5TH ANATOLIAN BLOOD DAYS

31 March-02 April 2016 Maritim Pine Beach Resort Hotel, Belek – Antalya, TURKEY

TURKISH BLOOD FOUNDATION

BLOOD BANKS & TRANSFUSION SOCIETY OF TURKEY

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Dear Colleagues,

Turkish Blood Foundation (TBF) has been organizing an international annual workshop since 2012 under the name of "Anatolian Blood Days" (ABD) to explore areas of Blood Banking and Transfusion Medicine (BB&TM) that are not commonly discussed in blood transfusion circles and yet crucial to the quality, safety and adequate supply of blood and components. Sharing the experience and finding solution alternatives are the main goals of this initiative.

Representatives of the countries where Transfusion Institute exists as well as countries where it does not exist have been invited. Discussions on the functions, organizational structure of the Transfusion Institute will be held to emphasize the positive impact of the Transfusion Institute on BB&TM by demonstrating clear evidence on the issue. Discussions will also expose the functional differences of the Transfusion Institute and results of those differences on the quality of BB&TM services between the participant countries. Negative impact of the absence of the Transfusion Institute will also be discussed

Turkish Blood Foundation believes that this interactive international workshop will have important out comes on "Importance of the Transfusion Institute" by providing clear evidence on the issue.

Sincerely yours;
Prof. Mahmut Bayık
President

5th Anatolian Blood Days Committee

Scientific Chairs

Prof. Mahmut Bayık, Turkey
Prof. José Manuel Cardenas, Spain
Dr. Mario Chin, Portugal
Dr. Gamal Gabra, UK
Prof. Brian McClelland, UK
Dr. Faten Moftah, Egypt
Dr. N. Nuri Solaz, Turkey
Dr. Shigeru Takamoto, Japan

General Secretary

Dr. Ramazan Uluhan, Turkey

Venue

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

Date

31 March – 02 April 2016

5th Anatolian Blood Days Program

31 March 2016

09:00 – 09:45	**Opening**
09:45 – 10:30	Country presentations – 1 Albania Bosnia & Herzegovina Bulgaria
10:30 – 11:00	**Coffee break**
11:00 – 12:30	Country presentations – 2 Egypt Germany India
12:30 – 14:00	**Lunch break**
14:00 – 15:30	Country presentations – 3 Iran Italy Kosovo
15:30 – 16:00	**Coffee break**
16:00 – 17:30	Country presentations – 4 Lithuania Macedonia Oman
17:30 – 18:00	**Coffee break**

18:00 – 19:00 Country presentations – 5
Romania
Slovenia
Spain

01 April 2016

09.00 – 10:30 Country presentations – 6
Sri Lanka
Tajikistan
Turkey
United Kingdom

10:30 – 11:00 **Coffee break**
11:00 – 12:30 General Discussion – 1
12:30 – 14:00 **Lunch break**
14:00 – 15:30 General Discussion – 2
15:30 – 16:00 **Coffee break**
16:00 – 17:30 General Discussion – 3
20:30 **President Dinner**

02 April 2016

09:00 – 10:45 Discussion on declaration
10:45 – 11:15 **Coffee break**
11:15 – 12:30 Discussion on declaration
12:30 – 14:00 **Lunch break**

Language: English

THE ORGANIZATION OF TRANSFUSION SERVICE IN ALBANIA THE ADVANTAGES OF TRANSFUSION INSTITUTE

Irena Seferi, Violica Spahiu, Albania

Transfusion service in Albania consists of 32 hospital blood banks (near each hospital) and NBTC Tirana that is responsible Institution for transfusion in our country. We collect about 30 000 donations that is 10 donations/1000 inhabitants. NBTC Tirana is founded in 1952 and it's a state owned Institute. Since its foundation the main role of this Institute was to control transfusion service at national level. The responsibilities of NBTC Tirana since 2007 are designed by the Law 9739 date 21.05.2007 "On the organization of transfusion service in the Republic of Albania". NBTC according to this Law is responsible Institution for sufficiency, planning, developing, updating, distributing, implementing and controlling the implementation of all legal and regulatory framework at national level. The functions of our Institute are:

- National testing center for infectious agents.
- Regional processing center
- National reference center for laboratory services
- Education and training
- Blood collection and supply
- Responsible body for developing and launching national policies in the field of transfusion
- Responsible body for developing and controlling the implementation of all legal and regulatory framework in the field of transfusion.
- Responsible Institution for the central procurement of all consumables at national level.

WHO in the AIDE-MEMOIRE, for Ministries of Health "Developing a National Blood System" recommends:

The ministry of health (MoH) should provide effective leadership and governance in developing a national blood system that is fully integrated into the health-care system. Essential functions of a national blood system include policy formulation and standard setting, strategic and operational planning, provision of resources and national coordination and management to ensure an adequate supply of blood and blood products and safe clinical transfusion.

The responsible body that can manage to coordinate all these activities at national level in the best way is NBTC. Therefore for implementing a national blood system as recommended by WHO it is essential to have a national Institute caring for this coordination.

There are many advantages of having a National Transfusion Institute:

Standardization of procedures all over the country

Policy formulation, legal and regulatory framework development and control, SOP-s, better quality management and control, error management, viral look back, transfusion protocols.

Centralization

The existence of a National Institute facilitates the centralization of services. Centralization leads to automation which decreases staff and increases productivity.

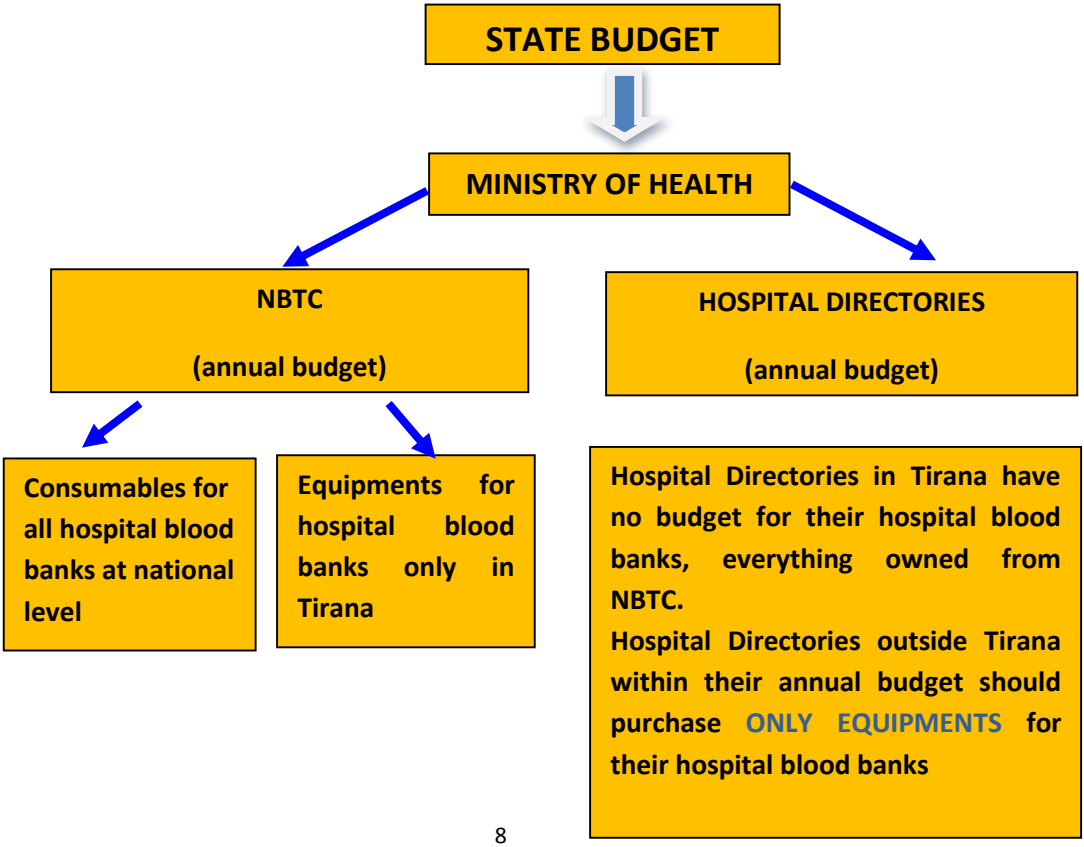
Consolidation

Responsible purchasing of consumables, better blood components inventory management, better consumables inventory management,

better management of transportation costs, better utilization of blood components.

According to our opinion, one of the main ADVANTAGES of a National Institute is the separated budget dedicated to transfusion. If transfusion has a budget within a hospital, hardly becomes a priority within the hospital and will lack in some cases essential consumables and equipments specially in resource limited countries. We bring here below an example from our country how the organization of purchasing affects the supply of transfusion structure with essential equipments.

The organization of purchase in our country is as following:



As it is shown in the figure in our country, NBTC Tirana performs the central procurement of all consumables at national level **BUT** not the procurement of equipments for hospital blood banks outside Tirana. In fact, blood banks outside Tirana **NEVER** lack essential consumables and all of them are purchased according to the ***highest standards of quality decided from transfusion specialists at NBTC Tirana.*** But, hospital blood banks outside Tirana lack essential equipments such as centrifuges, incubators, sealers, mixers etc. Furthermore refrigerators are never purchased from the hospitals at the requested quality for blood storage. They mostly purchase food refrigerators for blood storage. In our country, but also in other countries transfusion hardly becomes a priority within the hospital and that's the reason why in these blood banks outside Tirana we either lack essential equipment, or we have equipments not according to requested standards of quality, thing that never happens in Tirana where National Institute is responsible for purchasing the equipments for all hospital blood banks. We are continuously asking to change this organization of procurement but still we have not managed to centralize also the procurement of equipments for hospital blood banks outside Tirana. ***This is only one example, which demonstrates one of the main ADVANTAGES of a National Institute that is the separated budget dedicated to transfusion.***

One of the disadvantages of the existence of a National Institute is the lack of face to face contact with clinicians and lost of clinical responsibilities for blood banks. In our country, where NBTC is responsible Institution for all blood banks at national level, all staff working at hospital blood banks is accountable to NBTC. This makes possible for us to keep the contact with the clinics and to better manage the clinical procedures. But of course this kind of organization this full centralization and

consolidation of services within NBTC, is difficult to be achieved for big countries.

