

2ND ANATOLIAN BLOOD DAYS

25-27 November 2013 / Maritim Pine Beach Resort Hotel / Antalya - Türkiye



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Dear Colleagues,

Turkish Blood Foundation (TBF) initiated annual regional workshop since 2012. Sharing the experience and finding solution alternatives are the main aims of this initiative. There have been numerous training and educational activities for blood bank staff so far by international and national organisations since decades but very limited interest has given on the special training and educational activities on transfusion practice for clinical nurses.

Turkish Blood Foundation has focused on “Bedside Transfusion Safety by Clinical Nurse” since 2008 and performed different activities like evaluating actual curriculums of different Nurse Schools on transfusion practice, special post graduate training programmes for clinical nurses at different training hospitals, surveys about the impressions and ideas of clinical nurses on “Bedside Transfusion Safety by Clinical Nurse”.

Depending on the outcomes of last 5 years efforts Turkish Blood Foundation has decided to choose “Bedside Transfusion Safety by Clinical Nurse” as a topic of Anatolian Blood Days – II and discuss actual situation with the regional and linked countries.

Turkish Blood Foundation believes that this interactive workshop will have an important out comes on actual importance, problems, solutions on “Bedside Transfusion Safety by Clinical Nurse” like Anatolian Blood Days – I. ABD-II will also give a great impact on preparing of curriculum for nurses about Blood Transfusion because there has been very limited number of activities on this topic globally so far.

Prof. Mahmut Bayık
President

2nd Anatolian Blood Days Committee

Scientific Chairs

Dr. Faten Motfah, Egypt
Prof. Mahmut Bayık, Turkey
Dr. N. Nuri Solaz, Turkey
Prof. José Manuel Cardenas, Spain
Dr. Gamal Gabra, UK
Prof. Brian McClelland, UK

Secretary of Anatolian Blood Days (ABD)

Dr. Ramazan Uluhan, Turkey

Venue

Maritim Pine Beach Resort Hotel and Convention Center,
Belek, Antalya- Türkiye

Date

25-27 November 2013

2nd Anatolian Blood Days Program

25 November 2013

09:00 – 09:30	Opening
09:30 – 10:45	Country presentations – 1 Albania Belarus Czech Republic Ghana India
10:45 – 11:00	Coffee break
11:00 – 12:30	Country presentations – 2 Iran Jordan Kosovo Mauritania Oman Pakistan
12:30 – 14:00	Lunch break
14:00 – 15:45	Country presentations – 3 Palestine Qatar Romania Spain Tajikistan Turkey UK
15:45 – 16:00	Coffee break
16:00 – 17:30	General overview on first day presentations

26 November 2013

09:00–10:30	Discussion on essential knowledge of a nurse on Blood Banking & Transfusion – 1
10:30–11:00	Coffee break
11:00–12:30	Discussion on essential knowledge of a nurse on Blood Banking & Transfusion – 2
12:30–14:00	Lunch break
14:00–15:30	Discussion on pre-graduate Blood Banking & Transfusion - Curriculum Model for Nurses -1
15:30–16:00	Coffee break
16:00–17:30	Discussion on pre-graduate Blood Banking & Transfusion - Curriculum Model for Nurses -2
17:30–18:00	Coffee break

27 November 2013

09:00–10:30	General overview on second day presentations
10:30–11:00	Coffee break
11:00–12:30	Preparation of final declaration & Closing

Language: English

NURSE EDUCATION, TRAINING AND ROLE IN BLOOD BANKING AND CLINICAL TRANSFUSION PRACTICE ALBANIAN EXPERIENCE

Irena Seferi, Tatjana Nurka, Arben Metka

Introduction

Right blood, right time, right patient, is the goal of each transfusion service which in order to deliver the product according to this standard needs to implement and continuously control huge number of quality standards. Is beyond any doubt that formation of personnel involved in transfusion chain is one of the most important obligations of each health institute for achieving this goal. An adequate pre and post-graduation formation, followed by accurate continuous training is the key to a complete education and training of nurses, and is cornerstone for safe blood transfusion. Whilst continuous training is a competence of each and every hospital directory and health institution, the complete pre and post-graduation formation needs an active involvement of University and therefore requests for awareness on the importance of capable nurses in blood safety.

Situation

Since, 2005 there is a Faculty of Nurses in Albania that has the following braches of study:

- Nursing
- Laboratory Technician
- Midwives
- Physiotherapy
- Images
- Logopedia

All these branches of study last three years of study (bachelor degree), followed by two years (master degree). Since 2006 Transfusion is a separate subject in the Faculty of Medicine for General Medicine and also in the Faculty of Nurses, for the branches Nursing, Laboratory Technician and Midwives, performed in the part of master degree, whereas during bachelor degree in this branches some concepts of immunohematology are given in the subject of immunology. The whole transfusion program performed for nurses, laboratory technicians and midwives during 5 years of pre-graduation formation are given in the following table:

Table 1: Topics of formation for nurses during pre-graduation formation

Topics	Time (in hours)
Legal and administrative aspects of blood transfusion	2
Donor medical assessment	2
Phlebotomy and blood donation care	2
Donor apheresis	1
Complications and management of blood donation	2
Donor counseling	2
Blood screening tests	2
Blood Grouping	4
Cross match, antibody screening, antigen identification	4
Blood components preparation, storage, transport	4
Transfusion indications, types of transfusion	2
Bedside transfusion and patient care	2
Transfusion complications	4
Management of transfusion complications	2
Hospital blood safety practitioner	2

There is an adequate theoretical instruction during pre-graduation formation for nurses in our country, with topics covering all the transfusion chain, whereas the practical instruction need to be adequately developed by including practices in the transfusion structures. The post-graduate formation of nurses in blood banking and transfusion medicine is inexistent. A big problem for countries trying to implement post-graduation programs in transfusion medicine for doctors as well as for nurses is the fact that EU directives 93/16/EEC, 2001/19/ EC, and 2005/36/EC, the directives of the European Parliament and of the Council on the mutual recognition of professional qualifications of European doctors currently in force, do not include transfusion medicine, blood transfusion or immune hematology at all. Other medical specialties, which like our field, are not common to all member states of the European Union, are listed in the above mentioned directives with the minimum length of training and minimal requirements for the qualifications. Furthermore the above mentioned Directive 2005/36/EC gives a guide with topics for the pre-graduation formation of nurses where transfusion medicine is not part of this guide.

In this situation, we think that our pre-graduation formation must be further expanded with the practical part, whereas a simple post-graduate theoretical and practical instruction with the involvement of transfusion centre (certificating it) has to be developed immediately.

In our country we still lack post-graduation formation for doctors in transfusion medicine. A 4 years program of long-term specialization in transfusion medicine is in the very last steps of approval from the Ministry of Education. Having implemented this program we will manage to have e solid support also for the basic formation not only for the nurses engaged in different parts of transfusion chain but also for nurses that will work within transfusion area.

As far as continuous training is concerned, NBTC has implemented some projects of cooperation with EFS France (National Transfusion Service of France) and with ESTM. The program with EFS is going on since 2006. This program has made possible the visit of French experts in Albania for giving lectures in different important fields of transfusion. They have also supported us for resolving different practical problems concerning preparation of components and quality control of the products. Another big project part of the continuous training program of NBTC has been the triennial project with ESTM financed from the Italian Government. In three years three residential courses and three formation courses have been organized. It has been difficult to involve clinicians in the courses and at the end only few clinicians have participated in all these courses whereas the participation of nurses has been poor. The problem has been that the clinics have considered these courses as courses of the transfusion part without understanding that we are all equal “parts of the same chain”. This is a concept that has to be distributed widely among clinicians.

Furthermore in our country we lack “Guidelines for the Clinical use of blood”. These guidelines are in process of development. A working group made of transfusion specialists and clinicians is working for developing the guidelines, and next year after meetings of consultations these guidelines will be ready for approval from the Ministry of Health. These guidelines will be based on the guidelines of WHO for the clinical use of blood. After approval the guidelines will be the standards of transfusion that will help doctors and nurses in the process of transfusion by improving the clinical use of blood and hopefully patient blood management.

Conclusion

Education of nurses and doctors engaged in transfusion chain remains a challenge for achieving high quality blood transfusion. In our country the only part of education that is completed seems to be the pre-graduation where transfusion is a separate subject in the Faculty of Medicine as well as in the Faculty of Nurses. We must intensify our efforts for full pre and post-graduation formation as well as for full involvement of clinicians and nurses that are engaged in transfusion chain. Each National Transfusion Centre has to intensify efforts in ensuring a complete pre and post graduate formation of nurses with respect to transfusion and then to attend a well-planned program of continuous training. Only in this way it can be strengthened one of the most important parts of blood safety that is competence and knowledge of personnel involved in transfusion chain.

A long-term objective for all of us might be to introduce the transfusion medicine specialization and/or program into the above-mentioned EC directives in order to guarantee quality and facilitate mutual recognition of transfusion medicine qualifications throughout Europe.

* You may add more lines to the above table

THE STRUCTURE AND ACTIVITIES OF BLOOD TRANSFUSION SERVICES IN THE REPUBLIC OF BELARUS

Svirnouskaya E., KHulup H., Novik A.

Minsk, Belarus

In 2012 the Blood Transfusion Services of Belarus celebrated its 80th anniversary. Blood Transfusion Institute was created in Minsk in 1932 and immediately made a start of blood donor recruitment and blood collection. Since 1957 paid donations have been changed for a new form of blood donation organization. It means that the main part of our blood donors instead of being paid have got the following privileges:

- free of charge breakfast and lunch on the day of blood donation;
- two days off.

Due to the introduction of new technologies of blood collection, blood products processing and adequate principles of quality assurance in blood transfusion it becomes obvious the necessity of updating of the criteria in line with increasing knowledge and the improvement of blood donor selection practice for the provision of blood products safety.

Essential changes in blood donor recruitment and retention services are based on the Law of the Republic of Belarus “On Blood and Blood Components Donation” approved in 1995 (the second version in 2010). According to the above-mentioned Law, nationally-coordinated blood donation support operates at different levels:

- Level 1– blood donors are guaranteed safety in the course of performance of their donor functions and compensation in the case of the harmful consequences to their health;
- Level 2 – medical personnel provide blood donation propaganda, donor recruitment organization and is responsible for protection

of the health of blood donors and of blood and blood products recipients;

- Level 3 – the employers are obliged to promote health care institutions in recruitment of donors among working personnel and provide the prospective donors the possibilities for medical examination and fulfillment of their duties. The provision of blood donor privileges guaranteed by the legislation are under the employer’s responsibility as well. In addition, the employers have to ensure space free of charge for mobile blood collection sessions.
- Level 4 – ultimate responsibility for blood and blood components donation organization, adequate financing, building facilities, equipment and consumables supply to health care institutions which operate blood and plasma collection and processing, provision of donor privileges lie with regional authorities;
- Level 5 – the Council of Ministers of the Republic of Belarus enacts effective order of the free of charge food for donors on the day of blood donation, and rate of private money reimbursement for paid donors.

