HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER MATERNITY AND CHILDREN HOSPITAL

Department:	Laboratory and Blood Bank		
Document:	Internal Policy and Procedure		
Title:	Stock Monitoring of Blood Component and Coping with Extreme Shortage of Blood Supply		
Applies To:	All Blood Bank Staff		
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1. PURPOSE:

1.1 To ensure proper availability of different blood products to meet routine and emergency needs.

1.2 To provide work instructions on the series of tasks performed by blood bank supervisors for calculating the minimum and ideal inventory levels for different blood components of different ABO groups and Rh types.

1.3 To establish system and set responsibilities for coping with extreme shortage of blood supply.

2. DEFINITONS:

2.1 **Inventory of Blood Bags and Blood Components (Stock):** A day to day inventory of tested blood which helps selection of blood to be cross matched for patients requiring transfusion.

2.2 **Expiration Date:** The last day on which the blood or blood component is considered suitable for transfusion.

2.3 **Calculation of minimum and ideal blood bank inventories** depends on a drop-back model. This model gives an estimate of the average daily blood usage of each ABO group and Rh type of different blood components .

3. POLICY:

3.1 Supplying blood in urgent situations is extremely important for patient care.

3.2 Daily inventory for the available blood and its components units is prepared and sent to health authorities.

3.3 The blood bank must maintain a reserve of blood components, and shall prepare for the unexpected, because blood loss can significantly exceed what is expected in both an individual patient, as well as in case of mass casualties.

3.4 The blood bank accept blood from accredited governmental supplier at the time of need. In life saving conditions, blood bank may accept blood from private hospitals.

3.5 Blood bank technicians are trained for handling of blood shortage.

3.6 Incoming blood and blood components are received and inspected before acceptance or use.

3.7 Blood bank staff must be aware of the process for requesting or releasing blood from or to outside facilities.

3.8 The process for requesting or releasing blood from or to outside facilities depends on blood bank inventory.

4. PROCEDURE:

4.1 **Setting up indicators of minimum and ideal blood components stock:**

4.1.1 Baseline Calculation: Average Daily Usage (ADU):

4.1.1.1 Collect the data of last year blood and product daily usage of different blood groups of different components.

4.1.1.2 Disregard the single highest usage for each type & the zero issues.

4.1.1.3 Total the number of units of each group and divide by the number of the day in which these units were issued.

4.1.1.4 The given average is the Average Daily Usage of different groups of different components.

4.1.2 Minimum and Ideal Blood Components Inventory levels Calculation:

4.1.2.1 The average daily usage is then used to calculate the following stock lines:

4.1.2.1.1 RED LINE: This is the same as the Average Daily Usage for every blood group and Rh type of different components. Stock at this line can cover one day of routine needs but not emergencies or disasters.

4.1.2.1.2 YELLOW LINE: This line is calculated by doubling the Average Daily Usage (ADU X2). It indicates that the Blood stock can cover two days of routine needs or one day of moderate emergencies.

4.1.2.1.3 GREEN LINE: This line is calculated by multiplying the average daily usage by 3 (ADU X3). Stock at this line can cover three days of routine needs; It can also cover emergencies and moderate disasters.

4.1.2.1.4 SAFE LINE: This line is calculating by multiplying the average daily usage by 7 (ADU X7). Stock at this line can supply one week of routine needs. It can cover routine needs, emergencies as well as disasters.

4.1.3 For PRBC's:

4.1.3.1 In MCH, the average daily use among different blood groups is very variable reaching near zero for AB+ and Rh-negative blood groups.

4.1.3.2 The blood bank should keep a minimum of TTD-free RBCs units (other than cross matched bags) to manage any urgent case in the hospital. This is guided by the green line of Blood Components Inventory levels. The numbers required are as follows:

(ABO) Blood Group	Rh (D) Positive	Rh (D) Negative
A	3	1
B	3	1
O	6	2
AB	1	0

4.1.3.3 Blood group (O) compensates for other ABO groups and Rh (D) negative group compensates for Rh (D) positive group.

4.1.4 For FFP:

4.1.4.1 In MCH, the average daily use of all blood groups is so small and considerably variable.

4.1.4.2 The blood bank should keep a minimum of TTD-free FFP units as follows:

ABO Blood Group (Rh-positive and -negative)	Number of Units (Screened)
A	5
B	6
O	10
AB	2

4.1.5 For Platelets (PC):

4.1.5.1 In MCH, the average daily use of all blood groups is highly variable and reaches near zero in many days per month.

4.1.5.2 Approximately, Try to keep 2 units of PC daily.

4.2 **Sources of blood in MCH-blood bank:** Refer to "Blood Donation Resources" and "Receiving/Sending Blood Products From/To Outside Facilities" policy

4.3 **Blood and blood component stock monitoring:**

4.3.1 Daily inventory for the available blood and its components units is prepared by the technician/specialist, checked by the supervisor of blood bank technicians and sent to health authority through the 'alert program'

4.3.2 It is done daily at start of the morning shift.

4.3.3 Every morning, the daily inventory for the available blood and its components units is confirmed electronically by the chief of blood bank or his designee and sent to health authority through the 'alert program'.

4.4 **The following steps to be followed during extreme shortage of blood supply:**

4.4.1 Keep our daily inventory of the blood stock in expected range (if possible) of maximum consumption of all blood groups.

4.4.2 In cases of increased demand and the blood stock cannot cope up with this situation:

4.4.2.1 Notify the attending physicians of the shortage so they can carry out other therapeutic approach ,if possible.

4.4.2.2 Notify the patient's relatives of our demand for blood and encourage them to donate. This is done by blood bank staff himself or through the nursing staff of admitting department.