Conclusion

The implementation of a national plan for transfusion as recommended from WHO is much easier when a National Institute is in place. According to our experience, there is much more control of the system and there are much more advantages in having a National Institute and a centralized service, than having a hospital based blood bank system. Furthermore full centralization and full ownership of transfusion service by a National Institute has several benefits, but is difficult to be implemented in big countries.

IMPORTANCE OF TRANSFUSION INSTITUTE BLOOD TRANSFUSION INSTITUTE OF FEDERATION of BOSNIA & HERZEGOVINA - SARAJEVO

Dr. Jasminka Kurilić, Bosnia & Herzegovina

1. INTRODUCTION

Bosnia and Herzegovina proclaimed in 1992. It is consists of three parts: Federation of Bosnia and Herzegovina, Republic of Srpska and Brcko District. According to the international estimation from 2006, the population of BH is 4.498.976.

Transfusion in B&H is also divided at three parts: Federation of Bosnia and Herzegovina, Republic of Srpska and Brcko District. BH collects between 65,000 and 70,000 blood units annually.
There is no nationally coordinated activity planning and organization of work within the transfusion activity at the state level.
Different levels of organizing and equipment of transfusion institutions, centers and cabinets, working conditions, inequality in range and complexity of activities are some of the characteristics of current transfusion service in BH.
B&H, as a member of WHO and European Council accepted and gave priority and complete support to the implementation of coordinated and sustainable programme for blood with proper regulatory systems, in accordance with the WHO, Directives 2002, 2004 and 2005 of the EU and European Council. BH has set the direction of development of transfusion service in accordance with the concept of obtaining adequate quantities of safe blood and European standards.

FEDERATION of BH

The national authority for Blood Banking and Transfusion Medicine Service in F BH is Ministry of Health.

According to the statistics of the MoH, the number of citizens in Federation of BH is approximately 2 900 000, and about 54 000 blood units is collected annually. Approximate percentage of blood donors is 1,8%. In order to meet the needs for blood and blood products, Federation of BH has developed blood donation system without the help of Federation Red Cross.

The need for transfusion treatment in Federation of BH is covered by the Institute for transfusion medicine (the biggest and best-equipped transfusion institution), four transfusion centers and eleven hospital transfusion units.

2. SITUATION ANALYSIS

Blood donation, blood supply, blood screening in F of BH

- With 18 donations/1000 citizens, F of BH has sufficient blood components.
- Transusion service collects a total of approximately 42 000 blood units per year and produces about 60000 blood components units.
- 5%-80% of collected blood units are transfused as whole blood, whereas plasma is separated from the remaining blood units.
- Leucodepletion is performed in aproximately of 10% of red cells.
- All collected plasma is only for transfusion not for frationation.
- Bacterial inactivation is not performed.

- NAT donor testing of hepatitis B and C , and HIV infecion has been performed in 2015 only in one place (Instiute for transfusion of medicine of F of BH)

I. LAW ON HEALTHCARE PROTECTION (2010);

In acordance with the Law, Blood Transfusion Institute of F B&H forms the doctrine and prepares regulations in accordance with application with standards for collecting blood and blood products, processing, storage, distribution, delivery issue of blood products and medicaments from blood and their clinical application , practices quality control of work, reagents and products in transfusion medicine.

II. LAW ON BLOOD AND BLOOD PRODUCTS (2010)

The new blood law (Law on Blood and Blood Products, published in 2010) describes a decentralized system composed of regional blood centers, transfusion centers and donation centers as blood establishments.

The law on blood and blood ingredients (2010) harmonizes the legal regulative in F of BH within the transfusion area with the directives of EU. This law regulates the organization of transfusion activities, conditions and quality standards, safety and monitoring in collecting, testing, processing, storing, distribution, issuing and use of human blood and human ingredients within Federation of BH.

It was expected to contribute primarily to the institutional capacity of the Ministry of Health to regulate, supervise, inspect and audit blood banking and transfusion system in the Federation.

Requirements for donation of blood and blood components, procurement and testing process of tissue and cells as well as preservation, storage and distribution, traceability of tissue and cells

1. Regulation of closer space condition, medically-technical equipment and professional staff, that transfusion center and transfusion department must meet (number 29/11);
2. Regulation on the System of the Traceability of Blood and Blood components and Monitoring of Serious Adverse Events and Serious Adverse Reactions (number 78/11). According to this regulation, Healthcare institutions, using transfusion treatment are obliged to establish systematic reporting of serious adverse events and serious adverse reactions associated with the quality and safety of blood, blood products and blood donors, and to notify any severe adverse reaction/event. These data than forwarded by ITMFoBH to MoH in this system , reporting is obligatory, however, as a network of operative connections among clinical departments, hospital blood banks, blood establishment and federal authorities is still lacking. Although a standardized reporting form has been defined, as consensus on definitions and interpretation of particular reactions/events has not been achieved, they are not systematically analyzed, and active training appears to be warranted. This surveillance also depends on the hospital transfusion medicine specialists' active participation in hospital committees for transfusion treatment. These activities will be upgraded from year to year.

The purpose of the Law and regulations are to ensure effective implementation of the EU legislation in BH.

III. ORGANIZATION OF TRANSFUSION SERVICES

1. Blood Transfusion Institute of FBIH

Federal Blood Transfusion Institute is a healthcare institution, founded by the Federation of BiH, in accordance with the regulations governing the protection of health. Federal Institute for Blood Transfusion exists for longer than 60 years, owned by the Federal Government. It is functioning under control of Federal Ministry of Health. There is no national guidelines of blood banking and transfusion in F BH
In addition to tasks performed on the basis of legislation that regulates health care, the Institute performs the following tasks:

- Promotes voluntary blood donation,
- Blood collecting, testing, processing, storage and distribution; All blood donors are voluntary, non-remunerated donors
- Reference center for laboratory services - Immunohematology laboratories are the best choice especially when patient needs cannot be met by routine testing. While our lab is a valuable resource for routine needs, we excel and antibody testing and providing compatible blood products for patients with serological problems who are in need of complicated transfusion, We are successful because we:
- type extensive antigens, including those that are difficult to find
- have more experience testing blood for antibodies than most other labs
- our team of experts is available 24/7 as they can provide themselves -day turnaround within a three-hours
- driving distance of labs and the Federation of Bosnia and Herzegovina.

- education & training organizes and conducts ongoing training of personnel in the field of transfusion medicine,
- Research & Development activities in transfusion medicine,
- Supervises the rationality / justification of the use of blood and blood components,
- Monitors and analyzes the effects of transfusion treatment,
- Apheresis collection of platelets. Total number of platelets aphaeresis prepared in 2015 is 420. It was performed solely in the Federal Institute for transfusion of medicine.
- Apheresis collection of stem cells from autologous donors for transplantation; Cellular therapy product process control, storage (-196C), transportation and shipping,
- Blood collection for autologous transfusion,
- Examination of homeostasis disorders,
- Histocompatibility testing for: renal transplantation, for hematopoietic stem cells related and unrelated transplantations, for HLA alleles and antigens, serological typing HLA class I and II, antibody screening and cross matching, typing for a single antigen of disease association;
- Keep records and documentation in accordance with the provisions of this law,
- Establishes and maintains a single information system data in accordance with the Law,
- Keeps an unique register of donors who are temporarily or permanently excluded because they have had a contagious disease, the donor whose blood tests proved the presence of infectious agents, the donor whose blood in the transfusion-caused disease patients and health rare blood groups, as well as a unique register of patients hemophilia,

- Confirmation test is performed only in the Federal Institute for transfusion of medicine
- NAT donor testing of hepatitis B and C , and HIV infecion has been performed in 2015 only in one place (Instiute for transfusion of medicine of F of BH)
- Has unique register of serious adverse events and serious adverse reactions,
- Cooperates with international organizations, associations and related transfusion institutions in Bosnia and Herzegovina and in other countries,
- Other duties in accordance with law and founding act.

2) Blood Center

Transfusion center is part of the public health hospitals. It performs the following functions:

• Blood collecting, testing, processing, storage and distribution of blood components,
• Laboratory testing in the field of transfusion medicine,
• Supervises the rationality / justification of the use of blood and blood components
• Monitoring and analyzes the effects of transfusion treatment,
• Donor and therapeutic apheresis procedures,
• Collects blood for autologous transfusion,
• Examines bleeding disorders,
• Keeps records and documentation in accordance with the provisions of the law,
• Delivers data to the Federal Institute for unique registers
• Promotes voluntary blood donation,

• Training in transfusion medicine in accordance with the regulation for health care,
• Other tasks for which it has permission from the Minister.

3) **Department of Transfusion**. It is a part of the health institution hospital health care, which performs the following functions:

• Requisition of blood and blood components from the Federal Institute or transfusion centers,
• Blood storage and distribution
• Pre-transfusion testing,
• Keeping records and documentation in accordance with the provisions of the law,
• Monitors the effects of blood transfusions and blood components,
• Participates in the program of autologous transfusion,
• Other tasks in accordance with the Law.

Conclusion

Employees of the Blood Transfusion Institute of F B&H work together to save lives. Each of our talented team members plays an important role in our mission to secure a safe and sufficient blood supply and deliver excellence in transfusion medicine. Compatible blood and fast turn-around aren't the only benefit we offer our customers. Our transfusion medicine specialists use their 20 years clinical experience to help develop transfusion strategies for patients. Their expertise coupled with knowledge about the patient helps to ensure safe and beneficial transfusions.

Mission

To provide best in class blood products and clinical services to meet the needs of the healthcare community, patients and our donors through advanced transfusion medicine practices

Vision

To be premier provider of blood transfusion practices that ensure the highest quality products and services, operating efficiencies, donor satisfaction and improved patient care resulting in the achievement our Mission.