The Blood transfusion services in Belarus includes Republican Scientific and Production Center for Transfusiology and Medical Biotechnologies, 19 regional blood banks and 36 hospital blood banks. The services operates under the supervision and direct control of Ministry of Health Care.

The modern structure of blood transfusion services of Belarus is based on centralization of organization and quality management combined with decentralization of administrative subordination of its institutions. According to this overall strategy Republican Scientific and Production Center for Transfusiology and Medical Biotechnologies is responsible for working out national guidelines and for organizational and methodological supervision of all blood transfusion services institutions. In addition, it is a basic establishment in Transfusion Medicine teaching for Medical Academy of Postgraduate Education.

Regional level of planning and quality control for activities of hospital blood banks as well as for transfusion provision of hospitals is coordinated by regional and city blood banks which are responsible for the local supply of blood components and preparations and immunohematological reagents. Hospital blood banks and transfusion services consulting offices are basic parts of transfusion services. The physician after having specialized training in blood transfusion acts as Head of hospital blood bank or of transfusion services consulting office and has responsibility for the implementation of the effective and safe methods of transfusion therapy in every hospital and for the quality assurance and quality control in blood transfusion as well. Thus, it may be seen that three - level services of blood products processing and provision operates on the principle of feedback mechanism.

The planning of activities of regional and hospital blood banks is carrying out with the purpose to meet the designed needs of hospitals in blood components and products of plasma fractionation taking into account the available basic facilities of blood services institutions integrated into the united system on the principles of inter-institution partnership, redesign and reciprocal supply of raw materials and produced preparations. By decreasing the number of unefficient hospital blood banks (by 53 % over the last decade) we managed to create enlarged and zonal hospital blood banks with productive capacity up to 1000 – 5000 L of donor blood. An adequate stock of red blood cells, fresh frozen plasma and cryoprecipitate for the emergency cases are obligatory for every hospital.

As a result of partnership between regional blood banks responsible for blood products supply to hospitals and to hospital blood banks all hospital needs in blood components are completely satisfied. Every region has facilities for plasma fractionation to produce albumin solutions and hyperimmune globulins (anti-staphylococcus, anti-D immunoglobulins). The great improvement was achieved in hospital supply with albumin produced as 5% and 20% solutions. However, because of regional blood bank outmoded facilities there is no

opportunity to produce intravenous immunoglobulin and blood coagulation factors. With the purpose of manufacturing of safe blood products new development projects providing plasma fractionation using technology of virus inactivation are under consideration.

Nowadays, complete satisfaction of ever increasing hospital needs in blood components has been obtained due to keeping the former adequate level of blood donor recruitment as the cornerstone of blood transfusion service. As has been mentioned above, the legislative policy in the organization of blood donor recruitment was determined by the Law "On Blood and Blood Components Donation". Health care authorities were made responsible for the recruitment of blood donors. In addition, the responsibility for this task was delegated in part to the local executive authorities, to the employers. Over the last 10 years the number of blood donations per thousand inhabitants fluctuates from 38.2 to 40.7 with average blood donation unit of 450 ml.

One of the main principles of safe blood transfusion services activities is self-sufficiency of the country in blood and blood products. For this aim it is necessary to create prerequisites for selection of appropriate number of safe blood donors. Adequate approaches and basic principles of national policy of safe donor blood products provision were outlined and developed. They may be stated as follows:

- legislative support of donor recruitment, blood products collection and transfusion; working out of directive documentation and regulations for safe use of blood products;
- donor selection from donor groups at low risk for transfusion-transmissible infections and evaluation of the selection procedure effectiveness;
- creation of donor blood screening strategy based on the most appropriate and modern screening assays;
- effective and adequate clinical use of blood products, development of programme of providing specialized training of personnel responsible for blood transfusion practice;

- monitoring and evaluation of donor blood clinical use and of quality improvement of medical personnel professional training.

Blood donor recruitment programme in the Republic of Belarus is based on permanent monitoring of donor motivation. Information given by donors in a mandatory standard questionnaire is evidence of an altruistic point of view as a prime incentive for blood donation (60-70%). In other cases blood donors are willing to help their relatives and friends (15%) or the motivation to blood donation arises mainly from the intention to be commercially remunerated (8%).

The most successful recruitment team consists of medical staff from hospitals and outpatient departments and volunteers from variable enterprises. Because recruitment involves professionals as well as volunteers, blood service institutions are key ones in this process as namely they are responsible for recruitment priorities in different types of donors using national and local mass media and launching recruitment drives outside blood service institutions. Lectures and personalized communications are among the available means of donor recruitment as well. As a rule, physician's personal communication at the time of whole blood donation is essential for recruitment of plasma donors.

Regional authorities take an active part in donor recruitment. Formulation of recruitment programme and plans for recruitment sessions of regional blood bank team specialists at enterprises and higher educational establishments are approved by city and district Executive Committees. Moreover, reports on this activity are discussed by top-level local authorities. Such government donor recruitment policy that includes information of employers about terms of donor sessions over a year raises no objection for their part and has the promotional impact on the effective arrangement of work on the "Donor Day" at the enterprises.

In accordance with the national legislation of the Republic of Belarus blood donation may be paid or unpaid. Blood donation is considered

to be voluntary, unpaid if a donor gives blood, plasma or blood cells freely and voluntarily without receiving payment in the form of money. Blood donation is considered voluntary and paid if a donor gives blood for special purpose (immune plasma, plasma or cell components by apheresis). Blood donated for transfusion is unpaid. As a whole, there are 92.2 % unpaid out of total blood donors in Belarus. However, as all blood donors both unpaid and paid have privileges (two days off and breakfast and lunch on the day of donation) special safe blood donor selection system has been developed and practiced in our country as all guidelines are to be living amendable documents.

Males are allowed to donate blood with a frequency not more than 5 times a calendar year, females may give blood not more than 4 times a calendar year and the interval between blood donations is never less than 60 days.

Age limits for blood donors is restricted to the interval of 18 (minimum) and 60 years (maximum). Written consent of parents is required to recruit a donor under 18 years. Donors over 60 may only donate in the exceptional cases with their doctor's consent.

The standard volume of blood to be donated is equal to 450 ± 10 ml. Donors who weigh less than 55 kg cannot donate standard dose of blood.

On every donor acceptance his blood hemoglobin level is estimated. On initial blood donor examination the results of ABO- and Rh-grouping tests are inscribed in his passport. Complete blood count is performed on initial acceptance of donors to blood service establishment and later on once a year.

The carefulness of donor medical examination is under physician's responsibility. He asks about medical history in compliance with the demands of "Donor Questionnaire", evaluates donor health state, his blood pressure and pulse rate, examines his skin, sclera, mucous membrane of oral cavity, carries out more detailed physical examination where necessary paying attention to the detection of

signs of donor blood transmitted diseases (AIDS, syphilis, viral hepatitis, etc.).

The physician comes to conclusion about donor deferral or selection for blood donation taking into account contradictions to blood donation. 12-14 % of potential blood donors are deferred at the stage of medical examination.

Provision of donor blood safety for patients

1. Every unit of donor blood collected is screened for HBsAg (since 1972), for antibodies to *Treponema pallidum* (since 1968), HIV (since 1987) HCV (since 1992), In addition, test for ALT is performed. ABO and Rh (D) grouping and screening for unexpected antibodies are obligatory. The amount of unusable collected blood units over 10 years reduced from 0.38 % to 0.13 % for HBV and from 0.8 % to 0.39 % for HCV.
2. The portion of regular donors increases at the expense of decreasing number of first time donors (by a factor of 2.7 over 10 years). According to our data, about 60 % of positive tests for markers of hepatitis B and C viruses, of HIV and of *Treponema pallidum* fall on first time donors. The amount of first time donors does not exceed 20 % out of total number of blood donors.
3. Directed donations are prohibited in accordance with guidelines of WHO/GPA and the Global Blood Safety Initiative (WHO, 1989). For prevention of transfusion-mediated graft versus host disease it is forbidden to transfuse closely-related unirradiated blood to children in particular.
4. For prevention of transfusion-mediated acute lung injury, blood collected from multiparous women is screened for anti-HLA antibodies. In the absence of HLA testing, plasma of such women is used for fractionation.
5. Fresh frozen plasma for clinical use and fractionation is the subject for quarantine (from 3 to 6 months).

ROLE OF NURSING STAFF IN CLINICAL TRANSFUSION PROCESS IN THE CZECH REPUBLIC

Lenka Walterova

Education of nurses in the Czech Republic has been on the level of secondary school for many decades – i.e. four years of secondary school finished by graduation either as a general nurse or specialized pediatric or obstetric nurse. This education could be followed – after a certain period of employment- by further specialization training for nursing staff in different departments (among other specialization there was also one for nurses working in blood banks and dept. for transfusion medicine).

This system has been changed recently (since 2004) and bachelor degree in nursing or a diploma from higher nursing schools (regular secondary school is required before entering this programme) is now compulsory for all new adepts of nursing.

Within these programmes, there is time allotted to legal and administrative aspect of blood transfusion as well as bases of blood grouping and pre transfusion testing, transfusion indications, bedside transfusion process and transfusion complications.

Specialization in different fields of medicine, including transfusion and blood banking can be now acquired through certified specialization courses. Such a course for nurses in transfusion medicine comprises 75 hours of training (theory and practice). It includes predominantly topics on blood donors' issues, donations, immunohaematology, blood processing, testing and storage but only minimum time is spent for clinical transfusion practice.

The whole system of education is organized under the auspices of Ministry of health – through accredited institutions (Institute for further education of medical personnel, major teaching hospitals, Institute of Haematology and Blood Transfusion etc.)

Responsibility for transfusion of blood components in clinical departments lies predominantly with the physician. Nurses do not have the right to transfuse blood and blood components by themselves. The only exception is specialized nurses in intensive care units (after finishing two years specialization programme) who – at least in theory- do have the right to transfuse blood components. Policy of most hospitals, though, does not allow blood component administration to anyone but physicians.

Each institution administering blood and blood components has a written guideline/ standard operating procedure for ordering, transport and administration of blood as well as identification, monitoring and follow up of the patients. In this process, responsibilities of nursing staff are specified. Transfusion committees in each such institution are strongly recommended and duty to monitor and report adverse reactions lays with the attending physician- these are further analyzed by transfusion medicine specialist usually from the blood bank that has issued the component. Reports are collected on the national level and analyzed yearly before giving the final input to EU level (according to EU Blood Directive).

