

Standard Operating Procedure for Blood Administration

Purpose:

The safety and efficacy of transfusion practice requires that comprehensive policies and procedures for blood administration be designed to prevent or reduce errors. The development of these policies should be a collaborative effort among the Blood Bank Medical Director, the directors of the clinical services, and all personnel involved in blood administration. This SOP gives an overview of the major pieces that need to come together in order to establish a safe and effective process for blood administration.

Materials:

Transfusion Medicine Request form
[Associated SOPs—Pending]

Procedure:

I. INITIATION OF A TRANSFUSION REQUEST

- A. Who Can Order Blood?—Only a physician can initiate an order to administer blood.
- B. How is Blood Ordered?—The physician's order must be written on a *Transfusion Medicine Request* form, and shall specify:
 1. Patient's first/last names
 2. Patient's date of birth
 3. Patient's gender/age
 4. Patient's diagnosis and past transfusion/pregnancy history
 5. Desired blood component (e.g., red blood cells, platelets, etc.)
 6. Indication for the transfusion
 7. Number of units to be transfused
 8. Date to be transfused
 9. Name of physician ordering transfusion
- C. Samples—Upon initially ordering the blood, if patient blood sample has not already been submitted to the Blood Bank, it must be submitted at this time.
 1. Patient blood sample consists of one 5 mL red top (clot) tube

2. Patient blood sample must be obtained in such a way that identity of the patient is confirmed
3. Person who draws patient blood sample must do the following:
 - a. Label sample tube with patient's first/last names and date of birth
 - (1) This must be done before leaving the patient's bedside
 - (2) Also, the names/birth date on the tubes must perfectly match those on the Transfusion Medicine Request
 - b. Initial the tube so as to confirm who obtained it
 - a. Keeping patient's and donor's samples allows repeat or additional testing if patient experiences adverse effects of transfusion
 - a. To complete the procedure in a timely manner

II. OTHER THINGS THAT MUST BE DONE PRIOR TO TRANSFUSION

A. Informed Consent

1. Physician assesses patient and determines need for transfusion
2. If physician sees a significant need to transfuse, s/he discusses situation with patient (in all situations where: (1) there is sufficient time, and (2) patient is capable of holding a conversation)
3. Discussion revolves around:
 - a. Benefits
 - b. Risks
 - c. Alternatives to transfusion therapy
4. Patient must be given an opportunity to ask questions
5. The patient's informed consent then must be documented (either on a special form or on the patient's chart)

B. Patient Preparation

1. To relieve patient's anxiety, educate him/her about the following:
 - a. How transfusion will be given
 - b. How long it will take
 - c. What expected outcome is
 - d. What symptoms to report
 - e. That vital signs will be monitored regularly
2. If possible, establish venous access prior to receiving blood (to avoid any delay in transfusion)
3. Transfusionist should check medical record for special instruction and should assemble all necessary equipment before blood component is issued
4. Consider use of pre-medications in some situations—e.g., antihistamine for patients with history of previous allergic transfusion reactions; antipyretics for patients who frequently develop febrile nonhemolytic transfusion reactions (time administration of medications carefully—i.e.,--give oral medications earlier than IV medications)

C. Equipment for Transfusions

1. Have medical staff participate in assessment and selection of transfusion equipment

2. Needles and Catheters

- a. Peripheral Vein Access—Often, steel needles or plastic catheters are used for short-term transfusion therapy needs (if catheters are used, make certain they are maintained aseptically and changed as often as specified)
- b. Central Venous Access—Used for medium- and long-term courses of transfusion therapy and/or for administration of solutions potentially toxic to peripheral veins

3. Size of Lumen

- a. Lumen size must be large enough to allow appropriate flow rates without damaging vein
- b. 18 gauge catheter is ideal when tolerated (provides good flow rates for cellular components without excessive discomfort to patient); however, smaller patients require much smaller needles
- c. High flow rates through small-lumen catheters may damage RBC unless component is sufficiently diluted (e.g., undiluted RBCs flow very slowly through a 23-gauge catheter)
- d. On the other hand, dilution with saline to increase flow rate may cause unwanted volume expansion

4. Infusion Sets

- a. Must include an inline filter (i.e., 170-260 μm) that retains blood clots and other particles potentially harmful to patient as well as a drip chamber
- b. Prime set according to manufacturer's instructions
- c. Change set after 4 hours (due to potential for bacterial contamination)
- d. Special Infusion Sets
 - (1) Infusion sets for platelet/cryoprecipitate administration have smaller drip chambers/filter areas, shorting tubing, and smaller priming volumes (in order to minimize wastage)
 - (2) Syringe push sets have the smallest priming volumes and almost inconspicuous inline filters

D. Compatible Solutions

1. Medications must not be added to blood components
2. If dilution is needed, use normal saline
3. If there is interest in using other solutions for dilutional purposes, make certain that they have been documented as being safe and efficacious in blood; other potential "solutions" for addition to blood include (with approval from physician):
 - a. ABO-compatible plasma
 - b. 5% albumin or plasma protein fraction
 - c. Calcium-free, isotonic solutions that meet above requirements also may be used (but they are much more expensive than normal saline)
4. Do not use:
 - a. Lactated Ringer's solution
 - b. 5% dextrose in water
 - c. Hypotonic sodium chloride solutions

E. Blood Administration Policies and Procedures

1. Delivering Blood to Patient Area

- a. Typically, blood is not issued from Blood Bank until:

- (1) All testing is complete
- (2) Patient is properly prepared
- (3) Transfusionist is ready to begin procedure

References:

Chapter 22 (pp.483-494); AABB *Technical Manual*, 13th edition