BLOOD TRANSFUSION SYSTEM IN BULGARIA

Nikolay Andreev[1], Nikolay Nikolov[1], Vasko Kadzarov[1], Rumen Popov[2], Marieta Kapadzha[2]

[1] *National Center of Transfusion Hematology (NCTH)*
[2] *Military Medical Academy (MMA) Blood Transfusion Center*

Establishment of the transfusion system

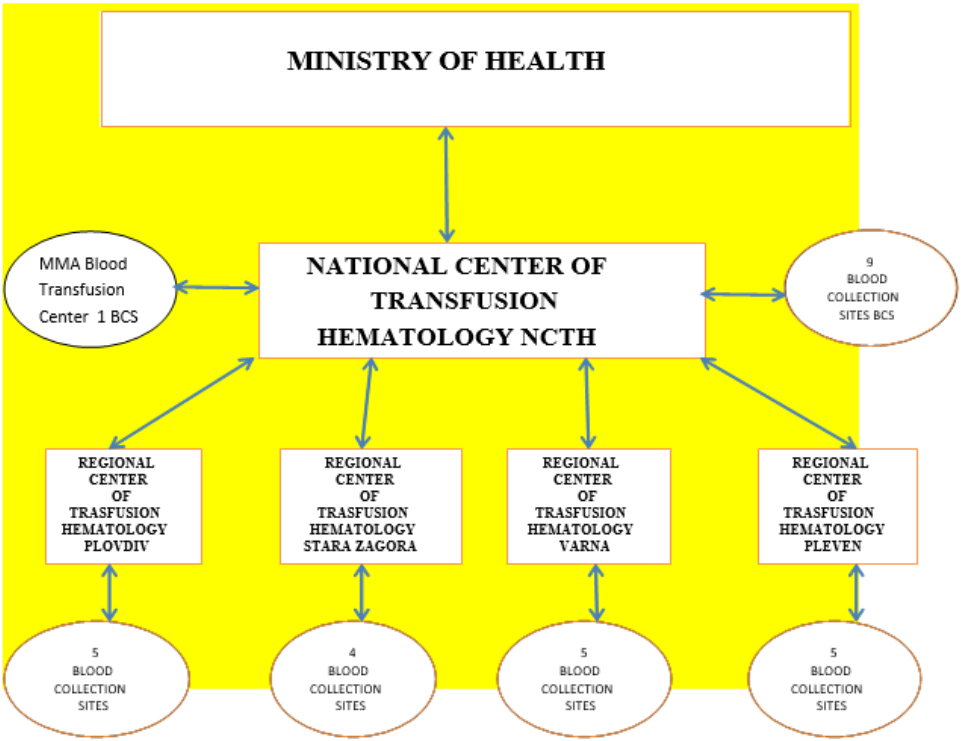
Blood Banking in Bulgaria dates from 1958, when the principle of voluntary, unpaid, self-motivated donation of blood was promoted for the first time at organized Blood Collection Donor Campaigns. The National Research Institute for Hematology and Transfusion was opened in the same year in Sofia. The nowadays National Center of Transfusion Hematology (NCTH) was established in 1996 as an institution submitted directly to the Ministry of Health. Since 2000 Transfusion Medicine in Bulgaria was centralized in NCTH and the other 4 Regional Centers of Transfusion Hematology situated in the major five Medical University Hospital cities in the country. All these five transfusion centers were provided according to a World Bank healthcare development project with contemporary laboratory and medical equipment and set up in suitable establishments in order to meet the requirements for GMP, GLP, and so to ensure the safety at every level in the transfusion chain. This was the approximate time, at the dawn of the century that a completely new standard for transfusiology was imposed to the medical system in Bulgaria. Following the example of some other European countries, Bulgaria also included “Transfusion Hematology” as a separate branch for postgraduate specialization of the medical doctors. Postgraduate education in “Transfusion Hematology” in Bulgaria includes 5 modules

with totally 370 tutorial and 675 practical classes and continues for 4 years followed by a state examination.

Since the beginning of the EU membership of Bulgaria in 2007, together with the national medical standard for transfusion medicine began a process of compliance to the EU and COE directives. **Blood Safety**, **Self-Sufficiency** and **Quality Management** lie down in the basis of our contemporary Blood Banking.

Nowadays, the blood processing and diagnostics (immunohematological and microbiological testing) of the donated blood is centralized in the five major centers by the coordination of the NCTH, while the collection of blood from donors is performed in the upper, as well as, in the 23 existing hospital blood banks with a status of Departments of Transfusion Hematology (DTH). All the DTH were put through new technological equipment funded by WB during the period of 2007 – 2008.

Apart from these, Military Medical Academy Blood Transfusion Center (BTC) has the same status with the 4 Regional Centers of Transfusion Hematology supplying blood and blood components for the Military Medical Academy Hospital by blood collection at site or by mobile teams, processing and diagnostic of the collected blood. This establishment is subordinated to the Ministry of Defense.



STRUCTURE OF NCTH:

- 7 DEPARTMENTS AND LABORATORIES
  - BLOOD DONATION UNIT
  - LABORATORY DIAGNOSTICS OF THE COLLECTED BLOOD
  - BLOOD PROCESSING DEPARTMENT
  - DISTRIBUTION OF BLOOD AND BLOOD COMPONENTS
  - QUALITY MANAGEMENT DEPARTMENT
  - ADMINISTRATIVE AND SCIENTIFIC DEPARTMENT
  - FINANCIAL DEPARTMENT

- 30 medical doctors
- 32 nurses
- 35 laboratory assistants
- 8 biologists
- 38 non-medical specialists
- 28 cleaning staff

BLOOD DONATIONS IN NCTH (2013 – 2015)

Donations by type	2013	2014	2015
Voluntary Donations	6 571 (17.5 %)	6 788 (17.8 %)	7 240 (18.5 %)
Family Donations	27 652 (74 %)	28 534 (75 %)	29 761 (75,7 %)
Total Unpaid Donations	34 223 (91.5%)	35 322 (92.8%)	37 001 (94.2%)
Paid Donations	1 772 (4.8 %)	1 409 (3.7%)	985 (2.5%)
Apheresis	1 373 (3.7%)	1 324 (3.5%)	1 305 (3.3%)
Total Donations	37 368 (100%)	38 055 (100%)	39 291 (100%)
First-time Donations	9 496 (25.4%)	9 539 (25.1%)	10 044 (25.6%)

Activities performed in the National Center of Transfusion Hematology (NCTH) according to the Medical Standard of "Transfusion Hematology":

1) Planning the needs of blood supply on national level and planning the needed plasma collections for the production of plasma derivates

2) Planning the necessary medical & laboratory equipment, tests, consumables and supplies for the collection, processing, diagnostics and administration of blood in all the five regions in the country

3) Forming a national blood strategy and campaigns for Blood Donation, promotion & organization of blood donations in mobile and local teams. Involving other non-government organizations like the Bulgarian Red Cross, and the medias, in the donor promotion and motivation increase activities

4) Scientific & research work in Transfusion Hematology

5) Expert and control, referent and consultant work

6) External Quality Control in the Regional Centers and the Departments of Transfusion Hematology in the country together with the Bulgarian Drug Agency (BDA)

7) Training and education of medical specialists and doctors, post-graduate education

8) Surveillance, hemovigilance on national level ; maintenance of a National Register & Data base management (NIS project since 2015) (together with the Bulgarian Drug Agency)

Challanges before the Transfusion System in Bulgaria

- Increasing the total number of voluntary blood donations, creating a new behavioral **image of the *blood donor***
- Increasing the percentage of ***constant voluntary (safe) blood donors***

- Promotion of the apheresis donations and registered **apheresis donors**
- Entry of **pathogen inactivation** techniques for plasma pools
- **Intrauterine transfusions,** providing safe and suitable blood components, entry of real-time PCR genotyping
- Increasing the **blood safety** by strict final product quality control measures and implying the latest diagnostic techniques (NAT) for blood-borne infections, strategies to ensure the blood safety in the atmosphere of immerging new pathogens
- Need of clear **clinical transfusion guidelines** and establishing effective multidiscipline **Hospital Transfusion Committees**
- **Transfusion medicine** to be included in the basic course of 6-year education in "Medicine"
- **QMS –** Quality Management System, already harmonized with the latest EC Directive
- **Stock inventory management** at national and regional level

Literature:

1. Law on Health – 2004, last actualization 2015
2. Law on Medical Establishments -1999, last actualization 2015
3. Law on Blood, Blood Donation and Blood Transfusion, (ЗАКОН ЗА КРЪВТА, КРЪВОДАРЯВАНЕТО И КРЪВОПРЕЛИВАНЕТО 2010) and the Ordinances connected to the law (18, 29, 5, 8, 22)
4. Medical Standard of "Transfusion medicine", (**Медицински стандарт "Трансфузионна хематология"**)
5. Regulation of postgraduate medical education (Наредба № 31 от 2001 г. за следдипломно обучение в системата на здравеопазването (ДВ, бр. 64 от 2001 г.).
6. National Center of Transfusion Hematology Records

TRANSFUSION INSTITUTE; ESSENTIALLY OR LUXURY? - EGYPT

Faten Moftah, Egypt

INTRODUCTION

Blood transfusion services have existed in MOH since early 1950ies. The first blood law was established in 1962, separated from lab services in 1975, and restructured in regionalized services centers in 1999.

National blood services are composed of NBTC and 24 regional centers. Hospitals have storage blood banks.

Blood services are provided by other players too; like university hospitals, private sector, ERC, military, and VACSERA.

SUBJECT

Functions of national blood services in Egypt

a) Blood collection and supply
b) Reference center for laboratory services
c) Guidelines for appropriate use of blood
d) Education & training
e) Research & Development

There is a graduate degree for medical candidates named (fellowship); this fellowship is operated from the national blood center in coordination with fellowship headquarters, and regulated by the high council of universities.

The positive impacts which recognized due to presence of transfusion degree in the country as follows;

- Attracted many young doctors to work in blood transfusion field
- Raised the level of education, skills, and specialization in this field
- Helped in getting the accreditation
- Established the importance of blood transfusion medicine for other clinical departments and decision makers
- Other clinical colleagues respect and listen to blood bank doctors

The fellowship degree is four years after graduation from faculty of medicine. The study is theoretical and practical. Practical is done in accredited blood center guided by qualified mentors (each 7 student under one mentor). Three exams are held after 1^{st}, 2^{nd}, and 4^{th} years. Certificate is awarded after passing three exams and passing a research portfolio of a subject related to the different fields of BT. The research portfolio has to be practical and relates to international literature.

RECOMMENDATION

Governments must ensure that blood transfusion is backed by and academic institute or degree. Countries must learn from other successful models.