Responsibilities of nurses in clinical transfusion process

Before the process of transfusion starts, patient must be informed on the reason for and expected benefit of transfusion as well as possible risks and patient consent to transfusion must be obtained in writing where possible.

1. Nurse identifies the patient when taking the sample for the pre-transfusion testing
2. Nurse labels the tube with patient sample- in advance or preferably at the bed side with unique identification of the patient and the health care provider taking the sample

3. Nurse and physician complete of blood ordering form with information of

- Patient identity (nurse),
- Date and time of blood sample withdrawal (nurse),
- Type and amount of blood components being ordered (physician),
- Reason for component order (i.e. Hb level, coagulation disorder, platelet number, active bleeding or preoperative order- (physician)
- Identification of the person taking the sample (nurse)
- Relevant information on previous transfusion and pregnancy history, known irregular antibodies, previous adverse reactions to transfusion (physician).

4. Nurse checks on correct transport of the sample to the laboratory

Upon arrival of blood components to the clinical dept. nurse:

5. Provides correct identification of the patient

6. Checks on necessary vital signs- heart rate, blood pressure, temperature, urine

Further steps are provided by physician and nurse- i.e. 4 eyes check

7. Visual control of delivered blood component – type, amount, expiration date

8. Check on accompanying documentation

9. Bed side blood group check- always done by the physician at the bed side along with final identification of patient

11. -Nurse is responsible for correct administration at a pre set velocity with monitoring of the patient (repeated check on vital signs of the patient). Post transfusion measurement of vital signs and urine- physician is present only at the onset of transfusion and any time if there is a suspicion on possible onset of adverse reaction

12. - Nurse monitors patient after transfusion for possible delayed transfusion reactions. If patient is transfused on outpatient bases, i.e. cannot be monitored for 24 hours post transfusion, he is counseled on the signs of possible adverse reaction

Every step of the process has its importance and deviating from its completion may have deleterious consequences for the patient. Misidentifications of the recipient both at the time of taking the sample as well as at the time of administration are the most common mistakes reported. The nurses thus are periodically trained/re-trained in most of institutions on usually yearly bases to follow all the steps in clinical process to provide safe treatment with blood components.

BEDSIDE TRANSFUSION SAFETY BY CLINICAL NURSES GHANA EXPERIENCE

**Dr. Michael E. Acquah (Haemovigilance and Blood Safety Officer,
National Blood Service of Ghana)**

Background of Ghana

The Republic of Ghana is located in West Africa. The population is 25.5million (2010 Census) distributed across 10 administrative regions. The growth rate is 2.5%, with life expectancy of 64.6 years. Ghana is ranked 135th (globally) and 13th in Africa on the Human Development Index (UNDP, 2013). The economy is classified lower middle income (World Bank, 2013).

Transfusion Services in Ghana

Transfusion services are essentially fragmented. There is little co-ordination or regulation of clinical transfusion across health facilities. Very few hospitals have functioning Hospital Transfusion Committees. Voluntary Non-Remunerated Blood Donation is 40% (2012), with a Blood Collection Index of 0.6/1000 population (2012). The National Blood Service, Ghana (NBSG) currently operates largely in the Greater Accra Region. However some functions, such as in-service training for clinical and laboratory staff involved in transfusion, distribution of clinical guidelines and transfusion policies, and occasional clinical audits are conducted over a more extensive area. Legislation to support the operations of the NBSG towards co-ordinated transfusion services across the country is in final stages of passage.

Nursing Training in Ghana

Nursing training and practice in Ghana is regulated by the Nurses and Midwives Council (NMC) of Ghana. Two categories of nurses are Professional Nurses (General Nurses, Midwives, Community Health Nurses, Mental Health Nurses) and Auxilliary Nurses (Health Assistants). Professional Nurses either hold 3-year diplomas from Nursing Training Colleges or 3-4 year bachelor degrees from universities.

NMC curriculum on transfusion is limited to a few areas: blood groups, setting trolley for transfusion. An expanded scope is tutor-dependent, and may include

- Responsibility of Nurses Before, During, and After Transfusion
- Indications for Blood Transfusion
- Nursing Management of Blood Transfusion Reactions

The NMC licensing exam which is required for all nursing trainees may include questions on transfusion practice. The NBSG is collaborating with the Nursing Council on an ongoing curriculum review. There are no local post-basic training courses in transfusion for nurses.

Transfusion Practice by Clinical Nurses

Nurses are involved in donor care, blood collection from blood bank, setting up and monitoring transfusions, and the management of transfusion reactions. The roles are detailed in the NBSG-issued Clinical Transfusion Guidelines and the National Blood Policy.

There are very few continuous professional programmes targeted at improving transfusion safety by clinical nurses in Ghana. Nurses are typically overworked [nurse-patient ratio of 1:1,240 (2011)] with perceived excessive manual documentation. The NBSG is promoting

the formation of Hospital Transfusion Committees, with dedicated Transfusion Nurses to champion bedside transfusion safety.

Expectations from the Workshop

The NBSG is exploring feasibility of post-graduate training in bedside training for nurses, and also contributing to review of curriculum for basic nursing training. It is hoped that the deliberations and lessons shared at this workshop will help us apply best practices in developing and improving the training and monitoring of transfusion practice by clinical nurses.

EDUCATION OF NURSES IN BLOOD BANKING AND CLINICAL TRANSFUSION PRACTICES: SCENARIO IN INDIA

Dr. N. Choudhury

Additional Director & HOD

Fortis Memorial Research Institute, Delhi (NCR), India

Historical Background

The history of nursing education in India as per the available literature dates back to 250 BC when the first very nursing school was established in Punjab, India. It was the time when only men were allowed to enter into nursing profession. Role of nursing was mainly in war zones where wounded soldiers were supposed to be looked after. Prior to the entry of Ms. Florence Nightingale into this profession, there was no any structured curriculum for nursing education; therefore, she made tremendous efforts to transform the nursing education across the globe. After establishment of nursing school at Saint Thomas Hospital, London, in 1854, she was invited to India to provide suggestions on a system of nursing for hospital in India. It took 5 years after the visit of Nightingale when the first school of nursing was started in the Government sector hospital.

Types of Nursing Education in India

The nursing education in India is regulated by 'Indian Nursing Council'. It is statutory body which that regulates nursing education through prescription, inspection, examination, certification and maintaining its standard for a uniform syllabus at each level of nursing education. There is a regulation in the country called 'Nursing Council Act' (1948) which regulate quality of nursing education in the country.

There are various certified education programs in India which varies from diploma to post-doctoral courses:

Nursing Programs	Training Duration	Examination
Auxiliary Nurse & Midwife	2 years	Nursing Examination Board
General Nursing & Midwifery	3 and 1/2 years	Nursing Examination Board
B. Sc (Basic)	4 years	University
B.Sc (Post Basic)	Regular: 2 yrs Distance: 3 yrs	University
M. Sc.	2 years	University
M. Phil	1 year (Full time) 2 years (part time)	University
Ph D	3-5 years	University

Nursing Course in Transfusion Medicine

There is no special training for nurses in transfusion medicine. However, as per 'Drugs and Cosmetics Act' (which regulates blood banking in India), nurse must be employed in blood bank. The Act has not specified whether the nurse should be diploma or degree holders. There are more than 2700 blood banks (stand alone or hospital based) in India and it is mandatory to employ nurse in whole blood donation and also in apheresis area.

Course Curriculum for Nurses

There is no specific course curriculum for nurses in transfusion medicine in India, neither in pre-graduate or post graduate areas. There are approximately 20 hours of training for students in terms of theory, demonstration and return demonstrations. This is just enough to demonstrate how to collect sample, fill up form and sent

to blood bank for cross-matching. They also get training how to receive blood/ components, transfuse and to manage post transfusion reactions. Nursing training in India does not include any aspect of legal and administrative issues, apheresis (donor, stem cell, therapeutic or any other technical issues related to blood banking. During this training period there is no mandatory blood bank visit or on-site demonstration is done. However, in almost all advance centers in India, various apheresis procedures including stem cell collections are done by nurses. These nurses are trained in service and in few instances they are sent for training in other advanced institutes for skill enhancement and certificate. This institutional certificate is to be produced to regulatory authority when they come for inspection.

What is to be done for improving nursing service for Transfusion Medicine in India?

There is acute shortage of nursing staff in India. There are more than --- nursing colleges in India and about ---- diploma nursing and --- BSc nursing students are passed out from these colleges. However, due to strong private sector healthcare system and ever increasing hospital beds increases demand for trained nurses. Migration of trained nurses to developed and economically better advanced countries also contribute to manpower shortage in India. In this situation of manpower shortage and high paying job in other areas, nursing students are reluctant to join transfusion medicine. Following measure will be required to increase trained nurses for transfusion medicine:

1. Transfusion Medicine to be introduced in basic course curriculum in diploma/ degree nursing in India.
2. The average training of 4-5 hours to be increased from 4-5 hours to about 20 hours.

3. Special training courses in stem cell collection, therapeutic phlebotomy, therapeutic exchange etc. should be introduced in teaching universities.
4. Hemovigilance should be implemented and special training courses should be introduced to manage routine program.
5. Special nursing care should be introduced in government services and also in private sector for better promotion avenue.
6. Regular fresher courses should be available for nurses working in transfusion medicine.
7. In all national and international meeting of transfusion medicine, at least 1-2 sessions should be reserved for transfusion nurses.

BED SIDE TRANSFUSION SAFETY BY CLINICAL NURSES IN IRAN

Dr. Leila Kasraian

Community Medicine Specialist

Assistant Professor

Manager of Education Department of Shiraz BTO

- “ Inappropriate transfusion of blood has been shown to induce potential risks of acute and delay transfusion complications to recipients (confusing sentence, clarify)
- “ Cause the waste of precious community resources
- “ Unnecessarily expose patients to transfusion risks
- “ Reduce the availability of particular blood products for patients who need transfusion support.
- “ Some studies have demonstrated that the morbidity and mortality of patients is increased following blood transfusion.
- “ Preparation of blood components is a costly procedure.
- “ Therefore, knowledge of nurses toward blood transfusion is an extremely important issue.
- “ Some studies in Iran surveyed the knowledge of nurses regarding blood transfusion and showed the basic knowledge of nurses must be improved
- “ In Iran, nursing students did not receive any specific training regarding transfusion medicine during nursing courses.
- “ In hospitals, nurses administer blood and blood products for patients.

The Education of Nurses is Necessary

- A) To improve quality and safety of blood transfusions.
- B) Increased quality of reporting and follow-up of adverse reactions of blood components.
- C) Supporting training programs for nurses, health care workers and blood banking personnel.

