

المديرية العامة لمستشفى خولة
Directorate General of Khoula Hospital

Directorate of Nursing Affairs

Document Title	Policy & Procedure for Adult Blood and Blood Products Transfusion
Document Type	Policy & Procedure
Directorate/Institution	Directorate General of Khoula Hospital
Targeted Group	Physicians, Nurses and Laboratory Staff
Document Author	Ms. Nawar Mubarak Al Shuaibi
Designation	Sr. Nurse A
Document Reviewer	Reviwer's Name Next Page
Release Date	July 2026
Review Frequency	Every Three Years

Validated by		Approved by	
Name	Ms. Huda Al Abri	Name	Dr. Rashid Al Alawi
Designation	Head of Accreditation Department	Designation	Director General
Signature		Signature	
Date	14/07/2026	Date	14/07/2026



Acknowledgement

I would like to acknowledge the team that wrote and reviewed the first version of this document, as well as the individuals and teams have contributed to the revision of the second version of this guideline. Moreover, I would like to extend my sincere gratitude to the following healthcare professionals for their valuable review, feedback, and contributions to this guideline:

1. Dr. Mohammed Al Zaabi- Consultant in Hematology & Blood Transfusion
2. Ms. Shamsa Al Sharji – Director of Nursing Affairs (DNA)
3. Ms. Aathar Al Jabri – Senior Staff Nurse
4. Ms. Nabila Khamis Al-Mout- Senior Nurse A
5. Ms. Reena Diamayacyac Sagala- General Nurse (Burn Unit)
6. Ms. Rawan Al-Mayahi- General Nurse A (Burn Unit)
7. Ms. Balqees AL Balushi- Acting Document Control Focal Point
8. Ms. Safa Al Raqqadi – General Nurse A, Accreditation Department (QMPSD)

Contents

Acronyms:.....	4
Chapter One:	5
1. Introduction:.....	5
2. Purpose.....	5
3. Scope:.....	5
4. Definitions:.....	5
Chapter Two:	6
5. Structure.....	6-7
6. Procedure.....	7-10
Chapter Three:	10
7. Responsibilities.....	10-11
Chapter Four:	12
8. Document History and Version Control:.....	12
9. Related Documents:.....	12
10. References.....	13
11. Annex.....	14

Acronyms

DGKH	Directorate General of Khoula Hospital
CGC	Clinical Guide Committee
MOH	Ministry of Health
QM&PSD	Quality Management and Patient Safety Directorate
ID	Identification
IPC	Infection Prevention & Control
FFP	Fresh Frozen Plasma
PLT	Platelets
RBCs	Red Blood Cells
IV	Intravenous
DVT	Deep Vein Thrombosis
PPE	Personal Protective Equipment
SpO ₂	Oxygen saturation

Policy & Procedure for Adult Blood and Blood Products Transfusion

Chapter One

1.Introduction

Blood and blood products transfusion is a shared responsibility among all healthcare professionals involved in the different stages of the transfusion process. It requires effective collaboration among physicians, nurses, and laboratory staff, to ensure patient safety and optimal clinical outcomes.

2.Purpose

The purposes of this policy and procedure are to:

- 2.1** Ensure that blood and blood product transfusion are carried out safely in accordance with established standards.
- 2.2** Minimize the risks associated with blood transfusion, including acute hemolytic reactions, transfusion-transmitted infections and human error that may occur before, during, and/or after the transfusion.
- 2.3** Ensure the timely identification and effective management of any adverse transfusion reactions.

3.Scope

This policy & procedure applies to all physicians, nurses and Laboratory Staff who are involved in adult blood and blood product transfusion to ensure correct administration of blood or blood products.

4.Definitions

- 4.1** Whole blood: Un-separated blood collected into an approved container containing an anti-coagulant preservative solution.
- 4.2** Blood components/products: Constituents of blood, separated from whole blood, such as packed RBCs, Fresh Frozen Plasma (FFP) and platelets.
- 4.3** Fresh Frozen Plasma (FFP): The fluid portion of donor blood that is separated and frozen at -18°C within 8 hours of collection.
- 4.4** Blood Transfusion: The process of administering whole blood or blood components to a patient through IV access.