DO WE NEED AN INSTITUTE FOR TRANSFUSION - WHAT CAN WE LEARN FROM COUNTRIES WITH A GOOD DEVELOPED TRANSFUSION SERVICE? – GERMANY

Prof. Dr. med. Gert A. Matthes, Germany

1. Institute of Transfusion – Transfusion Medicine
- * Transition in Transfusion Medicine
- * Influence of the National Blood Banking & Transfusion Service
- * Pro and Cons

2. Institutes of Transfusion Medicine in Germany
- * Institutes within German Association of Blood Transfusion Services (StKB)
- * Institutes within German Red Cross Blood Donor Services (GRC BDS)

3. Conclusion
- * Necessity of an Institute of Transfusion
- * Function(s) of that Institute of Transfusion

1. Institute of Transfusion – Transfusion Medicine

It should first be discussed to what extent the name Transfusion Institute adequately reflects reality. The name should rather focus on the transfusion medicine, to cover all aspects. By concentrating the name of the institute on transfusion medicine the national development in transfusion medicine must be considered.

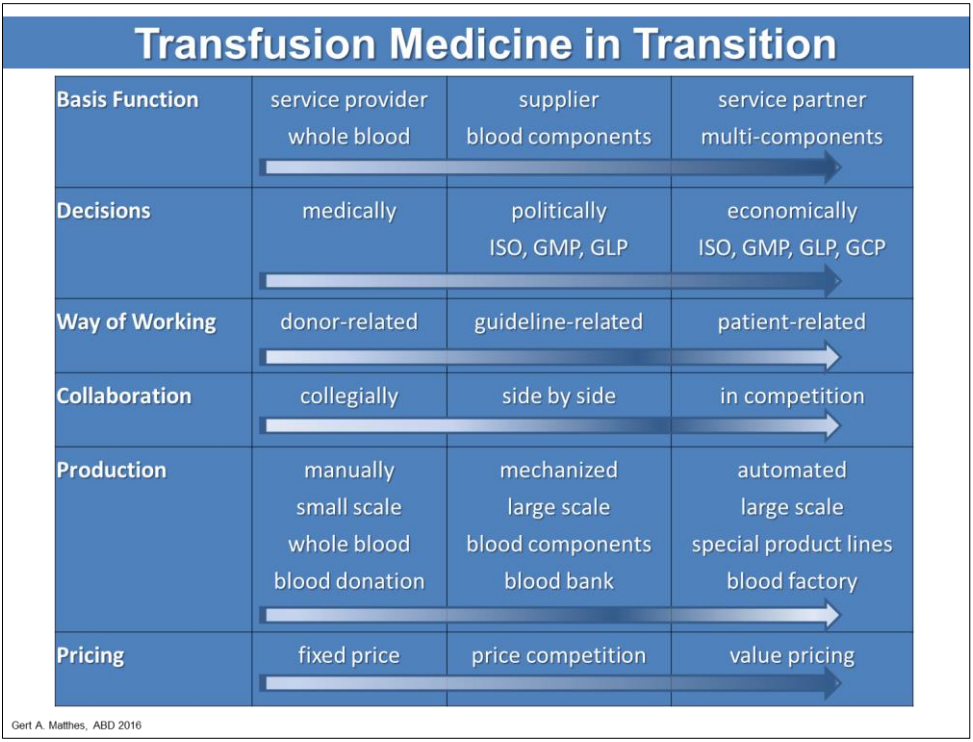
Transfusion medicine is a relatively new medical discipline. She has been formed as a separate discipline from many facets out the blood transfusion and the fields of internal medicine, surgery, obstetrics and microbiology. This is reflected in the early days of transfusion medicine, which were focused on blood donation, the blood processing and -testing.

Only with a stronger orientation towards the clinical efficacy of blood components transfusion medicine was also clinically substantiated. The personal representative of the subject area transfusion medicine was also a reflection of the development of the various branches of medicine. Specialists for internal medicine, hematologists, surgeons, laboratory physicians, microbiologists with corresponding partial knowledge represented the new field of Transfusion Medicine. They were now at the forefront of new facilities for blood donation and transfusion beings. Comparatively, teaching in transfusion medicine at the universities developed, which had been carried out traditionally by subjects surgery, internal medicine, microbiology. Transfusion medicine is now part of the student curriculum respectively part of interdisciplinary teaching complexes. The university institutes for transfusion medicine supply the teaching hospitals with all diagnostic, therapeutic and preparative transfusion medicine services. In order to perform the various tasks these institutions are divided into work areas that, inter alia, operate as reference centers for subspecialties of transfusion medicine. The training curriculum for a specialist in transfusion medicine covers over five years from the complete spectrum of transfusion medicine. Of particular importance for training in the field of transfusion medicine are scientific societies and professional organizations that contribute to the promotion of transfusion medicine and cooperation with relevant medical specialties. They are used in regular annual conferences and symposia as national and international umbrella organization for the science of transfusion medicine. For devices of the blood donation and transfusion system, in the Member States of the European Union are a set of guidelines and recommendations for the transfusion medicine, which are drafted by the EU jointly as desired standard and to be implemented within two years into national law. Today the transfusion medicine as a clinical specialist includes selecting and medical care from blood donors, the preparation,

testing and further development of allogeneic and autologous cellular and plasmatic blood preparations and all tasks in the preparation, implementation and evaluation hämotherapeutischer handling of the patient, supplemented by the development and application of cell- and tissue-specific preparations and tissue engineering.

Transition in Transfusion Medicine

Furthermore, the external influences to the existence of an Institute of Transfusion Medicine are to determine. This includes the conversion of the transfusion concept, relates to the different levels (from the base function on decision-making levels, way of working, cooperation, productive level, pricing).



Influence of the National Blood Banking & Transfusion Service

The question of the necessity and importance of the Institute for Transfusion Medicine depends primarily on the national organization of blood donation and transfusion system and the state of the national development of the field of transfusion medicine.

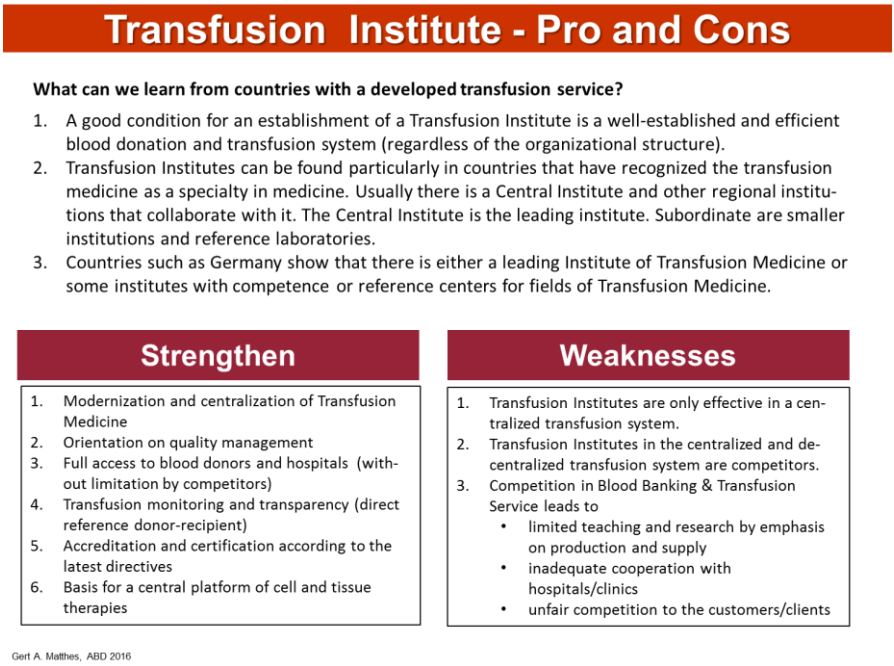
There are basically two different ways of organizing the blood donation and transfusion beings. This would on the one hand centrally coordinated blood establishments under an administrative umbrella organization or on the other hand decentralized forms without overarching administrative connections. The question of an Institute for Transfusion Medicine thereafter depends on these essential conditions from:

- Is there a centrally coordinated blood donation and transfusion services, then work all blood establishments (partly Institute of Transfusion Medicine) in this organization together. It can be easy to recognize the demand for a Central Institute of Transfusion Medicine from this since the one hand, there are options in terms of human, apparatus and material capacities, and on the other hand the material basis.
- In contrast, the selection of a Central Institute for Transfusion Medicine will bring in decentralized forms of blood donation and transfusion system, a number of difficulties. The causes are probably in the missing line and in the competitive efforts in the struggle for supremacy positions to a central institution or to reference centers that can also cover technical skills partly. The alternative variant is a coordinating lead institution in this case.

With the exception of the constraints of organizational forms for blood donation and transfusion beings, one of the existing Institute for Transfusion Medicine assume the function of a top medical institute. This should then focus on the coordination and allocation of competence /

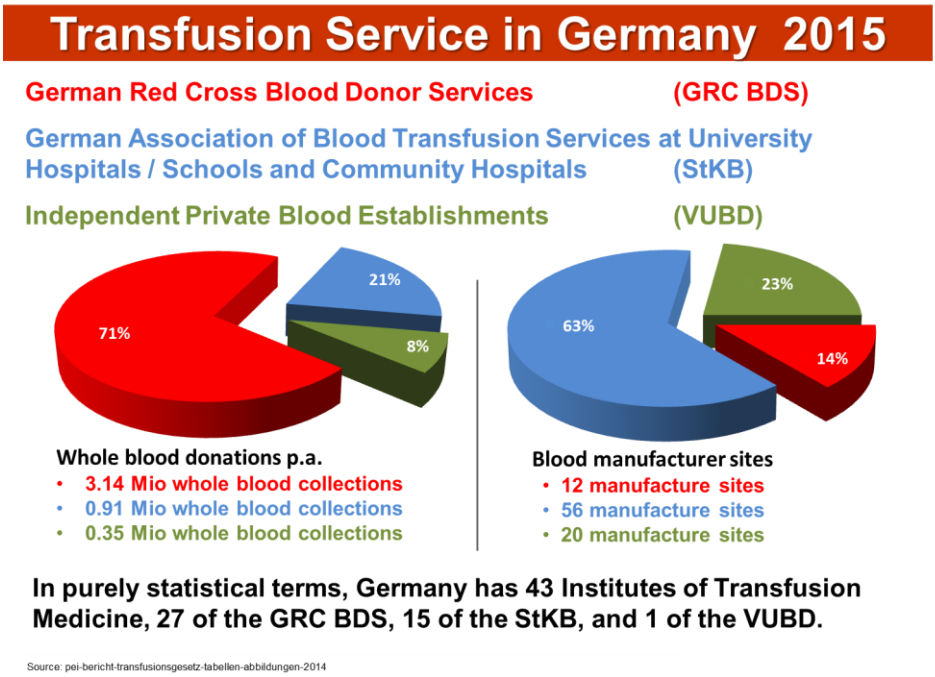
reference functions for reference centers to sub-areas of transfusion medicine to individual departments of existing institutions.