- E) Preparing clinical transfusion and hospital practice guidelines.
- F) Training the audit and risk management functions of hospitals in relation to transfusion.

In Iran, blood is voluntarily donated without any financial incentive, and distributed by the Iranian Blood Transfusion Organization to public and private hospitals.

Iranian Ministry of Health has ordered the Iranian Blood Transfusion Organization (IBTO) to implement haemovigilance in all hospitals in Iran to improve patients' safety.

This is the results of related activities from 2009 to 2011.

- “ Centralized national haemovigilance system was implemented in Iran in 2009.
- “ From that time the education of nurses who worked in hospitals was started.
- “ An organized and problem oriented education system can detect all transfusion events.
- “ Reporting of all incidents can prevent similar accidents and also prompt immediate treatment of reaction to increase patient safety.
- “ In Iran exists information consent regarding transfusion medicine and patients become aware of all aspect of transfusion?
- “ Document the consent process, including the patient's acceptance or refusal in patient's files.

Documentation of Informed Consent for Blood Transfusion

- " Explain the blood transfusion procedure.
- " Describe the potential benefits of transfusion.
- " Describe the potential risks of transfusion.
- " Transfusion reaction, including fever, chills, shock, heart failure, death hepatitis.
- " Human immune deficiency virus infection
- " Postoperative wound infection
- " Other blood-borne infections
- " Describe alternatives to transfusion.
- " Describe the potential risks of no transfusion, including unexpected hemorrhage and the risk of death, with respect to the planned procedure.
- " Answer any questions.

Blood order in Iran includes

- " The pt name
- " Date of birth
- " Medical record no
- " The component to prepare or administer
- " Any special required for component(LR ,Irradiation, Washing)
- " The number of unit and volume to be administered
- " The date and time for infusion
- " The flow rate (<4H)
- " Prophylaxis medication before transfusion

The Nurses Education Includes

- " The sample labeling at the patient bedside using at least two identification like name and date of birth.
- " Choosing the acceptable catheter size depend on how quickly the blood needs to be administer.
- " How to read blood order.
- " How to administer blood.

Before Transfusion Educations Includes

- “ Check vital sign before transfusion and after it regularly.
- “ If patient was febrile give antipyretic first then give time to have an effect
- “ Identifies of recipient and correct component.
- “ Check blood unit for impaired labels.
- “ Check Blood type of patients and blood unit.
- “ Expiration date of unit.
- “ Patient identification. Check name on the Blood Transfusion Record and pack tag/label.
- “ Blood product identification.
- “ Check the pack number on the Blood Transfusion Record, pack tag/label and the product. Are they identical?
- “ Blood Group.
- “ Check the blood group (ABO and RhD) of the product on the Blood Transfusion Record (this form reports compatibility), pack tag/label and the product. Do they match?
- “ Check expiry date on the pack.
- “ Check medical orders re product type, special requirements (e.g. irradiation, leucocyte depletion) and administration requirements (e.g. volume, rate).
- “ Complete documentation: sign, date, time the Blood Transfusion Record and file in the patient's medical record.
- “ Check blood product for any signs of leakage, clumps or abnormal color.
- “ Inspection Appearance of unit for hemolysis, clot, color change, or existence of gas in blood units.

Inspect Platelets for Aggregates

- “ Inspect FFP and CRYO for signs of thawing, evidence of cracks in bag, or unusual turbidity in CRYO or FFP (i.e., extreme lipemia)
- “ Appropriate temperature for storage and transporting blood and blood components.

- “ How to regulate appropriate speed of blood unit transfusion according to patient’s condition.
- “ Medication and IV therapy during transfusion.
- “ Using filter for transfusion.
- “ Time limits for Blood Component Infusion
- “ How to prepare Patient
- “ The patient should be ready for transfusion prior to picking up blood from the blood bank, appropriate IV access, written order for transfusion.
- “ For any non-emergency transfusion the patient/parents should have had the benefits/risks of transfusion discussed and an opportunity to have any questions answered.
- “ Consent for transfusion should then be documented in the medical record.
- “ Pre-transfusion check
- “ Safe transfusion requires a final patient identity check at the patient bedside before blood administration.
- “ This is vital to ensure the right blood is given to the right patient.
- “ The pre-transfusion check must be completed before commencing transfusion by two clinical staff, one of whom must then spike and connect the product. The staff members signing the blood transfusion record are indicating that the check has been completed prior to transfusion, and that no discrepancy was identified.
- “ Check Vital signs (temperature, pulse, respirations, blood pressure, oxygen saturations and site observations) should be measured and recorded.
- “ Before the start of each pack of fresh blood product at 15 minutes after commencement of each pack hourly until conclusion at the completion of transfusion
- “ This is a minimum requirement.
- “ More frequent observations particularly in unstable or unconscious patients.

- “ Patients should be observed during the first 15 minutes of transfusion as some life-threatening reactions may occur after the infusion of only a small amount of blood.
- “ Where possible, patients should be informed of possible symptoms of a transfusion reaction and should inform staff immediately if they feel unwell during transfusion.
- “ Importance of Hemovigilance system.
- “ Blood & Blood component preparation.
- “ Blood screening tests.
- “ Infection Adverse transfusion reactions.
- “ Non infection Adverse transfusion reaction.
- “ Management of transfusion complications
- “ Now to fill out the forms and how to report transfusion reactions.
- “ Indication of transfusion of blood and blood products
- “ Legal aspect of blood transfusion.
- “ Pediatric blood transfusion.
- “ Blood transfusion in emergency
- “ Blood transfusion in special patients.
- “ Indication of blood warming
- “ Pre transfusion laboratory tests.
- “ Required criteria for blood donation
- “ In Iran does not have any apparent special training courses concerning transfusion medicine during nursing courses.
- “ With the importance of knowledge about transfusion medicine it seems that the establishment of specific transfusion medicine training programs can improve nurses’ knowledge toward transfusion medicine.
- “ Now we only have post graduate transfusion education in hospitals by blood transfusion organization and health ministry.
- “ All of nurses must participate in these courses for permission of working in hospitals.
- “ Before and after transfusion courses we held some exams.

- “ If they get acceptable score they receive certification.
- “ It has been suggested that a special educational program about transfusion medicine be implanted within the curriculum for nursing students and revised according to any new developments in transfusion medicine.

CRISIS MANAGEMENT - JORDAN

Dr. Karim Yarfes

Acting Director of Directorate of Blood Bank

Chairman of Arab Blood Transfusion Association (ABTA)

Goals of Crisis Management:

- É Reduce, or avoid, losses from hazards.
- É Assure prompt assistance to victims.
- É Achieve rapid and effective recovery.

Crisis Management Cycle:

- É Minimizing the effects of crisis.
- É Planning how to respond.
- É Efforts to minimize the hazards created by a crisis.
- É Recovery – Returning the community to normal.

The Challenges:

The Scope of Problem

- É Sever gun and blast injuries
- É Sudden influx of high number of casualties reaching up to 400 at a time.
- É No family replacement donors.
- É Relatively understaffed .
- É During holydaies & Ramadan .

Adopted Strategies of Actions

- É Increasing the working hours for employees.
- É Organizing frequent blood donation campaigns
- É Civil Society Organization N.G.Os university
- É Rescaled of planned surgical operations.
- É Blood Bank staff on stand.
- É Establishing flexible communication channels with the surgeons.
- É Motivation of the staff.

Adopted Strategies Technical Actions

- É Increasing the number of Refrigerators due to increase inventory stock as a result of the donation campaigns.
- É Activation of the Maximum surgical blood ordering schedule (MSBOS).
- É Training and updating knowledge to other Lab technicians of basic skills of blood banking.

Blood Bank Response to a crisis

- É Ensure appropriate blood products can be located & made available.
- É Identify additional needs.
- É Collection and processing of blood products accordingly.
- É Timely assessment of need for blood products.
- É Extend inventory.
- É Application SOP's related to crisis plan.
- É Blood bank staff should be familiar with the hospital crisis plan.

Blood Bank Response to a Crisis

- É Proper handling of expected increase in voluntary donations.
- É Proper utilization of resources (Personnel, equipment, and supplies) to handle available and urgently needed blood products.
- É Well trained experienced blood bank professionals trained in crisis management practices, available within treating facilities to handle the situation.

Conclusions

- É Crisis in transfusion services can occur at any time.
- É Blood shortage management plans should be customized according to the local situation and type of disaster.
- É "Involvement policy " is an effective strategy.

- É Alternatives are always available if you look for them.
- É Coordination and collaboration are crucial.
- ❖ Jordan is a small country with limited resources, with total population of 6.3 Million.
- ❖ Jordan is located in a region with instability for many years, We had many major crisis is last 10 years:
 1. 2003 during the invasion of Iraq many people came to Jordan about 1.5 Million, some of them still living in Jordan (500000).
 2. 2005 at the capital Amman we had an aggressive attacks to three (3) hotels at the same time, we had more than 500 casualties most of them were in critical condition, they needed urgent surgery with a lot of blood and blood component, More than 400 units of blood and a lot of blood component were used.
 3. 2008-2009 During the aggressive invasion to Gaza strip (Palestine), the Director of Blood Bank (DBB) issued 10500 units of blood and blood components, the daily average collection of blood about 500 units.
 4. From the early 2011 about 30000 patients from Libya came to Jordan for treatment, some of them were war casualties, most of them were in critical condition and needed urgent surgery.
 5. Also during 2011 till now Syrian refugees estimated number is 1.5 million came to Jordan some of them were war casualties and needed urgent treatment.
- É The average monthly blood and blood component issued is about 900 units.
- É There are about 160 thalassemic patients.
- É There are about 50 patients in the haematology department.
- É There are about 25 chronic renal failure patients.
- É Daily surgical patients about 30 patients.

ANATOLIAN BLOOD DAYS

REPORT FROM KOSOVO

H. Sadriu, B. Zhubi

National Blood Transfusion Center of Kosovo

Background

Kosovo blood transfusion service comprises National Blood Transfusion Center of Kosovo (NBTCK) at the top along with seven regional blood transfusion centers attached to regional hospitals. Regional blood centers are linked vertically and horizontally with NBTCK and their native hospitals. NBTCK supervises regional centers in professional aspects, and supplies them with expandable materials. In terms of management and human resources, regional centers are dependent from their native hospitals. In order to standard serology screening for TTI, NBTCK conducts serology screening for all regional centers. Other procedures are conducted at regional centers, accordingly. TTI serologic screening is completed within the same day of blood collection.

National authority for Blood Banking and Transfusion Medicine is Ministry of Health. Kosovo blood transfusion service is regulated according to Law on Blood Transfusion, control of the blood and blood products, which regulates all activities on blood donation, testing, processing, safeguard, transfusion and quality control of the blood and its components. However, in order to harmonize all legal aspects with EU directives, a new law is under development. The new law will be followed with guidelines and SOPs for every step in blood transfusion procedures, according to EU guidelines.

