دليل رقم 7

العمل الإجرائي لنقل الدم



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Blood Transfusion Procedural Work Guide

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Blood Transfusion

Blood is composed of red blood cells, white blood cells, platelets, and plasma, and makes up about 8% of body mass. It plays an important role in the human body, as it transports oxygen, nutrients, and metabolic waste products to and from the body's cells.

Plasma: a clear, slightly yellowish fluid that makes up about 55% of blood volume.

Red blood cells: about 5.5 million per cubic millimeter; they survive in the blood for approximately 120 days.

White blood cells: 4,000 to 11,000 per cubic millimeter of blood.

Platelets: 150,000 to 450,000 per cubic millimeter.

Blood types: A+, A−, B+, B−, AB+, AB−, O+, O−

Red blood cell compatibility chart

Recipient	Donor							
	O-	O+	A-	A+	B-	B+	AB-	AB+
O-	✓	✗	✗	✗	✗	✗	✗	✗
O+	✓	✓	✗	✗	✗	✗	✗	✗
A-	✓	✗	✓	✗	✗	✗	✗	✗
A+	✓	✓	✓	✓	✗	✗	✗	✗
B-	✓	✗	✗	✗	✓	✗	✗	✗
B+	✓	✓	✗	✗	✓	✓	✗	✗
AB-	✓	✗	✓	✗	✓	✗	✓	✗
AB+	✓	✓	✓	✓	✓	✓	✓	✓

Definition:

Administering a quantity of whole blood or one of its derivatives (plasma, platelets, red blood cells, or cryoprecipitate) to a patient according to the physician's instructions.



Reasons:

Cases of severe bleeding and shock, to compensate for blood loss and anemia, and deficiency of clotting factors — to compensate for the patient's blood loss and to correct abnormalities in blood components.

Complications of Blood Transfusion:

Signs of Incompatibility (Transfusion Reaction):

(Shortness of breath – rise in body temperature – skin rash – chest pain – chills – headache – nausea – increased or decreased heart rate – lower back pain – cardiac arrest)

Circulatory Overload:

(Shortness of breath – jugular vein distension – cyanosis of the extremities – dry cough – pulmonary fluid infiltration/edema)

Transmission of Certain Diseases:

(Hepatitis C virus – Hepatitis B virus – HIV – syphilis – malaria)

Equipment:

A bag of blood or its derivatives (fit for use) – IV pole – blood administration set – alcohol swab – medical adhesive tape – large-gauge cannula – gloves – tourniquet.

Steps

Before Administering Blood

1. Review the physician's orders (date – time – quantity – type – any medications prior to transfusion).
2. Sign the blood transfusion consent form.
3. Follow standard infection-control precautions (hand hygiene – gloves).
4. Draw a blood sample from the patient to determine blood type.
5. Measure vital signs.
6. Verify the following: patient's name – blood type – Rh factor – blood bag type – compatibility (cross-match) test – presence of any clotting in the blood bag – donation date and expiration date.
7. Leave the blood bag in the room to reach room temperature.

During Blood Administration

1. Explain the procedure to be performed to the patient.
2. Maintain the patient's privacy.
3. Insert a cannula for the patient.

4. Instruct the patient to report any complications.
5. Measure vital signs 5 minutes before starting.
6. Open the blood administration set, connect it to a bottle of normal saline, and prime it (to check that it functions properly).
7. Connect the set to the blood bag and infuse it into the patient very slowly for the first 15 minutes.
8. Measure the patient's vital signs every 5 minutes during the first 15 minutes, then after 30, 60, 90, and 120 minutes, and again just before completing the transfusion.
9. Observe for any signs of blood incompatibility with the patient's body.
10. Increase the infusion rate, if there are no signs of incompatibility, according to the physician's instructions on the order sheet.

• Stop the transfusion immediately if any signs of incompatibility appear; notify the physician, place the patient in a comfortable position, and measure vital signs.

After Administering Blood

1. Dispose of the empty blood bag after completing the required amount; connect the blood administration set to normal saline and flush the set until the blood has cleared from it, then discard it in hazardous waste.

Blood must not be stored in a regular (household) refrigerator.

Blood must not be warmed with boiling or hot water.

If any tear/damage is noticed in the bag, submit a written report to the blood bank and return the bag.

The bag may be left at room temperature for no more than half an hour.

2. Measure vital signs after the blood transfusion.
3. Record the type and quantity of blood administered.

Recommended Time Limits for Administering Blood and Its Derivatives

Type of Blood Product	Minimum Time	Maximum Time Allowed
Red blood cells / whole blood	2 hours	4 hours
Fresh frozen plasma	30 minutes	4 hours
Platelets	5–15 minutes per unit	4 hours
Cryoprecipitate	2 minutes per bag	4 hours