Pro and Cons



2. Institutes of Transfusion Medicine in Germany

The German structure of the blood donor/transfusion system consists of three pillars, the blood transfusion services of the German Red Cross (GRC BDS), University Medical Hospitals/Schools and Community Hospitals (StKB), as well as privately owned plasmapheresis and blood collection centers (VUBD). Thus, Germany has 43 Institutes of Transfusion Medicine, 27 of the GRC BDS, 15 of the StKB, and 1 of the VUBD.

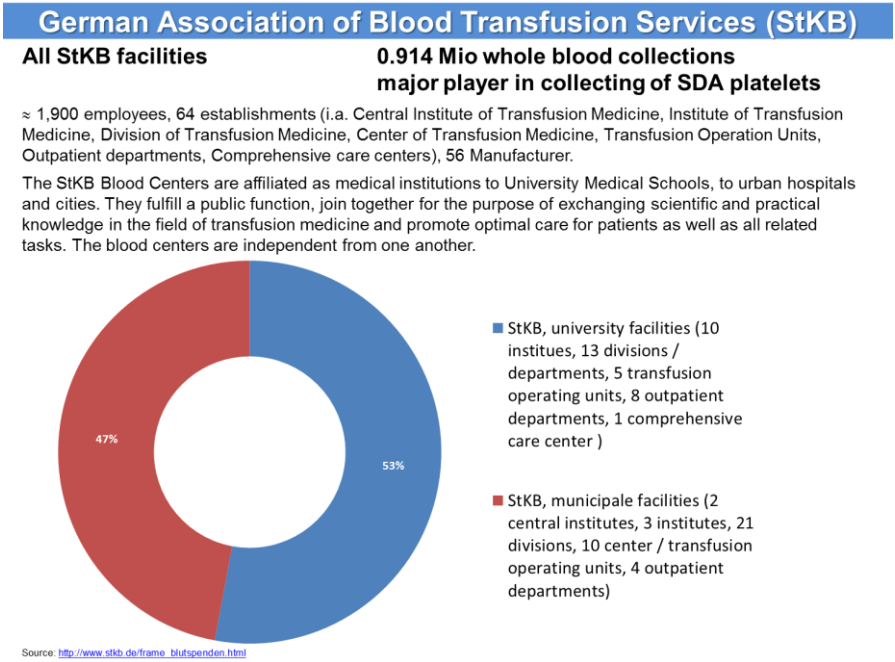


Several public establishments are involved in the German blood and blood products supply chain as such the Paul-Ehrlich-Institute, the Robert Koch Institute, the Federal Agency for Health Information (BZgA), local authorities, German Medical Association, and the advisory committee blood (AK Blut).Germany is regarding blood and blood components collection self-sufficient for labile blood components. The German Transfusion Act (TFG) commits all blood donation services, in particular German Red Cross (GRC BDS), German Association of Blood Transfusion Services (StKB), privately owned plasmapheresis and blood collection centers (VUBD) to a cooperation in ensuring the blood supply in Germany. Therefore all Blood Transfusion Services had defined the details of such cooperation in an agreement according to TFG.

Institutes within German Association of Blood Transfusion Services (StKB)

The Transfusion Center at the University Medical Center of Johannes Gutenberg University Mainz is presented with its departments, facilities and services as an example of a leading institute within the StKB.

Other institutions with reference functions are within the StKB the Institute of Transfusion Medicine at the Hannover Medical School, the Institute of Transfusion Medicine and Transplantation Immunology of the University Hospital Muenster, and the Institute of Hemostaseology, Hemotherapy and Transfusion Medicine of the University Hospital Dusseldorf.



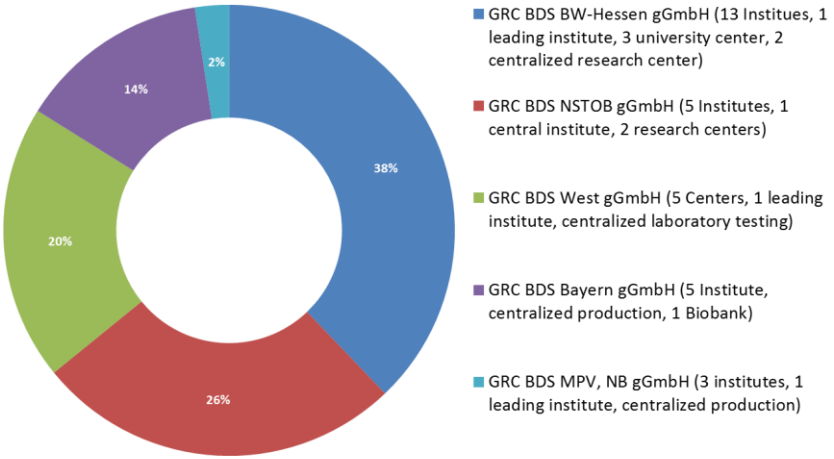
Institutes within German Red Cross Blood Donor Services (GRC BDS)

For the GRC BDS the Institute for Transfusion Medicine and Immunohematology in Frankfurt / Main will be presented with its departments, facilities and services as an example of a leading institute. Other institutions with reference and control functions are within the GRC BDS the Institute of Transfusion Medicine and Immunology in Mannheim, the Central Institute in Springe, and the Center of Transfusion Medicine in Hagen.

German Red Cross Blood Donor Services (GRC BDS)

All GRC BDS's: 3.14 Mio whole blood collections

5,400 employees, 39 establishments (i.a. Central Institute of Transfusion Medicine, Institute of Transfusion Medicine, Center of Transfusion Medicine, Blood Donation Center), 12 Manufacturer.



Source: pei-bericht-transfusionsgesetz-tabellen-abbildungen-2014, http://www.blutspende.de/en/about-us/about-us.php (2016)

3. Conclusion

Necessity and function of an Institute of Transfusion

How should such a Department of Transfusion Medicine look like - what are the functions of such an institute? Regardless of the status of this institute (Central Institute or the central institution) it is led by a highly experienced and scientifically proven transfusion physicians / specialists for Transfusion Medicine. The Institute is the contact for all national transfusion medical institutions as well as representatives in international forums relevant scientific societies.

In this Institute the following departments are headed by experienced professionals provide: Blood and blood supply, preparative hemapheresis, therapeutic hemapheresis, blood component processing, infectious serology and PCR / NAT analysis, serology and immune hematology, HLA / HPA laboratories (donor-recipient selection for transfusion and transplantation), quality assurance and quality management, hemostasis, stem cell transplantation and cell therapy, tissue engineering. There are also departments for training and continuing education, a research and development department, and finance and human resources departments.

An accreditation of the institute should be done either nationally or internationally. Through a personal or institutional membership in the commissions of the EU will be contributed to the clarification of the guidelines and recommendations of the European Union. From Central or central institution regular scientific events are organized to disseminate the current state of the field of transfusion medicine. The employees in the editorial boards of the journals of Transfusion Medicine are perceived by the experienced management staff.

The Transfusion Institute

- should be created or selected as a leading Institute(s) under existing – as a scientific and logistic frame for the existing Blood Banking & Transfusion Service,
- can be public, state owned or non-profit –> should working independently,
- functions must be definitely blood collection, blood components processing, blood supply, donor screening/NAT analytics, immunohematology, hemostasis, tissue typing (HLA, HLA), quality assurance/quality management, blood donor/bone marrow donor center, therapeutic hemapheresis (cell/stem cell apheresis, plasma exchange, immunoadsorption, phototherapy), tissue engineering for regenerative medicine – as well as central departments for teaching (training, continuous teaching), research & development (competence center for technology, know-how transfer), and administration (IT, national supply database, finance, human resources, purchasing),
- should aim for an academic background (proximity or connection to a university hospital) to obtain the qualification level in the Transfusion Medicine upright,
- has positive impacts on a long-term cooperation with hospitals and a close contact with clinical practice, on pooling of expertise in transfusion medicine, on maintaining a high qualification of personnel in the field of transfusion medicine.

An absence of a Transfusion Institute endangers the further development of Transfusion Medicine and can lead to dependency on purely economic interests, influences of third parties and the acquisition by other blood services.

Prof. Dr. med. Gert A. Matthes
Email: gert.matthes@yahoo.de

TRANSFUSION INSTITUTE; ESSENTIALITY OR LUXURY? – INDIA

Nabajyotı Choudhury , India

1) Is there a Transfusion Institute existing at your country?

a) Yes b) No

(We do not have a single transfusion institute. We have about 400 medical schools and in 26 such schools have post graduate courses in Transfusion Medicine which is two three years duration

2) How long has your Transfusion Institute been existing?

a) 0 – 10 years b) 10 – 15 years c) 15 – 20 years d) longer than 20 years

3) Is your Transfusion Institute state owned or private?

a) State owned b) Private c) Other; please specify

(out of 26, majority are state funded but few are private medical schools)

4) Is your Transfusion Institute functioning independently or under the control of an agency such as a university or else?

a) Independent b) Functioning as a part of an agency (university)

5) What are the functions of your Transfusion Institute? You may thick more than one function.

a) Blood collection and supply
b) Reference center for laboratory services
c) Accreditation
d) Education & training
e) Research & Development
f) Other; please specify

Transfusion medicine department does routine teaching & training for post graduate (PG) students

6) What sort of positive impacts have you recognized due to presence of Transfusion Institute at your country? Please list them below on topics;

7) Do you believe that an academic back up such is essential for an appropriate Blood Banking & Transfusion service?

a) Yes b) No

8) Do you believe that "Transfusion Institute" is essential for an appropriate Blood Banking & Transfusion service?

a) Yes b) No

Yes, it is essential which can centrally coordinate transfusion services in a country

9) Please write your personal decision about the importance of Transfusion Institute which are not mentioned above.