Blood Components

In Kosovo, there are no National Standards for use of blood and blood components. These standards are projected to be set after new law on transfusion has been adopted.

Mostly, Kosovo blood transfusion service is able to provide self-adequacy of safe blood and blood components in a timely manner. Majority of the blood is collected from voluntary, noremunerated blood donors. Partly, when insufficient of blood and blood components, there are family oriented donations, compensating for the later.

Donation and Donor Selection Criteria

NBTCK has its own recruitment program. This program is prepared in the last trimester of the year, for the next year and include schedule for all institutions which are ready to participate in this activity. The main contributors to blood donation are high schools, faculties, security and police forces. In high schools and faculties we find blood donors quite easy. Blood donation promoters go to each classroom and talk shortly about importance of providing sufficient amounts of blood and blood products for treatment of people in need for blood or blood components and answer in questions of students.

Before donation, each potential blood donor fulfills the questionnaire, which is mandatory and has to be signed up. This questionnaire is standard and is in use for whole country.

Hemoglobin screening is in use also before donation for all potential blood donors. It is performed by hemoglobinometer.

Then, blood donors are medically and physically evaluated by physicians. This is very important for us, especially for first time donors.

Fortunately, in Kosovo there are no paid blood donations. Blood donation can be either as voluntary, non-remunerated donation, or as directed donations.

Kosovo established Association of Voluntary Blood Donors, which is a regular member of FIODS/IFBDO. This Organization is not yet as active as we would like. The main problem of function of Association is lack of financial support of it activities. We are sure that Association of Voluntary Blood Donors can have very positive role on promotion of voluntary blood donation.

Among voluntary or oriented blood donors, about 20% are female. In high schools, percentage of female among blood donors is higher than in other institutions. In Kosovo, in 100.000 populations, there is annually 1500 donation (or 1.5%)

Donor aphaeresis is provided at NBTKK only.

Clinical use of the blood

In Transfusion Medicine Service of Kosovo, we don't have National guideline for Transfusion indications nor for transfusion complications. Unfortunately, connection between clinics and Transfusion Medicine is not as good as we would like. We are now preparing National Guideline for Transfusion indication and complications.

Use of whole blood in Kosovo is 1%.

Screening tests

According to the law, the following screening tests are obligatory:

- HBsAg,
- Anti-HCV,
- Anti-HIV 1/2, and
- Syphilis(TPHA)

In Kosovo, there is a National algorithm for donor screening for above test. Standard method for screening of blood donors is ELISA. NAT is in use in National Institute for Public Health (NIPH), from 2010, but not in routine use.

Confirmatory tests for positive results of the screening, we did in NIPH. In emergency, we don't release blood components without doing screening tests.

We do not have regular bacterial detection system for blood components. Bacterial detection is performed on suspicious cases only. Before releasing, we quarantine the plasma. We don't use pathogen inactivation system.

Hemovigilance

In Kosovo, there is no any hemovigilance system at national level. There is a standard form for request and follow up transfusion. Unfortunately, we have serious problems getting feedback results from clinics, even when there is some troubles with used blood or blood components.

There are regulations to set up Hospital Transfusion Committee in Kosovo. In 2002, we have established Hospital Transfusion Committee in University Clinical Center of Kosovo. This Committee has had some meetings, in which we tried to establish Regulations for using the blood and blood components. Clinicians lost interest for this activity and they stopped to continue with participation in this meeting. Now, we have some initiatives to reestablish this Committee in which participants will be representatives from clinics which use more frequently blood and blood components and from Blood Transfusion Service.

Documents

Documents of blood donors are in both forms: computerized and hardcopy. There is yet no software tool to follow up the destiny of the blood or blood components in clinics. However, hardcopy system provides a mean for blood tracking.

Organization of Blood Banks

All activities of Blood Banks and Transfusion Medicine Service are regulated by The Law for Blood Transfusion, Control of the Blood and

Blood Components. This Law was accepted in 2007 by Assembly of Republic of Kosovo.

Government has no control system for new initiatives and blood supply system. All initiatives come from NBTCK.

In NBTCK there is a Department for therapeutic aphaeresis, which is not very active. In terms of therapeutic phlebotomy, such procedures are performed in Clinic of Internal Diseases and NBTCK.

In Department for Immunohematology we take care about specialized patients with: alloantibodies, rare blood groups, multitransfused patients, fetomaternal blood problems and other testing. But, there is no Department for tissue processing and distribution, organ procurement or cord banking. We have a department for Hemophilia care and other chronic clotting disorders at NBTCK. Respective hematology units with in pediatric and internal diseases clinics provide additional care.

Quality Management System

In Kosovo, there is yet not guideline about Blood Banking and Transfusion Medicine. Clinicians use standard blood component request, which is obligatory. But, our hospitals don't have a model for blood ordering schedule.

Education and training of students in Transfusion Medicine in Medical Faculty is realized by a subject of Transfusiology, which previously was in the third year (with preclinical subjects), but now is in the fifth year, in on semester teaching (one h theoretical and two h practical teaching, as a non-obligatory subject of choice) for student of General Medicine and previously Nursery branch of Medical Faculty.

Clinicians have education and training on clinical use of the blood and blood components in duration of one month of their specialization.

Every second year is organized a course for specific training and education program for blood bank staff and on clinical use of the blood and blood components, but no such training is provided for nurses employed in clinics. Every unit of blood and blood

components is registered in computer and has ID as a number and barcode. But hospitals don't have information technology system for monitoring blood from donor to recipients.

There is no official request of QMS running in Kosovo about Blood Banking and Transfusion Medicine. There is no national system for complains and/or component recalls and there is no national system for confirmatory reports, adverse events and reactions.

There is no any system at national level for nonconfirmatory reports, adverse events and reactions.

According to external audit programs, we have had only once a control (from Canada) of testing of Infective diseases transmissible by transfusion of blood and blood components, which happened in 2008. After that, we centralized testing of Infective disease transmissible by transfusion.

Conclusion

On the basis of answers in this questionnaire, it can be concluded that situation of Blood Banking and Blood Transfusion Medicine of Kosovo needs further improvements in different aspects. First of all, in collaboration with Ministry of Health, we have to promote faster preparation of National Regulations and Guidelines according to EU directives and guidelines, which will be a promoter of faster progression not only in administration. It is known that good administration lead to better result in any professional work.

This questionnaire was a good feedback for our current situation, what we have and what we lack in order to improve transfusion medicine at our country.

ANATOLIAN BLOOD DAYS

ABSTRACT FROM MAURITANIA

Mohamed Abdallahi Bollahi

National Blood Center Director Mauritania

1. Introduction

Islamic Republic of Mauritania is situated in Arab Maghreb, in West Africa. Its area is 1030.000 KM² and its population is about 4 million.

- “ Blood transfusion was restricted before creation of CNTS in 2002.
- “ In 2001 adoption of the blood transfusion national policy by virtue of which CNTS has been created.
- “ In 2002: creation of CNTS by decree.

Organization method: Blood transfusion includes a national Center of blood transfusion and 13 regional blood banks.

Blood Donation: Blood Donation has increased, through the period 2004 to 2012, from 6802 donors, including 87 volunteers and 6715 family donors to 16564 donors including 9356 family donors and 3043 volunteer donors.

Systematic test results are:

AgHbs :16,5%

Syphilis :1,48 %

ANtiHIV :0,17%

AntiHCV :0,018%

Conclusion: Transfusion in Mauritania is recent. Its current organization started in 2002 and, before, it was quasi inexistent. Volunteer donors represent 25% and family donors represent 75%. Beside the limited number of donors, we particularly face the high rate of B hepatitis which reduces the number of blood bags that can be used.

**DEPARTMENT OF BLOOD SERVICES
MINISTRY OF HEALTH, SULTANATE OF OMAN
COUNTRY REPORT**

**Dr. Thamina Muhammad Ashraf
Head of Central Blood Bank,
Department of Blood Services, Ministry of Health**

Introduction

Blood Transfusion is a lifesaving intervention that has an essential and integral role in patient management within the health care system. As it is ratified in Seventy-Nine session of WHO in Geneva in 1987, availability of blood and blood components is recognized as one of the most important goals of any health care system around the world. Over the years, many WHO resolutions and recommendations have been passed to stress on importance of the availability of blood and blood components.

Critical to the provision of adequate sustainable supplies of safe blood and blood products, is the development of a structured national blood programme with a blood transfusion service that is well-organized and coordinated at national level.

The Dept. of Blood Services (DBS), started as a small laboratory with basic administrative facilities and have developed into a centrally based institution, coordinating with the regional blood banks and catering the blood needs of both government and private hospitals not only in the Muscat governorate but also for the regions (as and when needed).

The institution has built itself to such a capacity that it offers advice, guidance and training in various aspects of blood banking and transfusion practices to all those concerned.

Mission : Through the generosity of volunteer donors and valued contribution of competent staff, to provide sustainable blood banking and transfusion services for the health care system in the Sultanate.

Vision : To share the precious gift of life, through provision of safe, efficacious and high quality blood, blood products and related transfusion services for the benefit of the nation.

The achievements so far:-

1) Donor Affairs Section

The services has developed itself as a section overseeing the needs not only for the Central Blood Bank only but also for the regions and has successfully worked itself towards building a solid donor database by selfless efforts aimed at donor motivation, recruitment and retention by utilizing the available resources at the maximum. Taking into account, the implementation of WHO recommendation, donor affairs section has become an unique identity as a service provider to the Dept. of Blood Services because of its role in the recruitment and retention of safe Voluntary Non-remunerated Blood donors.

Currently, there is an established donor database that include all types of donors that has proven useful to the services in the supply of blood in case of emergencies. To increase the number of donors and to reach out to the public directly, the Mobile blood Donor Unit was introduced and made fully functional in October 1999. The impact was great as the number of donors increased dramatically.

The number of blood units collected at the Ministry of Health Blood Banks - 2012

Total No. of blood donors	Male	Female	Omani	Non-Omani	Volunteer	Family Replacement	First Time	Repeated
51538	46960	4578	37564	13974	44448	7090	27609	23929

2) Central Blood Bank

Initially the Central Blood Bank used to screen blood and prepare blood components for Royal hospital and Khoula hospital besides its own collection. Royal hospital and Khoula hospital were the collection centres.