4.4.2.3 Call our regular compensated donors or hospital staff.

4.4.2.4 Contact Hafr Al Batin Central Laboratory and Blood Bank (CBB) according the agreement in this regard.

4.4.2.5 If desired components are not available in CCB, Contact other blood banks facilities within the vicinity.

4.4.2.6 The blood bank in coordination with the Laboratory & Blood Bank director and medical director who is the chairman of blood transfusion committee may organize an outside education campaign to encourage potential donors to have a voluntary donation regularly.

4.4.2.7 The blood bank can make a call thorough the internet &/or any other form of mass media, to all potential donors, especially those who belong to a rare blood group.

4.5 **Getting blood from central blood bank:**

4.5.1 If a blood component request for a patient is not available in blood bank.

4.5.1.1 Contact the Director/blood banks coordinator or his designee in Hafr Al Batin Central Laboratory And Blood Bank about needs of the required blood components.

4.5.1.2 CBB will reply determining if the required blood component is available or not.

4.5.2 If the stocks of blood components become un-sufficient for 2 days.

4.5.2.1 Contact the Director/blood banks coordinator or his designee in Hafr Al Batin Central Laboratory And Blood Bank about needs of the required blood components

4.5.2.2 CBB will reply determining the amount of components that will be provided.

4.5.3 If the component is available. Bring the components from CBB. Refer to "Receiving/Sending Blood Products From/To Outside Facilities" policy for the procedure.

4.5.4 Receiving Of Blood Components: Refer to "Receiving/Sending Blood Products From/To Outside Facilities" policy.

4.5.5 Record the identification number, amount and type of the received units in the register of 'blood units received from other hospitals' register.

4.6 **Getting blood from other blood banks:**

4.6.1 If the required components are not available in the CBB or under circumstances. Blood components are requested from call the other blood bank facilities within the vicinity like King Khalid General Hospital (KKGH) or Hafr Al Batin Central Hospital (HCH).

4.6.2 The whole process is regulated through the Director/blood banks coordinator or his designee in Hafr Al Batin Central Laboratory And Blood Bank (CBB). Under certain circumstances, direct contact with those blood banks occurs.

4.6.3 For blood components requesting and receiving; refer to the "Receiving/Sending Blood Products From/To Outside Facilities" policy.

4.6.4 Record the identification number, amount and type of the received units in the register of 'blood units received from other hospitals' register.

4.7 **Notes:**

4.7.1 In case of enough stock, supervisor of blood bank technicians will choose the types of blood group needed and inform the staff in the donation area allowing the donation for those donors

4.7.2 When PRBC or FFP units are near expired date, the blood bank technician supervisor calls governmental blood banks and send these bags to be used there (if they accept).

4.7.3 In life saving conditions, blood bank may accept blood units from private hospitals.

5. MATERIALS AND EQUIPMENT:

5.1 **Forms and Records:**

5.1.1 Dispense of blood and blood components to outside facilities form

5.1.2 Requests of blood from other hospitals form

5.1.3 Register of 'blood units received from other hospitals' & hematos system of blood bank

5.1.4 Daily inventory of blood component file

6. RESPONSIBILITIES:

6.1 Blood bank technicians/ specialists and supervisor of blood bank technicians or his deputy to follow the detailed policy and procedure.

6.2 Setting Up Indicators of minimum and Ideal Blood Components Stock:

6.2.1 To be performed by Blood Bank physician or Blood Bank supervisor.

6.2.2 To be understood by all blood bank staff.

6.3 Keeping daily inventory of the blood stock in expected range (if possible) of maximum consumption of all blood groups is the responsibility of blood bank supervisor.

6.4 Daily inventory for the available blood and its components units is prepared by the technician/specialist, checked by the supervisor of blood bank technicians and sent to health authority through the 'alert program'.

6.5 In cases of increase demand and the blood stock cannot cope up with this situation the blood bank supervisor or staff are responsible for:

6.5.1 Notifying the attending physician of the shortage so they can carry out other therapeutic approach. If possible.

6.5.2 Notifying the patient's relatives of the demand for blood and encourages them to donate. This is done himself or through the nursing staff of department of admission.

6.5.3 Calling regular compensated donors or hospital staff .

6.5.4 Contacting Central Blood Bank according the agreement for provision of blood components to MCH.

7. APPENDICES:

7.1 N/A

8. REFERENCES:

8.1 The Unified Practical Procedure Manual For Blood Banks In The Arab Countries, 1434-2013.

8.2 The Standard Policy For Blood Banks In The Kingdom Of Saudi Arabia, 1st edition, 1435-2014.

8.3 National Standards For Clinical laboratories and Blood Banks, 1st edition, 2015.

8.4 AABB Technical manual, 18th edition, 2014.

8.5 AABB Standards for Blood Banks and Transfusion Services, 30th edition, 2016.

8.6 Mollison's Blood Transfusion in Clinical Medicine; 12th edition, 2014.

8.7 Good Manufacturing Practice for Blood Establishments, Version 2.0, May 2019, Saudi FDA

9. APPROVALS:

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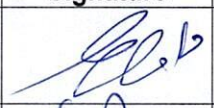
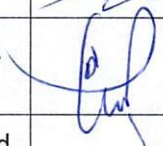
Prepared by:	Dr. Mohammed Amer	Blood Bank Physician		January 06, 2025
Reviewed by:	Dr. Kawther M. Abdou	Consultant & Lab. Medical Director		January 08, 2025
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