Chapter Two

5. Structure

It is the policy and procedure of the Directorate General of Khoula Hospital to ensure that blood /blood Product transfusions are carried out safely in accordance with the following:

- 5.1 Appropriate Personal Protective Equipment (PPE) should be worn while handling or administering blood and blood products.
- 5.2 Aseptic techniques should be maintained while handling and transfusing blood or blood products.
- 5.3 In emergency situations all blood /blood products should be administered rapidly as per treating physician.
- 5.4 Patent venous access (central or peripheral) should be established and confirmed prior to blood and blood products transfusion procedure.
- 5.5 The transfusion of blood and blood products should be initiated within 30 minutes of collecting the blood/ blood products unit from the Blood Bank to maintain the quality and safety of blood and blood products.
- 5.6 The recommended transfusion duration for blood/blood products is as follows:
 - a. Whole blood and Packed Red Blood Cells (PRBCs) within 4 hours.
 - b. Platelets and Fresh Frozen Plasma within 30 minutes.
- 5.7 If a patient requires both platelets and Packed Red Blood cells (PRBCs), the platelets transfusion should be initiated first, unless otherwise clinically indicated.
- 5.8 Medications should not be mixed with blood products. If medication administration is required, use a separate compatible intravenous access or temporarily pause the transfusion in accordance with hospital policy.
- 5.9 The drop rate should be calculated as follows:
 - a. Use drop factor 15 or 20 (according to manufacturer's instruction on blood set)
 - b. Formula:
$$\frac{\text{Total volume to be infused} \times \text{Drop factor}}{\text{Time (in minutes)}} = \text{drops per minute}$$

- c. The infusion rate should be slow for the first 15 minutes. If no adverse reaction is observed, increase to the prescribed rate (in emergency situations, the blood/blood products should be transfused rapidly).
- 5.10** A blood transfusion set with a filter size of 170 – 200 microns should be used for transfusing blood and blood products.
- 5.11** Electronic infusion pumps should not be used for transfusion of blood/ blood products, as they may damage blood cells.
- 5.12** The Patient should be observed and monitored closely throughout the procedure as follows:
- Every 15 minutes for the first half hour.
 - Every 30 minutes for the next hour.
 - Hourly until the completion of transfusion.
- 5.13** Healthcare Professionals who initiate the transfusion should document it in the Al-Shifa system in the Progress Note/Kardex and blood transfusion monitoring form. Documentation should include the indication of transfusion, type of blood/blood products, volume, start/end time, blood group, unit number and unit expiry date.
- 5.14** In case of a transfusion reaction, healthcare professionals should adhere to the Investigation of a Suspected Adverse Transfusion Reaction Policy & Procedure.
- 5.15** The blood transfusion set should be used for a maximum of 4 hours until the blood transfusion is complete.
- 5.16** A Pressure bag (if available) may be used for rapid transfusion.
- 5.17** A Blood warmer is recommended for use while transfusing whole blood (if required).
- 5.18** Emergency equipment and medications for the management of transfusion reactions must be readily available within the unit before and during the blood transfusion.

6. Procedure

6.1 Before procedure

- Identify the patient in accordance with the Policy & Procedure of Patient Identification.
- Check and verify the treating physician's order for blood/blood products transfusion.