After moving to the new premises of Dept. of Blood Services at Bausher, the same practice were carried out till the Ministerial circular No. 3 dated 1st of August 2004 issued from the undersecretary office, and Centralization of blood bank services in the Muscat Region with closing down of collection centres at Khoula hospital and Royal hospital. Central Blood Bank became the only Ministry of Health collection site in the Muscat Governorate. Central Blood Bank managed to achieve the following mile stones:

- Introduction of International Society of Blood Transfusion (ISBT) Labelling system – 1999 (from registration for the year 1999, training, software, hardware and printer sponsored by the WHO). From 2000, the registration fees in paid by the Ministry of Health.
- Establishment of National Reference serology laboratory – 2005.
- Provision of irradiation facilities – 2005 (all platelet concentrates processed at Central Blood Bank are irradiated)
- Establishment of Apheresis section – 2005

- Implementation of Quality control laboratory for quality control for blood and components.
- Provision of blood and blood products to private sector – Blood is issued to all the private hospitals in Muscat Region free of cost as and when required.
- Implementation of screening of blood units for anti-HBc (Antibodies to Hepatitis B core antigen).
- A pilot study to evaluate the cost effectiveness and safety profile of blood units screened by Nucleic Acid Testing technology – 2012, for Hepatitis B, Hepatitis C and HIV with the aim to formulate national policy for reinstatement of blood donors (reactive for any infectious marker).
- Participation in UK National External Quality Assurance Programme (UK NEQAS) for serology workup (blood grouping, antibody screening/identification and compatibility testing).
- Training and teaching programmes for Institute of Health Sciences (IHS) interns as well as Oman Medical Speciality Board (OMSB) post graduate doctors.
- Continuous Medical Education (CME) activities including workshops, on-job training etc.

3) Regional Blood Banks

In 1993, when the Dept. of Blood Services was established as an institution under the Directorate General of Health Affairs, the regional blood banks were added as a section to the Organogram of the Dept. of Blood Services.

The regional blood banks have displayed marked development with selfless efforts and dedication of its own staff. The regional blood banks are capable to meet the blood demands of their respective hospitals with rest of their needs (FFP, Cryoprecipitate - emergency situations) catered by the Central Blood bank. Prior to 1995, the Central Blood Bank was the main supplier of blood and blood components to all the regional blood banks, and in only cases of

emergency the relatives of the patients were asked to donate. During this time, only rapid screening tools were used to screen the donated blood for Hepatitis B and HIV. No HCV testing was done. Such a practice was carried on till 1995, when the regional blood banks became actively operational with the initiation of the following activities at the Central level:

- Appointment of focal points for donor motivation and recruitment.
- To encourage, motivate, recruit and retain voluntary blood donors to build up volunteer donor data base and to completely stop directed donations thus reducing family replacement donors (which was the only practice carried out in the regional blood banks) and introduce mobile blood donation sessions.
- Build up stock of appropriate number of screened blood units and to liaise with neighboring blood banks in case of emergencies.
- Implementation of ELISA screening with abolishment of rapid screening for infectious markers i.e. Hepatitis B, Hepatitis C, Syphilis and HIV
- Implementation of screening of blood units for anti-HBc (Antibodies to Hepatitis B core antigen).
- Various activities such as blood donor felicitation day, marathon, workshops etc. are organized at the regional blood banks throughout the year due to which there is a gradual increase in the number of blood donors as follows:

Quality Control was introduced in the regions in 2001.

4) Quality Assurance Section

The work in the field of quality management started since 1995 by the training of a laboratory technician exclusively in quality management tools, with the belief that quality plays a vital role in the safety and clinical efficacy of blood and blood components processed in any blood bank laboratory. As per WHO recommendation the achievements in quality management was

accepted upon and a section titled Quality Assurance Section was established in the year 2003.

Publications of National Standards and Protocols

The Department of Blood Services has always been involved in setting up standards and protocols for various procedures and practices by printing manuals

- 1) Technical Manual on Blood Banking 1st Edition in 1999, revised 2nd Edition in 2004 and 3rd Edition in process of printing.
- 2) Technical Manual Standard for donor selection 1st Edition in 1999.
- 3) National Donor Selection Guidelines – 2010.
- 4) Appropriate Clinical Use of Blood and Blood Products – 2011.

BEDSIDE TRANSFUSION SAFETY BY CLINICAL NURSE: PAKISTAN CASE

Prof. Hasan Abbas Zaheer
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Government of Pakistan

Education and training is fundamental to every aspect of blood safety and can only be ensured if the capacity building of all levels of professionals involved is addressed including donor organizers, doctors, nurses, medical laboratory technologists and scientists. In many developing countries, the major constraint in providing quality blood services is lack of properly trained human resource as the sector is often not considered professionally very attractive or not accorded due priority within the health care system. Transfusion medicine is often not properly covered at the under graduate medical level or in the nursing curriculum. Donor-care nurses and blood donor organizers or recruiters undergo no preparation during their formal education programmes. Medical laboratory technologists are partially trained in transfusion medicine and generally gain on job experience with little or opportunity of continuing professional education. Creating an enabling environment will help in attracting the bright and committed personals in the field and at the same time improving the performance of the existing workforce. Training and staff development includes workshops, seminars and annual training programmes in addition to inclusion of transfusion medicine modules in the respective curriculum of all types of professionals involved in the vein to vein transfusion chain process.

In Pakistan, the lack of uniformity and standardization in formal and informal education for blood bank staff including the nurses has resulted in a wide variation in quality in the vein-to-vein transfusion chain. The training programs that are currently available in the country are mixed trainings with only a few exceptions. Nursing syllabus does not include specific areas of blood transfusion and invariably gain experience and expertise through on job training and no formal education. It is therefore

critical to standardize nursing diploma and degree courses throughout the country to achieve the goal of safe blood transfusion. Opportunities for continuing education must be made available for nursing staff working in small and remote hospital blood banks.

In 2008, the Government of Pakistan initiated blood safety systems reform in the country with the support of the Federal Republic of Germany. This intervention has begun to take roots, not only in the form of a structural reform (functional separation of regional blood centres and hospital blood banks), but also in the form of development of regulatory (law, blood transfusion authority, policy) and quality reforms (standards, guidelines, SOPs, MIS). The implementation of the operational tools developed require well qualified and trained nursing staff. Through the Safe Blood Transfusion Programme, a network of '*Key Stakeholders*' has been established involving state of the art medical training centers in the country including Aga Khan University, Dow Medical University, Baqai Medical University etc. This networking approach would guide the implementation of blood transfusion system reform in terms of capacity development of the nursing cadre. A demand driven development in the blood transfusion nursing sector of Pakistan, therefore, may not be a very distant reality.

ROLE OF NURSES IN CLINICAL TRANSFUSION PRACTICE IN PALESTINE

Dr. Khalid Younis

Al- Quds University

Palestine is one of the Mediterranean countries and part of the Middle East. Historic Palestine has an area of 28,000 km². At present it is composed of the West Bank (pop. 2.5 mill. and area 5655 km²) and Gaza Strip (pop. 1.5 mill and area 365 km²). Both wings are under Israeli occupation since 1967 to present.

Transfusion services in Palestine: Blood banks are hospital based. No written standard policies or procedures. No hemovigilance system. No national incidents reports. Donation is Voluntary & mostly uses family replacement. People are motivated through lectures & brochures. Components used are RCC, platelet concentrate, FFP, and cryoprecipitate. No apheresis technique is available. Number of units collected in 2012 in the West Bank is about 29,500 units.

There are 4 universities in the West Bank offering BSc in nursing and 2 community colleges offer Diploma in nursing. All nurses after graduation are eligible to transfuse blood and blood components. However, blood transfusion practice is given minimal attention during years of study. There are 3-4 pages only about blood transfusion in the text-book "Medical Surgical for Nursing". Thus, pre-graduation, nurses are given around 5 contact hours about blood grouping, transfusion indication, bedside transfusion and patient care, and transfusion complications or reactions. These lectures are given by nurses and not by blood bank specialists. They are trained on blood transfusion practice during their practical training in hospitals.

BEDSIDE TRANSFUSION SAFETY BY CLINICAL NURSE: QATAR REPORT

Dr. Aysha Almalki

Blood Donor Center

Hamad Medical Corporation

All health care in the **State of Qatar** is provided by **Hamad Medical Corporation** (HMC) - Hospital Group which manages nine hospitals (1750 beds) and operates both the national ambulance service and a home healthcare service.

Clinical practices in blood and blood products in Qatar are considered acceptable and safe. Annually it provides approximately 50,000 transfusions of blood and blood products with very minimal adverse or hazardous incidents.

Education of Nurses at the state of Qatar is provided by University of Calgary based in Qatar. However, currently most of nurses at HMC are expatriates from all over the world where their education is done in their home countries. Thus, Hamad Medical Corporation - Hospitals Group in Qatar have a strict strategy that all nursing staff involved in transfusion of blood and blood components are well trained and are fully comprehensive of HMC corporate policy for “Administration of Blood and Blood Components” and their competency is thoroughly assessed using “ Blood Administration Competency Assessment” check list and that no nursing staff will be allowed to administer Blood & blood products unless they have finished their training and certified as competent.

Also, Laboratory Medicine & Pathology had applied for the accreditation to (CAP) College of American Pathology (CAP) and American Association of Blood bank (AABB). One of the regulatory requirements in those organizations is to review blood transfusion practices and adverse outcomes. Both the policy and the

competency check list have been recently modified to comply with all CAP Check list for the issues related to training and education of personnel involved in blood transfusion. In this regards, a quality transfusion safety officer/ a clinical resources nurse has been appointed to assess and verify compliance of all patient care units with regulatory requirements, accreditation standards by conducting random direct observation of blood and blood product components from releasing of blood product from blood banks, handling of blood products, up to blood administration practice.

A comprehensive blood bank computer system covering both donor centre/processing/marker testing AND patient transfusion service/blood banks has been recently introduced to HMC transfusion services facilities. This system covers the entire country.

At the Bedside (to be implemented soon using the same system): Bedside comparison of patient's ID (bar-coded armband) and barcode of unit as well as capturing the exact time of transfusion.

So it is justified to state that the clinical practices for transfusion of blood and blood products in the state of Qatar are acceptable and safe. There will always be a room for further improvements that can be achieved through more dedication to implement the safest clinical transfusion practices in accordance with the international bench marks and the standards of accreditation bodies such as CAP & AABB.

BEDSIDE TRANSFUSION SAFETY BY CLINICAL NURSE: ROMANIA REPORT

Georgeta HANGANU, MD, PhD

Ploiesti Blood Transfusion Establishment

Romania

Romania is a country with 22 million inhabitants, an EU country that respects transfusion EU legislation. European Directives 2002/98 and 2004/33, 2005/61 and 2005/62, are transposed into Romanian transfusion related legislation. Romanian blood donation is anonymous, voluntary and unpaid.

The law that governs the activities of medical professionals throughout the entire transfusion chain, is law 282/2005 regarding the organization of blood transfusion, blood donation and blood components of human origin, as well as health and safety and quality assurance their therapeutic use.