As above

10) What sort of challenges have you recognized due to absence of Transfusion Institute at your country? Please list them below on topics;

a. There will be uniform medical education, research & training program for the country
b. Accreditation program
c. Establishment of TQM in the country
d. To work with regulator for improvement and implementations

TRANSFUSION INSTITUTE; ESSENTIALLY OR LUXURY ? - IRAN

Mostafa Moghaddam, Iran

Iranian Blood Transfusion Organization (IBTO) is a nationally coordinated sole provider of blood transfusion services in the country. IBTO's services have been an essential part of the health-care delivery system in Iran since 1974. Prior the establishments of IBTO, blood units were collected inadequately and unsafely from remunerated blood donors who were mostly drug addicts and sick anemic individuals with low hematocrits. Blood recruiters were from professional blood dealers acting as middleman collecting blood for money.

Blood-borne pathogen disseminated among transfused patients and eventually risks of viral infections were continuously increased through blood transfusion.

But since more than forty years ago by law Iranian government through its MOH has been responsible to ensure the availability, accessibility, adequacy and safety of blood supply for the people of Iran.
Maintaining a safe and sufficient supply of blood remains a major goal in the IBTO in order to meet the transfusion needs of the patient population. The two key issues of sufficient supply of blood and demand for access to safe blood are met with utmost concerns of management by implementation of strong infrastructure and internationally accepted policy in IBTO. IBTO's staff is always encouraged to strive in order to continuously keep up with improved system requirements to support better blood management programs in Iran.

The IBTO services cover the blood requests from 693 hospital blood banks and other medical centers that transfuse blood throughout the country. Currently this task is met with 24 hour activity of dedicated personnel in 207 blood donor centers including 116 collection sites, 31 blood collections and preparation centers and 60 main blood centers that not only collect blood but also perform all necessary testing and component preparations and distribution to medical centers. There are 80 percent of fixed blood collection sites and 20 percent mobile sites collecting blood conveniently at work places, universities and colleges and cities and villages that are distanced to fixed sites.

All IBTO blood centers activities are monitored centrally for Quality and application of National blood standards as part of a government managed network. These regional networks are able to maintain knowledge exchange, close communication, efficient and more effective data collection, better use of data in nationwide decision-making, better disaster preparedness in crisis management, more effective resource management (human, financial), better mobilization activities, and a good transport system for blood supply to be dispatched to needed areas. As it was announced officially by WHO, Iran reached 100 percent voluntary non-remunerated blood donation by 2007. The per capita blood donation is 27 per 1000 population.

The World Health Organization (WHO), in its Aide-Memoire for National Blood programs, recommends the following strategies for achieving safe blood transfusion: establishment of nationally coordinated blood transfusion services; collection of blood only from voluntary, non-remunerated donors from low-risk populations; testing of all donated blood; proper and effective clinical use of donated blood; and

integration of quality systems in all areas of the blood transfusion services (BTS).

Following WHO recommendations, today, Iran is enjoying an access to donor population with lower incidence of HIV, HBV, and HCV infections compare to its general population (Table-1)

Table- 1

	HIV%	HBV%	HCV%
Donor population	0.003	0.133	0.043%
General population	0.03	3	0.5%

Starting from 2016 the IBTO's higher management has announced new policy of increasing all attention and activities towards more strict blood safety measures for production of higher quality blood components rather than increased supply of blood products joining universal call for better blood management policies.

It is essential that all technical staff, directors and program managers of a national blood service be equipped with the appropriate scientific and management knowledge and skills to enable them to implement and appropriately operationalize their blood services. Therefore IBTO is enjoying the presence of the respected academic and research center called "***High Institute for Research and Education on Transfusion Medicine***". This institute provides opportunity for necessary knowledge and skills in scientific and technical subjects within the blood services which will allow interested candidates to manage and build capacity with the available resources for effective and efficient operations of national blood programs.

REPORT FROM ITALY

Umberto Rossi

President, European School of Transfusion Medicine (ESTM) , The Italian National Blood Centre (CNS - Centro Nazionale Sangue)

The Italian CNS started its existence on 1/8/2007, as a Centre of the Ministry of Health, operating in Roma at the Italian ISS *("Superior Institute of Health").*

It was conceived as a scientific, technical and organisational National Institute, caring about coordination of the Regional transfusion Organisations and assuming responsibilities for coordination and technical/scientific control of national Transfusion Medicine programmes, and of European Union (EU) Directives.

The CNS is responsible about implementation of national transfusion activities and of national production of blood components and plasma, collaboration with blood donors' Associations, and several other operational tasks.

The CNS contribution to the improvement of the Italian transfusion system has been quite relevant, notably in:

- assisting the Ministry of Health in elaboration of national laws and decrees on Transfusion Medicine;
- promoting and implementing control systems for transfusion safety;
- coordinating organisation and activities of Regional transfusion systems;

- conducting scientific research on most relevant immunohaematology issues;
- representing the Italian Transfusion Medicine system within European Union and international organisations.

The legislation concerning the guidance of CNS has been conceived taking into account the complexity of national organisation and control of national transfusion systems, and the consequently obvious need of an adequate period of time for any appointment of expert Directors and Collaborators.

The former CNS Director until 2015 (now Senior Adviser) has been Giuliano Grazzini.

The present Director is Giancarlo Liumbruno.

Any details on CNS organisation, activities and achievements are available on the CNS webside:

http://www.centronazionalesangue.it

Essential suggestions for optimal contribution to country' progress by Central Transfusion Institute

Having lived the long experience of ESTM educational programmes, and having in this capacity become acquainted with Transfusion Medicine national organisations of many European countries, may I strongly suggest that the institution and shape of any National Transfusion Medicine Central Institute, for its optimal contribution to a real progress of the country, should strictly consider the essential requirement of a positive answer to the following suggestions:

1) Consider the National Transfusion Medicine Institute as an absolute priority among the steps needed to preserve life and health of all citizen.
2) Care about the need of strict collaboration with the similar Institutes in neighbouring countries.
3) Observe European Union Directives and programmes, definitely if already EU members, but possibly in any case as well.
4) Absolutely avoid the sort of *"quickly rotating system"*, presently practiced in many European countries, particularly in Eastern Europe. Exerting such a strict and frequent political power, on the development of such a delicate and relevant aspect of public health, would certainly not contribute to the development and consolidation of national Transfusion Medicine, and discourage any responsible professional to usefully undertake such an important job.
5) Programmes of development certainly need to be proposed to political Authorities by expert people, to be discussed, and then – once approved- implemented by encouraged competent professionals according to a reasonable and regular calendar. Sudden changes, due to politically driven decisions, do not usually contribute to a timely implementation of any decided development programme.
6) Constant care of Transfusion Medicine education, at all levels of health professionals, must be an obliged and relevant part of any programme of any national Institute, in any country.
7) Coordination of such educational programmes with neighbouring countries' national Institutes, would certainly help accelerate and improve their implementation.

IMPORTANCE OF TRANSFUSION INSTITUTE - KOSOVO

Bukurije Zhubi, Hysen Sadriu

National Blood Transfusion Center of KOSOVO

Kosovo Blood Transfusion Service was established 64 years ago (1952) as an entity of Prishtina General Hospital. The development of transfusion services extended through years and in 2003 it was upgraded to National Blood Transfusion Centre of Kosovo (NBTCK) with its seven Regional Blood Transfusion Centres attached to Regional Hospitals of Kosovo. Regional Centres were partly under NBTCK and partly by their native hospitals. After the reorganisation of NBTCK from January 1, 2015, Regional Transfusion Centres are completely under management of NBTCK.

Blood banking and transfusion services are allowed to be run by authorized public institutions only and therefore, there is no private sector for blood banking and transfusion services. However, NBTCK supplies with blood and blood products both public and private health domains.

NBTCK is linked directly to the Ministry of Health and also all Regional Blood Centers (Mitrovica, Peja, Gjakova, Prizreni, Gjilani, Ferizaji and Vushtri) now are linked directly to NBTCK in an effort to standardize the quality of blood and blood products throughout Kosovo.

National Blood Transfusion Center of Kosovo is a tertiary public health institution where the blood transfusion services are offered, including educational and research scientific activities.
NBTCK realizes the rights, obligations, duties and its aims in the field of supplying the citizens with blood and blood components through: a)

estimating the requirements for blood components; b) stimulating the policies of self-sufficiency in supplying the citizens with blood components through voluntary blood donors(without payment); c) providing the conditions for increasing the selfawarenes of citizens for the need of blood donation; d) providing the conditions for storing the collected blood, testing it as well as producing, storing and delivering the components, in accordance with the technological scientific development; e) establishing and providing the development of the information system on the field of the transfusion medicine; f) providing the development of the health activities in the field of transfusion medicine; g) providing conditions for education of health workers in the field of the transfusion medicine.

NBTCK organizes and carries out the actions for blood collection. The annual planer of actions for blood collection is prepared by NBTCK. Unexpected increase needs for blood and blood products will be covered by additional field actions for blood collection and with other activities in coordination with Ministry of Health. In order to ensure a consistent supply with blood, the regional Blood Transfusion centers cooperate with NBTCK.

The presence of Transfusion Institute has the positive impacts:
Better promotion of blood donations which includes all activities concerning the motivation, organization, education, and recruitment of VBD at national level for blood supply.

Self-sufficiency supply with blood and blood components which ensures that all needs for blood and blood components in the specific region or country are covered by their own sources. Better quality control of blood and blood products.

National Blood Transfusion Center of Kosovo may offer and applied educational activities at several levels i.e.:

- Education and training of students in Transfusion Medicine in Medical Faculty.
- Education and training of students in Transfusion Medicine at the Faculty of nursing (nursing, laboratory technician, etc.).
- Education and training of residents in transfusion medicine in different areas of residency (2 weeks to 3 months).
- Education and training of doctors for residency in transfusion medicine (five years) post graduate study.
- Education and training of technicians as special course in Transfusion Medicine (6 months).

We believe that Transfusion Institute has impact in all levels of organizations and activities in transfusion medicine making possible an appropriate Blood banking and Transfusion service.

TRANSFUSION INSTITUTE – ESSENTIALLY OR LUXURY? THE CURRENT SITUATION AND PERSPECTIVES IN – R.MACEDONIA

Velkova E., Mitevska L., Dejanova D.

National Institute of Transfusion Medicine, Macedonia

INTRODUCTION

In July, 2016 the Blood Transfusion Services (BTSs) will celebrate 70 years after its establishment in R Macedonia. During all those years, they are part of the public health organizations. According to Law for blood safety (Official Gazette RM. No 110/2007), the private blood banks are not allowed. With around 55.000 collected blood units per year, R. Macedonia has reached self-sufficiency in blood and blood components. The biggest parts of donations are from voluntary blood donors (98%) and only 2% are family donors. Red Cross Society (RCS) is responsible for organization of blood donor sessions, but the national program is a mutual activity of NITM and RCS, under supervision of the Ministry of Health.

