



Ministry Of Health
Central Blood Bank

2016

PMEP Training Program

9/05/2016 – 5/06/2016

Submitted to : IFCC

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2016



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Abbreviation and terms:

- **BTU** : Blood Transfusion Units.
- **BTS** : Blood Transfusion Services.
- **HIS**: Health Information System.
- **MoH** : Ministry of Health.
- **CBB**: Central Blood Bank.
- **NBTS** : National Blood Transfusion Services.
- **Q.C** : Quality Control
- **QMS** : Quality Management System .
- **TTIs** :Transfusion Transmitted Infections



Acknowledgment :

This report written in the basis of PMEP IFCC training program for Mr. Ayoub Rezeq at Sahlgrenska Gothenburg university hospital at the period of 09/05/2016 to 05/06/2016 and the data on this report depending to the gained data from that training.

My sincerer gratitude and appreciation to Mr. Osama Al-Najar for the nomination and support he gave.

Bundles of thanks to all staff at Sahlgrenska Gothenburg university hospital especially those who are working at the blood transfusion services.

Not forgetting special thanks to Mrs. Camilla Heisse for her concern and support to Mr. Ayoub Rezeq during his presence in Gothenburg.

Last but not least all many thanks and appreciation to all the IFCC staff for their true support to PMEP training, Dr. Prof. Maurizio Ferrari, IFCC President, Miss Silvia and to each and every participant who shared this training with us.



Introduction:

It is well known that errors in blood transfusion practices can lead to serious consequences for the recipient in terms of morbidity and mortality. The majority of errors occur due to incorrect sampling of blood from a patient, fetching the wrong unit of blood for a patient and transfusing blood inappropriately. These clinical transfusion guidelines describe protocols for the collection of blood samples for blood grouping and cross matching, and for the collection, storage and administration of blood and blood products.

The quality and safety of blood and blood products must be assured throughout the process from the selection of blood donors to the administration of blood into the patient.

Sahlgrenska university Hospital Blood Bank is one of the biggest blood bank in Sweden, they have a good number of donors and they have a good capability in the transfusion medicine.

Palestinian Central Blood Bank (CBB) is responsible for collecting ,sorting ,testing, storing and distributing of blood suppliers to all MoH hospitals as well as private hospital upon needed typically, by mobilizing the power of volunteers and the generosity of donors. Central Blood Bank is committed to be excellence in saving and improving lives in Palestinian community through maintaining a strategic stock of blood for crises conditions.

The aim for the training program was to increase Mr. Ayoub Rezeq awareness, abilities and skills in the quality of blood bank and blood transfusion in order to Transfer this experience to my colleagues in CBB to aid in developing and implementing quality assurance system in order to facilitate achieving the highest standards of quality services.



Organization Map:

Sahlgrenska university Hospital Blood Bank is one of the biggest blood bank in Sweden and the work organized through its divisions, which carry the responsibility of collection, testing, processing, storage and issuing of blood and blood products and these divisions are:

1- Dropen (Blood Donation) Centers :

There are four sites where the blood is collected; one of them located inside the hospital and the three other are Nordstan center at the city center and Frolunda center at different site in the city and Blodmobil center, which is mobile blood bank clinic, which is moved to different sites especially to the industrial areas.

All these centers send the collected blood to the main center (Sahlgrenska Hospital) through transportation company at fixed time to processed and stored in appropriate way in the other hand the samples from these blood units they send it to the Kliniskmikrobiologi center where these sample tested to TTIs.

2- Kliniskmikrobiologi (Clinical Microbiology) Center:

Clinical microbiology center are the center where all the samples tested to all Transfusion Transmitted Infections (TTIs).

This center have different role in addition to TTIs testing there is many different test and methods.

Two sections formed this center (Virology section and Serology Section) the virology where all donor samples received and getting the labels and then to be tested at the first time then any positive results will be send to the serology section to be confirmed.

3- Komponentframställning (Component Separation) Section:

The section where the blood units separated into their component at Sahlgrenska hospital

4- Blodlager (Blood Grouping) Section

This section concern of testing blood group for all donors and patients at Sahlgrenska hospital.

5- Immun-hematologi (Immuno-Hematology) Section

At this section compatibility and antibody screening and identification and investigation is tested.



Training Schedule

The training program from 12 May until 2 Jun at Sahlgrenska University Academy at Gothenburg University and Sahlgrenska University Hospital was the following;