In Romania there are annually harvested a total of 350.000 units of blood. Almost all are used in Romanian hospitals, less than 3% are rejected for various reasons of non-compliance. Transfusion activity takes place in Romania in 44 transfusion centers coordinated by INHTB, and funded by the government. They harvest, process, test, store and distribute blood products to the hospitals they are allocated to, only where blood units are organized in accordance with current legislation, OMS 1224/2006.

Quality systems are implemented both in transfusion centers and hospital units in accordance with OMS 1132/2007. Network transfusion in Romania is a unitary group that follows the same rules, all establishments performing the same activities, while working together to achieve self-sufficiency and the operation is the same for all centers.

All centers have qualified, trained staff in transfusion medicine. In blood banks there is a personnel which is trained in transfusion centers, according to the OMS 1214/2006, which requires an initial and continuous training specific to the transfusion.

The curricula for nurses in the domain of transfusion are very complex and include many of the topics that would be absolutely necessary for the activity in blood banks. In this curricula there are special programs dedicated to the transfusion activity. No post-graduation courses are strictly dedicated to preparing nurses to work in transfusion centers or hospital blood banks. But employment is preparing nurses in each hospital according to job requirements through professional organizations. Continuous education programs are accredited and certified by the National Centre for Professional Development Bucharest, by the College of Physicians of Romania, Order of Nurses and Midwives in Romania and of the Order Biochemists, Biologists and Chemists in the Health System in Romania

Education programs are supported by accredited trainers in the field of transfusion medicine and conducted by the National Institute of Blood Transfusion, Blood Transfusion Center of Bucharest, regional blood transfusion centers and the country's blood centers. The current legislation, especially after the appliance of the OMS 607/2013 on the authorization of hospital blood banks is imposing initial and continuous training of staff in blood banks by creating programs to update knowledge in transfusion.

Hospital establishment reports directly to the Manager, by law, so the professional training of staff involved in the transfusion is an important task in the overall activity flow of the hospitals, which are required to organize and support this activity.

In Romania, bedside transfusion practice is there are well-established steps by legislation that defines exactly all the procedures to be followed in the correct flow and transfusion process that regulates and clarifies the responsibilities of medical staff by OMS 1224/2005.

A well-organized system of haemovigilance from the hospital to the Ministry of Health, OMS enacted 1228/2006 provides surveillance mechanisms for the entire flow from vein to transfusion, from donor's to the recipient's vein. National guide rationalizes the therapeutic use of human blood and blood components approved by Order no. 1343/2007 is learned and respected by all personnel involved.

In accordance with national legislation and European directives documentation, all activities related to transfusion are described in great detail in known procedures learned and respected by all personnel. Nurses should demonstrate deep knowledge of all procedures in order to be authorized to work in the field of transfusion. A continuing education policy followed by all hospitals providing permanent training for nurses is supported by assessments. Implemented quality systems in hospitals require one complete documentation as to ensure traceability of the transfusion act. The procedures are documented by all staff involved in making transfusion therapy to be effective and beneficial to patients.

In Romania the legal framework for optimal development activity transfusion is assured, providing clear guidelines for the organization and functioning of the transfusion. The medical staff is well trained in this activity, specific equipment are appropriately used in many hospitals, although there is a constant need to continuously improve medical activity and to provide medical benefit to the patient bedside transfusion safety.

PRESENTATION FROM SPAIN

Jose Manuel Cardenas, San Sebastian, Spain

Blood Transfusion in Spain

Spain has a population of 47 million and a surface of 505.000 sqKm. The Country is member of the European Union since 1986. Spain is divided in 17 regions, 15 in the Iberian Peninsula, and 2 in the islands (Balearic and Canaries), each region bearing a considerable autonomy. All the Country has the same legal frame and provisions regarding blood donation and transfusion, all of them transposed from the European legislation. The blood collection, processing and distribution activities are managed by the Public Health Service which is regionally based, and as a consequence each regional authority organizes and manages its own blood service. Although you may find different approaches in the blood management, there are several points in common:

- All the blood collection, processing and distribution is managed as a public health service.
- The entire blood donation is based on a voluntary altruistic blood donor base. There are no paid or replacement donations (from relatives or friends).
- The legal rules are the same for the whole Spain, but in some regions there may exist additional specifications such as anti-HTLV-I testing, anti-HBc testing, or 100% platelet bacteriological testing.

There are 21 blood establishments. Only a few are hospital based (but independent of the hospital management), more than 95% of the collections are based in non-hospital community blood banks belonging to the regional health authority. In 2012 there were 1.770.000 blood donations (either whole blood or apheresis) with an annual level of 3744 / 100.000, varying among regions between 4573 in the Basque Country and 3075 in the Canary Islands.

On the other hand in Spain there are 421 hospital blood banks carrying out compatibility testing and issuing blood for transfusion of their patients. Hospital blood banks receive the needed blood components from the regional blood centre; they do not collect or process blood. As a rule hospital blood banks are integrated within Haematology Units. A haematologist establishes the components needed and their storage in the hospital, the procedures needed for selecting blood, compatibility testing, issuing, transfusion administration, and follow up of the transfused blood. The haematologist also deals with the blood requests and their adequacy, transfusion reactions, haemovigilance and transfusion quality indicators.

Twenty five years ago the situation was very different. There were more than 200 blood banks hospital-based in blood services dealing with both donors and patients. The change towards regional blood centres was slow and progressive starting in medium size regions and finishing in those in which the population was either too sparse or too concentrated (the last one was Madrid).

Nurses and Blood Transfusion

The above considerations may help to understand the situation and role of the nurses in the Spanish blood transfusion system. In the old scheme the nurses used to have a very active role dealing with both donors and patients, for collecting, processing, compatibility testing duties and frequently for blood administration too. In the new era all this has changed a lot. Nursing posts may relate to donors or to patients, but not both. Another big issue is the move of the nurses away from the laboratory. In blood establishments nurses are involved in the collection of blood and sometimes the selection of blood donors, but never anymore in laboratory tasks. Regarding Spanish hospital blood banks the situation is certainly diverse. A few nurses, about 20%, still carry out compatibility testing procedures and transfuse patients in the wards, but in most hospitals the testing

is now performed by technicians. The blood is issued to the wards and transfused by the clinical nurses belonging to the wards, to the emergency room, or to specialized rooms such as dialysis, post-partum, burn-care or others. In the operating room it is the anesthesiologist who usually deals with the administration of blood to the patient. In Spain haemovigilance has always been a field managed by a physician belonging to the hospital Haematology service. Rarely nurses have been involved in the follow up of transfused patients besides their immediate care

Trends

The role of the nurse in the Spanish blood transfusion scheme is not clear. Changes have been too deep and too big. Right now, in most Spanish hospitals the nurses have almost no role other than the ordinary duties related to the administration of blood components in the wards and to the immediate care in case of transfusion reactions. A few Spanish hospitals have highly skilled transfusion teams integrated only by nurses with the assistance and supervision of a Haematologist. These teams carry out compatibility testing, blood administration, systematic follow-up of the transfused patients with checks the day after, etc. They also train other nurses within the hospital and participate actively in the Hospital Transfusion Committee. Probably it will be difficult to spread the model because all around Spain top health managements have a preference for establishing centralized laboratories (and they consider that the blood bank is just another *laboratory*) with laboratory technicians skilled in laboratory testing, everything devoid of clinical issues. However changes may be seen. In almost all the hospital transfusion committees the head nurse is member of the committee, plus another nurse related in some way to the blood bank. In fact hospital blood banks still have a few nurses remaining there since the old times. Their role may be useful linking the blood bank with the clinical transfusion. These nurses are in a very good

position for internal auditing and also for training. In a few cases they are also involved in haemovigilance tasks

Council of Europe. Recommendation Rec (2004)18 of the Committee of Ministers to Member States in Teaching Transfusion Medicine to Nurses

I cannot finish my presentation without mentioning the document quoted above. The Council of Europe (not to be confused with the *European Union*) is an international institution established for collaboration purposes. Several countries represented in these 2nd *Anatolian Blood Days* are member states of the Council of Europe (Turkey and UK since 1949, Spain since 1977, Albania since 1995, and Bosnia since 2002). In 2002 the Council of Europe issued a Recommendation related to the role of nurses in the blood transfusion field. After a few considerations there is a formal recommendation with seven items, followed by a seven pages *explanatory memorandum*: 1) Introduction, 2) Current situation, 3) Elements of nurses training curricula for pre-registration, and for post-registration (establishing two different curricula, one for blood establishments and another for blood bank hospitals), and 4) Methodology

The document can be easily downloaded free. Being an official document in member states, it may be used as a reference text for discussion with the local, regional or national authorities at the time of establishing priorities and methods related to the nurse role in transfusion medicine. In other countries, even if they are not Council of Europe members, it may also be useful as long as it provides formal guidance on the subject.

Conclusion

In Spain important changes have been taking place in the blood transfusion network in the last twenty-five years. All the blood collection and processing has moved from a hospital based service to

regional blood centres, and therefore activities related to blood donors and to patients have been split in two. This has also affected the role of the nurse, in particular within the hospital. Right now compatibility testing is mainly a laboratory technician task while the nurse is solely involved in the administration of transfusion to patients. Only in a few hospitals nurses are involved in the whole process from the selection of the blood component, testing, administration of blood, up to the surveillance of the transfused patient. This situation underscores the possibilities of the nurses. A formal recommendation issued by the Council of Europe on the subject may provide clues for its development.

BLOOD SERVICES AND DONATION IN TAJIKISTAN

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National Scientific Blood Center

Introduction

Blood Service in Tajikistan - a structure, that unites the whole country hospitals (or hospitals subdivisions), whose main activity is the harvesting, processing, storage and safety of blood and blood components. The activities of the Blood Service of Tajikistan in accordance with the Constitution and Laws of the Republic of Tajikistan, Normative Legal Acts of the President and the Government of the Republic of Tajikistan. Blood Service of the Republic of Tajikistan organized to work with donors to obtain blood, testing, as well as work on the separation of blood into components, stored it in the special conditions and transportation to the hospitals.

Structure of blood service in Tajikistan

Blood Service in Tajikistan is represented by the National Scientific Blood Center in Dushanbe city, branches in the regions - 3, in the cities of Khujand, Kurgan-Tube and Kulob offices transfusion medical institutions - 3 and cabinets of transfusion therapy - 73.