Before the year 2011, Blood Transfusion Services (BTSs) were part of the hospitals in 18 cities in R. Macedonia. They have operated independently from Institute of Transfusion Medicine in Skopje, managed by the hospital directors. Beside blood donation from voluntary unpaid donors, they provided blood grouping of donors and patients, detection of irregular red cell antibodies, in particular anti-Rh (D) during pregnancy, screening for transfusion transmitted diseases and cross matching units before transfusion. Planning and organization of work at BTSs have not been nationally coordinated. Furthermore, BTSs as a part of different hospitals and their organizational units on each level practically perform all the

blood transfusion activities in various degrees, with different equipment and without national standards.

Since the year 2011, all BTSs are integrated in one national system that consist of: National Institute of Transfusion Medicine (NITM) in Skopje with 3 Regional Blood Transfusion Services (RBTSs) in Bitola, Tetovo and Shtip and 18 BTSs, out of which 2 are hospital blood banks with out-patient services based BTSs in Skopje (surgery hospital St Naum Ohridski and Gynecology and obstetrics hospital Mother Theresa).

The functions of the Transfusion Institute are different and in many areas, such are: Blood collection and supply as a main activity, laboratory services for hospitalized and ambulatory patients in immunohematology, hemostasis, hemophilia, HLA and molecular biology. Besides that, the NITM is an educational basis for undergraduate and graduate studies, short 6 months courses for nurses and laboratory technicians to gain certificate as a specialized training to work in transfusion medicine laboratories.

Since the year 2007, Transfusion Medicine (TM) is accepted as a mandatory subject for undergraduate education at all state Medical faculties for doctors and nurses. The education for doctors last one semester with 30 hours teaching and laboratory practice. The students gain knowledge about: blood donation process, immunohematology, rational clinical use of blood/components, possible transfusion related reactions, transfusion transmitted infections, the use of blood replacement therapy and alternatives, hemophilia patients, bone marrow and solid organ transplantations. Until now 90 medical doctors have finished specialization in TM by old program that lasted 36 months. Since the year 2012 the postgraduate education in TM lasts 5 years and it is in a

compliance with European curriculum; now 5 medical doctors are at specialization according the new program. There is also a possibility for master and PhD studies in transfusion medicine; at this moment there are 4 candidates at PhD studies. The medical specialists in other disciplines (anesthesiology, gynecology, internal medicine, surgery, pediatric) also follow the short courses in TM.

The positive impacts due to presence of Transfusion Institute in R. Macedonia, especially after the integration of BTSs are obvious in many areas, such are: improved rational clinical use of blood, increased use of alternatives (concentrates of coagulation factors, Fe, erythropoietin etc.), implementation of national law for blood safety and guidelines, presence of quality management system etc.

The challenges for NITM that are present now are: unique national electronic system for blood donor's evidence, improvement of haemovigilance system, steel need for new equipment and removal of old ones in some BTSs.

IMPORTANCE OF TRANSFUSION INSTITUTE?- OMAN

Dr. Khalid Said Salim Al-Habsi, Oman

Oman is a country with over 4.5 million residents. More than 43% of them are temporary expatriate workers according to the latest available data. Oman has a unique location in the southeastern coast of the Arabian Peninsula holding a strategically important position with close proximity to Asia – especially – the Indian subcontinent and similarly close to the East coast of African countries. This location built strong trade relations and historical tides with all these countries in addition to other Arab countries in the region.

Oman has a transfusion institute called the central blood bank established in the 1980s. This institute has seen a significant change in the last decade with introduction of modern blood banking procedures and platforms including automated high throughput equipments for donor grouping and antibody screening.

The central Blood Bank is under the directorate of Specialized Medical Care of the ministry of health in Oman. The central blood bank is the main institute for donor recruitment and for blood collection and supply in addition to other hospital based and governorates blood banks. In addition, the institute has a national red cell and immunohematology reference laboratory that receives requests from all other blood banks in the country. The organizational structure also include the quality assurance section in addition to the medical officers and other support medical staff.

The central blood bank organizes yearly visits to other regional and governorates blood banks to insure that guidelines and standard procedures are in place and the minimum required quality measures for

safe blood transfusion are met. Inspection documents are made after each visit and usually reported to the ministry of health and to the concerned blood bank to provide objective assessments of areas where standards are not met or improvements are required. In addition to these regular visits, the central blood bank conducts workshops and meetings where representatives from all other blood banks are gathered together to discuss any developing issues.

The central blood bank is responsible for developing the National Blood Policy and other consensus guidelines regarding blood collection and transfusion including vigilance programs for donor reactions and transfusion reactions. There is an increased interest on research developments and data collection to support the decision making process in improving the quality of services.

The establishment of the central blood bank with its continuous improvements has lead to better outcomes related to the safety of blood, ensuring sufficient blood is available and continuous monitoring of new risks to blood supply under the umbrella of one unified system trusted by public and authorities in the country. It is also important to develop a national database for blood donors and a registry for patients with regular blood transfusion e.g. patients with Sickle cell disease and Thalassemia.

For all the above reasons, I believe a national blood transfusion institute is crucial for any country aiming to improve the quality and safety of the blood products.

TRANSFUSION INSTITUTE – ESSENTIALLY OR LUXURY?- ROMANIA

Dr. Georgeta Hanganu, Romania

Motto: *"Man sanctifies the place"* - Romanian proverb

Romania transfusion history begins in 1941, when Dr. Virgil Ionescu in Bucharest founded the first "Collection and transfusion center" at Philanthropy Hospital.

In 1949, organizes "Conservation and Transfusion Centre Bucharest" and the Ministry of Health established a national network consists of 30 transfusion centers.

Subsequently institution becomes "Center of Hematology Bucharest", the first methodological and educational center in Romania transfusion. Hematology Center emerges in 1995 the blood Bucharest National Institute of Hematology and Transfusion, methodological and coordinating forum for transfusion network in Romania, today comprises 42 centers.

National Institute of Transfusion Hematology is the coordinating institution of transfusion activity in Romania, both in terms of organizational, scientific, and financial terms.

National Institute is a financial creditor to the county transfusion centers.

National Institute of Transfusion Hematology is under the direct coordination of the Ministry of Health, and is funded through the National Blood Transfusion Program.

Besides coordinating role for all transfusion centers in the country, it has an important role in establishing the methodology and research in transfusion activity.

The organizational structure has many diagnostic laboratories and research that contributes to the application of new conquests of science in transfusion modernizes working methods applied in routine. **These are:**

Diagnostic laboratory hematology,
Central laboratory diagnosis, treatment, prevention and control of thalassemia,
Central Laboratory of Immune-hematology,
Laboratory diagnosis and treatment of bleeding disorders,
Histocompatibility Laboratory,
The central laboratory quality control of labile blood products,
Central reference laboratory for blood-borne viruses,
Laboratory micro - diagnostic reagents - blood derivatives,
Industrial Plasma Laboratory.

Medical services are provided by the National Institute:

Checks for proper hematologic patients treated in other health facilities,
Diagnostic blood diseases - consultations and analysis,
Screening and analysis hemostasis deficiencies,
Hospitalization and counseling Haemoglobinopathies
Diagnostic tests for hematology,
HLA Class I phenotyping,
HLA Class II phenotyping,
HLA antibody screening anti-graft recipients,
Serological diagnosis of blood-borne viruses,

Serological diagnosis of HIV-1 infections confirmation, HIV 2, HTLV-I, HTLV- II, EBV, HBV, HCV, CMV blood donors.

Other activities undertaken by the National Institute are:
Scientific research,
Education for medical staff,
Methodology,
Rating reagents, equipment,
Promoting voluntary blood donation.

The role of the National Institute for Transfusion Policy of the country, adopting unified nationwide to gain community, taking novelties in European legislation, standardization work mode, testing equipment and new reagents, development of a research program, conducting educational programs, make necessary and compulsory to have an Institute of transfusion Hematology in each country.

TRANSFUSION INSTITUTE: ESSENTIALLY OR LUXURY? CURRENT STATUS IN THE REPUBLIC OF SLOVENIA

Slavica Stanisic, Slovenia

Blood Transfusion Centre (BTC) of Slovenia is by Low, besides its basic task to ensure compatible, high quality blood products, also responsible for research and development as well as education and training in the field of transfusion medicine.

BTC was celebrating the 60 anniversary last year. During the process of reorganization with the main aim to get unified national blood transfusion service, there were six blood transfusion departments at the regional hospitals merged with BTC in the last few years.

BTC is non-profit organization, independent in terms of organization and finance.

Different activities in BTC are constantly expanding and developing.
Blood supply process is fundamental activity in BTC. Blood is collected at BTC and six dislocated units (fixed sites) and on mobile sessions. Slovenia is self sufficient in it's own blood supply. Automated procedures in blood processing enable complete traceability and increase quality of blood components.

In the field of laboratory testing and immunohematology, besides testing of blood components, there are performed eritrocyte, platelet and granulocyte serology tests as well as molecular biology tests. We also perform prenatal tests to prevent hemolytic disease of the fetus and

newborn. There is also program prepared for prenatal determination of the presence of the fetal RhD gene in the mothers blood.

In the area of therapeutic activities, Therapeutic Service Department was established to perform cell and tissue supply activities such as collection, processing and storage of haematopoietic stem cells, extracorporal phothopheresis, heart failure treatment with stem cells, immunotherapy and other therapeutic apheresis procedures. Further development of the activity is focused on the area of cell therapies, regenerative medicine and immunotherapy.

The Slovenian Registry of unrelated haematopoietic stem cell donors was established in 1992 and it is a member of the Bone Marrow Worldwide registry (BMWR). In the year 2000 Slovenia joined the international organization for exchange donor organs Eurotransplant. Tissue Typing Centre as EFI accredited laboratory, was one of condition to join Eurotransplant.

Pharmaceutical Department on the BTC was primarily established for the production of anticoagulant solutions and medical devices. Nowadays their activities are transferred towards wholesale of blood derived medicinal products and recombinant coagulation factors.