Date	Time	Room/Place	Program	Responsible
12-May	9:25		Arrival landvetter airport. Pick up. Afternoon free to rest	Camilla
13- May	11:00		Pick up at Guldhedstorget and introduction	Camilla
14- May			Weekend	
15- May			Weekend	
16- May	9:00-10:00 10:00-12:00 13:00	Blood Bank Blood Bank Blood Bank	Discussion with quality coordinator Discussion with responsible physician Blood Donation at the hospital	Inger Lena Anna Z
17- May	8:00- 16:00	Guldhedsgata	Blood Donor Screening, Virology department	Jenny
18- May	8:00- 16:00	Guldhedsgata	Blood Donor Screening, Virology department	Jenny
19- May	8:00- 16:00	Blood Bank	Blood Donation at Nordstan	Anna Z
20- May	9:00-12:00 13:00-16:00	Blood Bank Blood Bank	Visit to the mobile blood donation unit Blood component	Camilla Pia
21- May			Weekend	
22- May			Weekend	
23- May	8:00- 16:00	Blood Bank	Blood Grouping	Lisa
24- May	8:00- 16:00	Blood Bank	Blood component including quality control	Pia
25- May	8:00- 16:00	Blood Bank	Antibody Investigation	Jafar
26- May	8:00- 16:00	Blood Bank	Pre-transfusion	Jafar
27- May	8:00- 16:00	NAL	Visit to blood bank NAL	Anica
28- May			Weekend	
29- May			Weekend	
30- May	8:00- 16:00	Blood Bank	Preparation panel cells/genomic typing	
31- May	11:00- 13:00	Nordstand	Blood donor recruitment pick up numbers	
01-June	11:00-13:00 17:00		Conclusion Blodomloppet – walk	
02-June	14:30		Departure from landvetter Airport	



Q.C For TTIs:

Sahlgrenska Screening Policy Screening all collected blood units is a mandatory to ensuring 100% screening of blood for the four major Transfusion Transmitted Infections (TTI's) (HBsAg,HCV,HIV,Syphilis) using Chemillumencesmethod at Archetict Instruments.

For the first time donor the policy is to collect a sample from the donor before donation and testing the following (HBsAg,HCV,HIV,Syphilis,Hipatitis Core Ab.,HTLV) then after the results release negative they send a text message to the donor to come and donate a blood.

In addition to the manufacturer's controls provided with the kit, additional internal quality control measures (weak positive sample) they run with each series of tests to ensure acceptable sensitivity of the method.

They receive samples monthly from the EQAS program and they perform the tests and send the results to them.

No series of the tests they validated unless the results of the manufacturer's and additional quality control samples are satisfied.

All reactive results they repeat the test two times after centrifuge the sample and if there is two of the three results are reactive they send the sample to the confirmation at PCR method and any positive results they store the samples for at least 10 years.



Q.C of Blood Grouping

- Q.C of ABO

They work only with approved reagents and QC of procedures recommended by reagent and equipment manufacturer are followed

Before a blood grouping reagent is used, appropriate reactivity with control cells they performed.

The following minimum controls are required for ABO blood grouping tests:

Reagent	Control
Anti-A	A1, A2 & O cells
Anti-B	B & O cells
Anti-AB	A1, A2, B & O cells

The control cells prepared by pooling of 3 - 5 red cell samples of the same blood group.

- Q.C of RhD Grouping

They work only with approved reagents and QC of procedures recommended by reagent and equipment manufacturer are followed.

Before a b/g reagent is used, appropriate reactivity with control red cell samples confirmed. For each series of RhD b/g tests unequivocal appropriate reactions obtained with R1r red cells as a (+ve) control and rr or r1r as a (-ve) control .

- Appropriate reactivity with control red cell samples expressing weak D should also be confirmed regularly during use, although not necessarily with each series of tests.

When the blood grouping is not performed in batches or series the appropriate reactivity of ABO & RhD reagents are checked at least once in the morning of each working day.



Q.C of Blood and Blood Components

RBC concentrate

The responsible person at Blood components section test 1 % of the collected donations for the parameters given below. A minimum of 75% of those donations tested for parameters should meet the specification.

Parameter	Frequency of Test	Specifications
Volume	1%	280 ± 50 ml
Hct	1%	0.50 to 0.70
Hemolysis	1%	< 0.8 %

Fresh Frozen Plasma

1 % of the prepared products should be tested for the parameters given below. A minimum of 75% of those donations tested for parameters should meet the specification.

Parameter	Frequency	Specifications
Volume	1%	200 ± 50 ml
Factor VIIIc	1% Every 3 Months	➤ 0.7 I.U
Residual cells	1 %	Red cells : < 6.0 X 10/L Leucocytes : < 0.1X10/L Platelets : < 50 X 10/L

Pooled Platelet Concentrate

1% of the prepared products tested for the parameters given below. A minimum of 75% of those donations tested for parameters should meet the specification.

Parameter	Frequency of Test	Specifications
Volume	1%	200 - 300 ml
Plt. Count	1%	$\geq 220 \times 10^9$ /unit
pH on day 5	1%	6.4 – 7.4
Residual leucocytes After leucocytes depletion	1 %	$< 0.2 \times 10^6$ / single unit equivalent

All Pooled Platelet products should be free of any microbial so they perform culture for all Pooled Platelet units.



Donor Recruitment:

It is recommended to collect blood from non-remunerated volunteer donors. The aim of using selection guidelines for blood donors has two purposes: firstly, to protect donors from potential harm which may occur as a direct result of the donation process; secondly, to protect recipients of blood transfusion from adverse effects, such as transmission of infectious diseases or other medical conditions and unwanted effects caused by medication taken by the donor.

In Sweden, different activities are being practiced for Blood Donor's recruitment in order to encourage them to donate, such as variety of gifts, text msg., different campaigns with slogans, and also the distinguished Special Annual Marathon [Blodomloppet] which takes place in all Sweden cities , with great support and participation from all sectors of the people.