National Scientific Blood Center

National Scientific Blood Center (NSBC) is the lead agency of the Ministry of Health of the Republic of Tajikistan, works in the self-financing and cost accounting, and conducts research, clinical, organizational, methodological, industrial and educational activities. Center is a scientific and methodological center of the whole of the blood service of the country, provides organizational and methodological assistance to institutions like the blood service of the republic, and health facilities on donation, collection, processing of

blood products to ensure health facilities from donated blood, sustainable, clinical application and safety. NSBC performs scientific research on issues relevant to the country's safety problems of blood transfusion programs to improve treatment of patients with bleeding, blood technology, improving the quality of blood products, the preparation of the scientific and practical training for the country's health.

Functions of branches NSBCs in the regions of Tajikistan

Branches in the regions also operate in the self-financing and cost accounting, and carry out organizational and methodological assistance to health facilities in the region and provide blood products. It should be noted that the country's health facilities themselves in Panjakent district, Sughd, and Khorog, GBAO at the regional hospital, which are on a budget hospitals.

Legislation

1. Law of the Republic of Tajikistan on 27 December 1993 “On the donation of blood and blood components “ (Bulletin of the Supreme Council of the Republic of Tajikistan , 1994 , № 2 , p. 32 ; Akhbori Majlisi Oli of the Republic of Tajikistan , 1996 , № 3 , art. 48, 1998, № 23 - 24, Art. 332), which had lost its force after the adoption of the Law of the Republic of Tajikistan “on the donation of blood and blood components” № 503 of March 26, 2009 , (Akhbor Majlisi Oli of the Republic of Tajikistan , 2009. , № 3, st.96) ;
2. Order of the Ministry of Health of the Republic of Tajikistan “On measures to prevent complications of blood transfusion, its components, products..” № 570 of 21 October 2005;
3. Concept of Health of the Republic of Tajikistan, Dushanbe, 2002;
4. Strategy of the Republic of Tajikistan to protect public health in the period up to 2010. , Dushanbe, 1997;
5. Quality standards in blood transfusion services, Dushanbe, 2005;
6. The national health strategy of the Republic of Tajikistan for the period 2010 - 2020, Dushanbe, 2010;

7. Program to ensure the safety of the blood in the Republic of Tajikistan for the period 2010 - 2014;
8. The program for the rational clinical use of blood, Dushanbe, 2009.

Donation

Law of the Republic of Tajikistan number 503 of March 26, 2009. "On the donation of blood and blood components" regulates the relations connected with the development of donation of blood and blood components in the Republic of Tajikistan, and ensure the implementation of social, economic, legal and medical measures for the organization of the donor movement and protection of the rights of the donor. According to Art. 2.1. Chapter 1 of the Act , donor blood and its components can be every able-bodied citizen between 18 and 65 years old, passed a medical examination , in which were found in the presence of his body diseases contra donation .

According to the NSBC amount of donations per 1000 population in 2012 is equal to 5. In 2012 NSBC and branches harvested 34,164 units of blood, compared with 2011 growth of blood was (2.76 %). More than 99 % of preserved blood harvested blood centers and the share of defense health facilities is a tiny part. More than 15% of preserved blood in the republic in 2005 harvested defense hospitals. At this point in the processing of blood components defense in the health facilities stopped completely (Table 1).

Tab.1. Donation 2011-2012 years

Category of donors	2011r.	2012r.
Number of paid donors	820	962
Number of donors reserve	7145	8452
Number of plasma donors	518	534
Total number of donors	8483	9948
Total number of donations	23500	25439
Gratuitous donations	15392	17847
Paid donations	4370	7592
Number of plasma donation	9748	8725
Total number of blood-plasma donation	33248	34164
Medical bends	1268	1326

Performance of Blood and blood components

By plasma apheresis in 2012 produced 2,715 liters of plasma are automatic hardware plasma apheresis 1065 liters. The main harvesting of blood components in the republic is made in NSBC more than 50%, at 22% of Sughd, Khatlon region by 25% and GBAO 1% of the total harvested blood. Absolute defect in 2012 by blood-borne infections is 754l 540ml including: hepatitis B - 356l540ml, hepatitis C 184l240ml, HIV 1/2- 75l870ml, Syphilis - 137l880ml. In comparison with 2011 increased by 8%, which means an increase of blood-borne infections. (Table 2).

No	Name		2011	2012
1.	Stored blood	liter	17239,7	17743,1
2.	Processing of stored blood	liter	16420,2	16837,2
3.	Total plasma, including	liter	8602,6	8813,5
4.	Fresh frozen plasma	liter	7124,8	7358
5.	Erythrocyte suspension	liter	-	2243,1
6.	Red cells	liter	5416,3	4587,2
7.	The washed red blood cells	liter	870,8	854,2
8.	Platelet	dose	706	724
9.	Cryoprecipitate	dose	4254	4311
10.	Concentrate native plasma	dose	4254	4311
11.	Defect of preserved blood	liter	893,0	943,2

Financing

Over the past few years thanks to the support of the Ministry of Health of the Republic of Tajikistan from year to year funding of the NSBC in 2006 was allocated 82372 TJS, and in 2012 was allocated 162 589 TJS.

Nurse education

The nurse education in Tajikistan is a one type of pre-graduate education system. There are a several standard medical colleges in Tajikistan, which provide the general medical education programs, including blood banking and transfusion medicine to all the nurses.

The National Scientific Blood Center is providing the post-graduate education program (2 months (312 hours) and 4 months (444 hours) duration) to all the nurses, who work in blood banking and transfusion medicine.

Conclusion

On the basis of NSBC according to the program “Blood safety in the Republic of Tajikistan for 2010-2014”, a centralized blood service for the introduction of a united information service system at the national level and at the regional branches of the blood center in Khujand , Kurgan -Tube and Kulob. Also established a national register of donors of blood and blood components on the basis of NSBC and the data exchange system for donors, individuals, extracted from blood donation, blood services between the organizations of the republic and adjacent services, which would eliminate the possibility of participating in the donation of persons at risk, to ensure strict accounting and control of all donations of blood and blood components to implement an effective inventory management system and accounting components of the blood that will ensure the availability and efficiency in the provision of transfusion assistance throughout the Republic of Tajikistan. All harvested blood in blood centers of the country are 100 % tested.

Since 2009, across the country to hold the World Blood Donor Day, celebrated around the world on June 14. These activities helped to improve blood transfusion services, increase blood transfusion importance in modern medicine, raise the profile of organ donation as the basis of the blood service.

NURSE EDUCATION, TRAINING AND ROLE IN BLOOD BANKING AND CLINICAL TRANSFUSION PRACTICE in TURKEY

N. Nuri Solaz M.D. M.Sc.

There are 3 different education programs for nurses in Turkey. Those are listed below;

- 1) License degree; 4 years education after middle education
- 2) Pre -license degree; 2 years education after middle education
- 3) High school degree; 4 years after VIII. Grade

24 High Schools for Nurses and 91 Nursing Schools (both license and pre-license Nurse Schools) are actually present in Turkey. All those Nursing Schools have similar curriculum on Blood Banking and Transfusion Medicine.

List of the topics and total dedicated time on Blood Banking and Transfusion Medicine at Nursing High School are listed below;

At I. Grade in 50 minutes

- a) Blood groups
- b) Definition of transfusion
- c) Transfusion indications
- d) Transfusion types (direct / exchange / autolog)
- e) Preparation / storage / transportation of blood components
- f) Material and equipment for blood transfusion
- g) Transfusion steps
- h) Transfusion complications
- i) Patient care at transfusion complication

At II. Grade in 30 minutes

- a) Definition of transfusion
- b) Transfusion types (direct / exchange / autolog)
- c) Donor specifications
- d) Transfusion complications
- e) Patient care at transfusion complication

List of the topics and total dedicated time on Blood Banking and Transfusion Medicine Nursing Schools (pre-license and license education) are listed below;

At I. Grade in 100 - 150 minutes

- a) Blood groups
- b) Definition of transfusion
- c) Transfusion indications
- d) Transfusion types (direct / exchange / autolog)
- e) Preparation / storage / transportation of blood components
- f) Material and equipment for blood transfusion
- g) Transfusion steps
- h) Transfusion complications
- i) Patient care at transfusion complication

At II. Grade in 30 - 50 minutes

- a) Definition of transfusion
- b) Definition of apheresis and types of apheresis
- c) Purpose of and goal of transfusion
- d) Preparation of blood components
- e) Identification of the patient before transfusion: medical history and ID check
- f) Patient training
- g) Transfusion types (direct / exchange / autolog)
- h) Donor specifications
- i) Transfusion complications
- j) Patient care at transfusion complication

All licensed nurses are legally eligible transfusing blood to the patient depending on the physician's order without any specific post graduate training. There is no special post graduate training and academic program for licensed nurses on transfusion practice.

Licensed nurse has to have a special certificate by Ministry of Health if she will work as a phlebotomist or laboratory technician at blood center since 2001. This is a 2 months residential course for the nurses both on lectures and practice.

Depending on very limited number of surveys and commonly held-belief on the "level of Blood Banking and Transfusion Information of Clinical Nurses" is not satisfactory. The pre-graduate curriculum on Blood Banking and Transfusion should be evaluated and improved. Post graduate certificate programs will also be efficacious to improve the quality of transfusion practice by clinical nurses. The appropriate level of transfusion knowledge of the clinical nurse should be discussed and defined and curriculum of the training should be based on this result.

QUALITY IN CLINICAL TRANSFUSION: HOW CAN NURSES INFLUENCE PRACTICE?

Elizabeth Pirie

**Scottish National Blood Transfusion Service,
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Blood transfusion nursing covers many aspects of donor and patient care including whole blood collection, donor and therapeutic apheresis, tissue banking and in the last decade hospital based transfusion practice. The UK Serious Hazards of Transfusion (SHOT) scheme however has demonstrated that the main cause of morbidity and mortality in patients receiving a transfusion is caused by errors in practice. Nurses are integral to the transfusion process; they are involved in every stage of the transfusion process from, informing the patient, assisting in the decision to transfuse, taking the blood sample for pre-transfusion testing, collecting the blood component from the Blood Bank or satellite refrigerator, undertaking the pre-administration checks, administering the component, monitoring the patient during the transfusion episode to managing any suspected transfusion reaction or event.

In the UK there has been increasing emphasis on the necessity to deliver services around the needs of patients, and nursing roles are seen as key to the delivery of this objective. High quality person-centred care however, should be based on sound evidence and not custom or ritual. In transfusion however, surprisingly there is a paucity of research evidence and as a result practice is often based on clinical guidelines and expertise.

From our experience in Scotland there is no single intervention or magic bullet that will reduce or minimize the risk to patients. This talk will focus on the merits and challenges of establishing a national education and audit programme and the facilitation of national

guidelines and clinical standards. By engaging with clinical and blood service colleagues we have made a positive impact on the standard of transfusion care patients receive.



**Turkish
Blood Foundation**



**Blood Banks and
Transfusion Society of Turkey**

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