- c. Ensure that the cross matched blood or blood components are available in the blood bank via the Al-Shifa 3 plus system.
- d. Explain the procedure and the purpose of blood or blood products transfusion to the patient and their relatives. Obtain written consent as per The National Policy and Procedure Informed Consent.
- e. Assess patient's condition including the following:
 - Patient's general appearance.
 - Vital signs: temperature, pulse, blood pressure, respiratory rate, and SPO2.
 - Fluid intake and output.
- f. Ensure the patency of existing peripheral or central venous access by flushing the line with 5-10 ml syringe of 0.9% Sodium Chloride (according to the age of the patient) or insert a large bore cannula.
- g. Collect the blood or blood products unit from the blood bank in a clean tray after verifying details with the laboratory technician.
- h. Check the physical condition of the unit for leaks, discoloration, clots and excessive bubbling. If any are present return the blood or blood product to the blood bank and document the issue in the Al-Shifa 3 plus system.
- i. Double- check the patient's details and the cross matched form against the blood unit label with another healthcare professional, and keep the form in patient file.
- j. Keep the blood product at controlled temperature as per Blood Bank Immediate Cross Match Policy and Procedure. Use an approved blood warmer only when clinically indicated.
- k. Prepare a trolley containing the following equipment for the procedure:
 - Blood or blood product unit with compatibility label.
 - Blood or blood product transfusion set.
 - Cardiac monitor & Thermometer.
 - Sterile gloves and PPE.
 - Sodium Chloride 0.9% solution (100 ml).
 - Two 5-10 ml syringes (according to the age of the patient).
 - Disinfectant swabs.
 - Incontinence sheet.

- Blood warmer (optional).
 - IV pole.
 - Pressure bag (optional).
 - Kidney Tray.
 - Yellow and black disposable bag.
- h. Calculate the flow rate (drops /minute)

6.2 During Procedure

- a. Perform hand hygiene.
- b. Keep the patient in a comfortable position.
- c. Wear PPE as per Infection Prevention & Control (IPC) guideline and put on sterile gloves.
- d. If the patient is oriented, instruct him/her to verbalize any discomfort and abnormalities during and after transfusion, such as dyspnea, flank pain, itching, rashes, etc.
- e. Clean the peripheral/ central venous access with disinfectant swabs.
- f. Prime the blood transfusion set with 0.9% Sodium Chloride to clear the line from air and to check for defects and connect it with the blood/blood product unit.
- g. Connect the blood transfusion set to the blood warmer if required.
- h. Connect the blood transfusion set to the peripheral/Central venous access and adjust the flow rate.
- i. Start the blood transfusion at slow rate. If there is no evidence of a transfusion reaction within the first 15 minutes, increase the infusion rate to the prescribed rate.
- j. Patient should be observed and monitored closely.
- k. Remove and discard PPE and sterile gloves as per Infection Prevention & Control (IPC) guideline.
- l. Perform hand hygiene as per Hand Hygiene Policy & Procedure.
- m. Once the blood /blood product transfusion is over, disconnect the set and connect it to the 0.9% of Sodium Chloride (used for priming) and flush the blood set until clear.

6.3 After Procedure

- a. Keep the patient in a comfortable position and continue monitoring.

- b. Replace the equipment and discard the waste as per the Health Care Waste Management Policy and Procedure.
- c. Perform Hand Hygiene.
- d. Document the procedure in Al Shifa 3 Plus System including Kardex, blood transfusion monitoring and vital signs charts.
- e. If blood/blood product transfusion reaction is noticed, the following immediate action should be taken:
- Stop transfusion immediately.
 - Notify treating physician and carry out his/her orders.
 - Reassure the patient and check vital signs.
 - Insert a new IV Cannula, collect a 5 ml post transfusion blood sample (red cap), and a 2 ml EDTA (purple cap) blood samples.
 - Start 0.9% Sodium Chloride infusion.
 - Send the blood bag with the intact transfusion set to lab along with clotted And non-clotted EDTA samples.
 - Send the first voided urine specimen to the laboratory.
 - Ensure the Transfusion Reaction Evaluation Form (HP 216) is filled out by the treating physician.
 - Dispense copies of the Transfusion Reaction Evaluation Form as Follows:
 - White copy: to the Blood Bank.
 - Pink copy: to be kept in the Patient's file.
 - Yellow copy: to be kept in the ward.

