The VUMC blood bank stocks apheresis platelets. One unit of apheresis platelets usually contains $3.0 \times 10^{11}$ platelets and is a therapeutic equivalent to 4 to 6 units of pooled platelets (old terminology “six pack”). All platelet products at VUMC are leukocyte reduced (LR), however, despite the 99.9% reduction in leukocytes in LR products, there remains $<5.0 \times 10^6$ leukocytes per unit. Compatibility testing is not necessary in routine platelet transfusion(s). The VUMC blood bank will make every effort to provide ABO compatible platelet transfusions available for all patients, however, the short shelf-life (5 days) of platelets may result in an ABO/Rh incompatible platelet transfusion. To reduce the potential risk for ABO-incompatible platelet transfusion passively mediated hemolytic transfusion reactions, the VUMC blood bank titers the donor plasma of select units in an effort to restrict “high-titer” apheresis platelet products to type-specific recipients. Apheresis platelets are suspended in donor plasma, which can vary between 100-500 mL. ACD-A is the anticoagulant solution currently used for the collection and preservation of apheresis platelets.

**Mechanism of Action**
Platelets are essential for normal hemostasis. Complex reactions occur between platelets, vWF, collagen in the walls of disturbed vasculature, phospholipids, and soluble coagulation factors, including thrombin. These changes induce platelet adherence to vessel walls and platelet activation, which leads to platelet aggregation and formation of a primary hemostatic plug. The therapeutic goal of platelet transfusion is to provide adequate numbers of normally functioning platelets for the prevention or cessation of bleeding. The lifespan of a transfused platelet is ~5 days.

**Indications**
Platelet transfusions may be given to patients with thrombocytopenia, dysfunctional platelet disorders, active platelet-related bleeding, or serious risk of bleeding (ie, prophylactic use). Prophylactic platelet transfusion may **not** be of therapeutic benefit when thrombocytopenia is related to destruction of circulating platelets secondary to autoimmune disorders [eg, immune thrombocytopenic purpura (ITP)]; however, when these patients bleed, platelet therapy is often useful. Consult hematology for further management recommendations for ITP.

**Contraindications**
Do not use this component if bleeding is unrelated to decreased numbers of, or abnormally functioning, platelets. Platelet hemostatic function/dysfunction from aspirin and/or clopidogrel (Plavix) can be assessed by the VUMC laboratory. The VerifyNow test is requires a special collection kit, please contact the VUMC laboratory at (615)875-5633 (located at TVC 4606).
If platelet function is normal, platelets should never be transfused when the platelet count is greater than 100,000/μL. Prophylactic transfusion is generally not indicated when platelet dysfunction is extrinsic to the platelet, such as in uremia, certain types of von Willebrand disease, and hyperglobulinemia. Patients with congenital surface glycoprotein(s) defects should be transfused conservatively to reduce the possibility for alloimmunization to the missing protein(s) [eg, Bernard Soulier, Glanzmann's thrombasthenia]. Do not use in patients with activation or autoimmune destruction of endogenous platelets, such as in heparin-induced thrombocytopenia (HIT), TTP, or ITP, unless the patient has a life-threatening hemorrhage.