresholds and Storage.” JAMA. 2016; 316(19): 2025-2035.
2. Hebert PC, Well G, Blajchman MA, et al. “A multicenter, randomized, controlled clinical trial of transfusion requirements in critical care. Transfusion requirements in critical care investigators, Canadian Critical Care Trials Group.” NEJM. 1999; 340(6): 409-417.
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.