Chapter Three

7. Responsibilities

7.1 Directors/ Heads of Departments (HoDs) Shall:

7.1.1 Ensure that all physicians adhere to this policy and procedure.

7.2 Physicians Shall:

7.2.1 Adhere to the Adult Blood and Blood Products Transfusion Policy and Procedure.

7.2.2 Prescribe blood and blood products through Al Shifa system based on clinical indications.

7.2.3 Complete the Blood/Blood Products Transfusion Reaction Form in case of any immediate adverse transfusion reaction.

7.3 The Director of Nursing Affairs (DNA) Shall:

7.3.1 Ensure that all Heads of Departments, Unit Supervisors and Shift Supervisors are aware of this policy and procedure.

7.4 Head of Departments/ Unit Supervisors/Shift Supervisors Shall:

7.4.1 Reinforce staff compliance with the Blood and Blood Products Transfusion policy and procedure

7.4.2 Investigate all incidents related to blood and blood products transfusions.

7.4.3 Ensure that appropriate actions are taken and documented in the event of a transfusion reaction.

7.5 Ward Nurse In-Charges / Shift In Charges Shall:

7.5.1 Ensure that all nurses adhere to this policy and procedure.

7.5.2 Ensure that appropriate training and supervision are provided to all staff, particularly new staff regarding the Blood and Blood Products Transfusion Policy and Procedure.

7.5.3 Ensure that all nurses in the ward document the relevant information in accordance with the Blood and Blood Products Transfusion Policy and Procedure.

7.5.4 Respond promptly and appropriately to any reported transfusion reaction.

7.6 Laboratory Staff Shall:

7.6.1 Be aware of Blood and Blood Products Transfusion Policy and Procedure.

7.6.2 Follow this policy and procedure and take appropriate action upon receiving notification of any blood or blood product transfusion reaction.

7.6.3 Ensure accurate blood grouping, cross matching, labeling and safe issue of blood and blood products.

Chapter Four

8.Document History and Version Control

Version	Description	Author	Review Date
1	Initial release	Taskforce	2018
2	Second	Ms. Nabila AL Mout	2022
2	Third	Ms. Nawar AL Shuabi	2029

9. Related Documents

9.1 Infection Prevention & Control Guideline (MoH/DGKH/ICP/GUD/008/Vers.02).

9.2 Hand Hygiene Policy and Procedure (MoH/DGKH/ICP/P&P/002/Vers.03).

9.3 Patient Identification Guideline (MoH/QAC/P&P/002/Vers.02).

9.4 Investigation of a suspected Adverse Transfusion Reaction Policy and Procedure (MoH/DGKH/LAB/BB/P&P/010/Vers.04).

9.5 Healthcare Waste Management Policy & Procedure (MoH/DGKH/P&P/005/Vers.02).

9.6 The National Policy & Procedure of Informed Consent (MoH/QAC/P&P/003/Vers.02).

9.7 Blood Bank Immediate Cross Match Policy and Procedure (MoH/DGKH/LAB/P&P/008/Vers.05)

10. References

- Abdulatif AlAwam, H.et al, 2024. Ensuring patient safety: The nurse's responsibilities in blood transfusion. Journal of International Crisis and Risk Communication Research.
- Association for the Advancement of Blood & Biotherapies (AABB), 2025. Standards for a Patient Blood Management Program. (5th ed). Available on: <https://www.aabb.org/standards-accreditation/standards/patient-blood-management-program>.
- B Campus Clinical Procedures, 2025. Transfusion of Blood and Blood Products - Clinical Procedures for Safer Patient Care. Available on: Clinical Procedures For Safer Patient-Care (mentions that emergency equipment and medications should be available during a transfusion)
- Directorate General of specialized Medical Care, Ministry of Health (MOH), Oman, Abdulatif Al Awam, H.et al, 2021. Policy and Procedure of Consent for Transfusion of Blood Components .Available on: <https://moh.gov.om/en/approved-documents/dg-of-health-services-and-programmes/policy-and-procedure-of-consent-for-transfusion-of-blood-component>.

11. Annex

11.1 Appendix (1):Blood Transfusion Al

