**Ordering Blood**

- Order type and crossmatch if blood is to be given immediately or scheduled to be given within 3 days
- Order type and screen if blood may not be given; crossmatch can later be completed quickly if needed.
- A crossmatch is needed only for red cells; plasma and platelet orders do not require a crossmatch, but do require two patient blood type determinations on record.

**Platelet transfusion (adult)**

- Store only at room temperature, do not refrigerate or place in coolers.
- Each dose of platelets should raise count by ~30x10⁹/L

Platelets are most likely appropriate:

- Stable without bleeding < 10x10⁹/L
- Hematopoietic stem cell transplant ≤ 20x10⁹/L
- Before major procedures & up to 72 hr after < 50x10⁹/L
- Interventional radiology exceptions: Elective arterial procedure < 70x10⁹/L
  Non-vascular procedure < 70x10⁹/L
- Neurological or ophthomological procedure or bleeding < 100x10⁹/L
- Bleeding or pre-operative and any count
  - Documented reason for platelet dysfunction; or
  - Abnormal platelet function by thromboelastograph

Platelets are most likely NOT appropriate:

- Patients with immune thrombocytopenic purpura (ITP), thrombotic thrombocytopenic purpura (TTP) or heparin-induced thrombocytopenia (HIT) unless they have life-threatening hemorrhage

**Plasma Transfusion**

- Minimum effective adult dose is 2 units (~ 500 ml)
- Be aware of patient’s volume status, do not fluid overload
- INR ≥ 1.6 ≈ PT > 5 sec above upper normal

Plasma is most likely appropriate:

- Bleeding or before most procedures INR ≥ 1.6
- Interventional radiology exceptions:
  - Emergent arterial procedure INR > 2.0
  - Central venous line INR > 2.0
  - Venous procedure INR > 3.0
- Significant bleeding in patients with DIC any INR

Plasma is most likely NOT appropriate:

- Stable patients with INR ≤ 1.5
- For treatment of hypovolemia or hypoalbuminemia
- Correction of isolated prolonged PTT (usually due to heparin or lupus anticoagulant)
- To replace a single coagulation factor if concentrate is available (i.e. hemophilia and von Willebrand Disease)

**Cryoprecipitate transfusion**

- Typical dose is one pooled-pack which should raise fibrinogen 40-50 mg/dL

Cryoprecipitate is most likely appropriate:

- Isolated hypofibrinogenemia (~100 mg/dL)
- Patients with dysfibrinogenemia
- Bleeding in uremic patients if DDAVP and estrogens fail to improve platelet function or are contraindicated
- As part of massive transfusion

Cryoprecipitate is most likely NOT appropriate:

- Patients with concurrent clotting factor deficiency and hypofibrinogenemia (use FFP instead)
- Patients with von Willebrand disease or hemophilia A (use factor concentrates instead, when available)

**Red blood cell transfusion (adult)**

- One unit will raise Hgb by approximately 1 g/dL
- Hgb 8 g/dL = Hct 24%, Hgb 10 g/dL = Hct 30%

RBCs are most likely appropriate:

- 72 hr before and after surgery Hgb < 8 g/dL
- Chronic anemia if other therapy fails Hgb < 8 g/dL
- Clinical symptoms of anemia Hgb < 10 g/dL
- Massive blood loss (>750 cc or >15% blood volume) any Hgb

RBCs are most likely NOT appropriate:

- Asymptomatic patients with Hgb > 8 g/dL

**Modified Red Blood Cell Units**

- Orders for “fresh” or “washed” RBCs are appropriate in very few patients (i.e. severe transfusion reactions or specific causes of potassium elevation)
- Orders will be considered on a case-by-case basis

**Leukoreduced Products**

- All standard blood products at this institution are pre-storage leukocyte reduced to decrease the incidence of febrile nonhemolytic transfusion reactions and HLA alloimmunization.
- Leukocyte reduced units are CMV-safe products with virtually equivalent risk of CMV transmission as CMV seronegative units.
CMV-negative Products

- For nearly all patients leukoreduced blood is equivalent to CMV-negative blood
- CMV-negative blood is not routinely stocked

Blood Irradiation

- Prevents graft vs. host disease in susceptible patients
- Does not sterilize product or reduce risk of infection

Irradiation is appropriate:

- Hematologic malignancies
- Hematopoietic stem cell transplant recipient or scheduled for HSC transplant
- Receiving purine analogs (fludarabine, 2-CDA, etc.)
- HLA-matched products or directed donations from blood relatives
- Intrauterine transfusion
- Newborns who received intrauterine transfusions or are in the neonatal ICU
- Congenital T cell-mediated immunodeficiencies (DiGeorge’s, SCID, Wiskott-Aldrich, etc)

Irradiation is most likely NOT appropriate:

- Patients with AIDS or HIV
- Solid organ transplant recipients
- Patients receiving immunosuppressive therapy or chemotherapy who do not meet above criteria
- Congenital humoral immunodeficiencies (aggamaglobulinemia, hypogammaglobulinemia)

Supplementary Pediatric Guidelines

RBCs are most likely appropriate:

- Shock due to perinatal blood loss
- Infants on mechanical ventilation with:
  - MAP > 8 and FIO₂ > 0.4
  - Hct < 35%
  - FIO₂ < 0.4
  - Hct < 28%
  - Recently extubated with FIO₂ > 0.4
  - Hct < 28%
- Clinical signs of anemia, such as
  - Unexplained bradycardia or apnea for 48 hours
  - Serum lactate > 2.5 meq/L
  - Poor weight gain with adequate calories
  - Unexplained lethargy
- Prior to surgery
- Hct < 25%
- Without signs of anemia
- Hct < 20%

Platelets are most likely appropriate:

- Preterm infants with increased risk of bleeding
- Hct < 50 x 10⁹/L

Concise Blood Product Ordering And Administration Guidelines

Blood Bank: 8-4444

Based on guidelines prepared by:
UCD Blood Utilization Review Committee

Complete guidelines available at:
hhttps://www.uchealth.org/professionals/Pages/Clinical-Laboratory/Transfusion-Services.aspx

Updated: April 2015