The national telemedicine system has been operating since 2005. By means of teletransfusion, transfusion medicine specialists are able to release results of pre-transfusing tests from distant location 24 hours, 7 days a week.

We have successfully maintained and improved the quality management system for 10 years. With the joint efforts of the quality managers and

employees, we obtained the ISO 9001 certificate in 2004. In 2006 the Quality Management Service was designed as a WHO collaborative center for the Quality Management System in Transfusion Medicine and has taken part in organization of various international events and meetings since then.

Education takes important part of all our activities in BTC. It is fundamental for high quality work as well as for the achievement of the set goals in the field of Transfusion Medicine. BTC is the main education institution for all transfusion activities in Slovenia.

Research and development is the driving force of transfusion medicine progress. It is involved in our daily activity and focused on the area of blood transfusion, cell and tissue therapy and other support activities in the treatment of our patients. It allows introduction of new products and translation of services into routine work.

The Blood Transfusion Centre of Slovenia has been registered as a research organization since 1993 although research work was performed already before. There were three research groups established under the Slovenian Research Agency: Tissue typing centre, Transfusion medicine and Biomedicine.

Thanks to research and development as well as continuous education in our BTC, we are constantly improving our products, services and activities to ensure the best possible treatment to our patients.
In the Republic of Slovenia there is still no official Transfusion Institute. We are certain that our research and development work achievements in the field of Transfusion Medicine are the basis to obtain status as a tertiary institution in the near future.

THE IMPORTANCE OF TRANSFUSION INSTITUTES: REPORT FROM SPAIN

Jose Manuel Cardenas, SPAIN

President of the Spanish Society of Blood Transfusion and Cellular Therapy (SETS) - Secretary General of the European School of Transfusion Medicine (ESTM)

In the year 1985 all the blood collection and processing in Spain was hospital based, being the blood bank always a part of the hospital service of haematology. Many hospital blood banks could coexist in the same area. Following a progressive twenty years long process, by the year 2005 the blood collection and processing were finally based on regional blood centres. Since then each regional blood centre manages all the blood collections in the region and supplies the blood components needed to all the hospitals in this same region. It should be understood that the term *Transfusion Institute* is equivalent to *Regional Blood Centre*, carrying out the tasks assigned to *Blood Establishments* by the European Union Directives, that is: 1) to promote the voluntary non-remunerated blood donation, 2) to plan and to collect blood intended for transfusion, 3) to process the blood through fractionation and testing, and 4) to release, to store and to distribute normalized blood components. These processes must be managed under the control of a quality system ensuring the compliance with the quality requirements

Characteristics of the Country

Spain is a South-European country giving face to both the Atlantic Ocean and the Mediterranean Sea. The surface is 505.000 Sq Km and a population of 46M. Spain is member of the European Union since 1986.

The country is divided in seventeen regions, each one bearing a considerable autonomy. Although sharing a common health care legislation, the regional government manages its own regional health service and is also the Competent Authority for the inspection and conformity of the health care. 85% of the health care provided is public and 15% private. There is 1.700.000 blood units collected per year with an index of 38/1000pop / year. The index has not changed in the last twenty years, perhaps mildly declining in the last two years. Blood shortages are almost unknown. All the blood donations come from voluntary non-remunerated blood donors, 90% of them being regular blood donors and 10% new donors. There are not familiar or replacement blood donations. Paid blood donation is formally forbidden since 1985, although by that year it was almost inexistent. 425.000 litres of plasma are generated per year, 10% is transfused and the remaining 90% is processed into plasma products. 180.000 units of platelets are transfused per year, 30.000 apheresis platelets and 150.000 pooled platelets derived from whole blood donations. All the blood centres are public, managed and funded by the regional government. The regional government charges private hospitals with an officially established fee for the supply of blood components, which represents around 10% of the budget. Almost all the heavy-duty patients such as oncohaematology or transplant patients are treated in public hospitals

The process of constitution of blood institutes in Spain

In 1985 the Spanish government issued a national legislation regarding the organization of blood transfusion, giving room for regional governments to establish provincial and regional blood centres. The decision of when and how, was left to each regional government to decide. In the first year the regional governments of six Spanish regions (out of seventeen), scattered around the Country, organized themselves

in the suggested way. The blood banks of their public hospitals, their personnel and equipment were transferred to one single out-of hospital building, under the control of the top management of the regional blood service. In a few cases the new centre remained within the original hospital building, although being provided with economic and management autonomy, independent of the hospital management. In some cases the blood centre was considered another service within the public health service, whereas in others a foundation-format was instituted with the participation of other partners such as the Red Cross, blood donor associations, private hospital associations, etc. It soon became clear which the benefits were: the rise of the blood donation under a comprehensive ongoing blood collection programme, the standardization of the supply, the availability of a panel of phenotyped red cells and later of platelets, the possibility to arrange contracts for the industrial fractionation of plasma. A bit later, in the nineties when the establishment of quality systems was recognized as being a requirement for blood banks, these regional blood centres were in a good position for their implementation.

Negative factors were also recognized. Hospital haematology services felt suspicious about the effectiveness of the move. In some occasions they viewed the transfer of the service as a loose, being not-collaborative, making exorbitant demands of blood components, and complaining again and again. However this type of response was uncommon and self-limited, disappearing in a few years. More important is the fact that the control of the transfusions within the hospitals by the Haematology Unit, which was good and effective all around the Country in the eighties, became more relaxed. This effect was slow, only perceived after a perspective of ten - fifteen years. Nowadays, with the implementation of common inter-connected computer systems of blood centres –

transfusion service hospitals, the situation has evolved significantly. There is an active cooperation for electronic blood requests and electronic transfusion security systems put in place. After the first six reorganized regions, little by little others were also organizing themselves. The considerable success was determinant for choosing this approach. The last two regions were Madrid and Aragon in 2005.

Critical points regarding the constitution and management of blood institutes in Spain

I would say that three clues have been critical in the effective reorganization of blood transfusion as a network of blood institutes. The first one is the political will for doing so. This is a necessary first step to make things happen. Transfusion institutes must be public, or at least public-controlled, as long as they are part of the public health system. It is very important to account on political support when difficulties arise (and they will) and to maintain the programme forward. It is also necessary to rely on public funding but this is not as important as the political support. The second one is the availability of one professional (or occasionally a small group of professionals) willing to lead the plan. If we try to explain why at the beginning six Spanish regions began the reorganization of their transfusion services, you will find in every case that one person, a professional of blood transfusion, was behind the project. Later in time you could find a mixture of situations, in some cases professionals were promoting a transfusion institute in their region, in others the regional health authorities decided to organize a transfusion institute seeing how successful was in other parts of the Country. The third clue regards the communication skills. It is crucial for transfusion institutes to maintain good communication channels with the hospital transfusion services, with blood donor associations, with health authorities, with mass media. The responsibility for effective communication relies primarily on the

transfusion institute. Even if your partner does not make things easy you must keep going forward the communication issues: to send information, offering cooperation, asking for needs, etc. In quality terms this subject is well known as “customer and stakeholders satisfaction input”

The current network of transfusion institutes in Spain

As explained above all the blood collection and processing of blood components in Spain is based on transfusion institutes, called regional blood centres. At the beginning provincial and regional centres were foreseen, but soon became clear it was better to rely only on regional centres. It probably could be interesting to further concentrate the transfusion institutes but that will be difficult for political reasons as long as regional governments are jealous of their self-sufficiency and autonomy. However some programmes such as plasma fractionation or cord-blood banks are carried out under inter-regional cooperation. All the blood centres in Spain are ISO 9001 certified. Most centres carry out tissue banks in addition to blood banking and promote (and test) panels of bone marrow donors.

Conclusion

In summary, the network of transfusion institutes in Spain has been the result of a long process in the Country. The benefits include the availability of an all-voluntary blood donor base, the processing and distribution under a comprehensive quality system, and the efficacy and efficiency of the transfusion supply. The split of blood collection / blood transfusion requires good interaction of both. The political and professional supports, and good communication, are considered critical points for building up a national transfusion programme based on transfusion institutes

TRANSFUSION INSTITUTE: ESSENTIALLY OR LUXURY? SRI LANKA

Dr. Ananda Gunasekera, Sri Lanka

World Health Organization defines Blood safety programmes as actions aimed at ensuring that everyone has access to blood and blood products that are as safe as possible, available at reasonable cost, adequate to meet the needs of patients, transfused only when necessary, and provided as part of a sustainable blood programme within the existing health care system.

Timely supply of adequate amount of safe blood and blood components to meet the demand of the population catered is the main target of a blood transfusion service. Without having a well-organized Transfusion Service as an Institution it is almost impossible to achieve this objective of supplying blood and Blood products to the international standards.

Therefore it is right time to deviate from the Hospital Based Blood Bank concept to a Nationally coordinated Transfusion system to maintain a good technical coordination among the Donor Community,The patients Community, The technical Community and the International policy making community.

SCIENTIFIC POTENTIAL - STATE INSTITUTION REPUBLICAN SCIENTIFIC BLOOD CENTRE IN THE REPUBLIC OF TAJIKISTAN

Dr. Aziz Odinaev , Tajikistan

MD, PhD, General Director, Republican Scientific Blood Centre, Dushanbe

In 2013, the Blood Service of Tajikistan was centralized. National Blood Service includes one Republican Scientific Blood Center in Dushanbe and 3 regional blood centers located in each region. Regional blood centers have received the status of a branch of the State Institution of the Republican Scientific Blood Center, as well as the laboratory for the storage of blood components from 79 hospitals.

SI "RSBC" consists of 8 departments and the laboratory, which works closely with the research department of the center.

SI "RSBC" Scientific department is licensed by the Ministry of Education and Science of the Republic of Tajikistan and the Ministry of Health and Social Protection of the Republic of Tajikistan.

State Institution “Republican Scientific Blood Center" is the only scientific-research institution in the field of blood transfusion in the Republic of Tajikistan, which is carrying out an active scientific and methodical work, and also implements the program of priority and current trends of medicine in the field of transfusion and intensive care at the massive blood loss.

A number of scientists and physicians of SI "Republican Scientific Blood Centre» settles a wide range of problems on training of medical professions in the field of transfusion, diagnostics and treatment of diseases of the blood system, the creation of new and effective programs

to improve intensive care of patients with severe blood loss and hematological diseases.

The number of research staff -10, including 3 candidates of medical sciences and 7 researchers.

The staff of SI "RSBC" carried out scientific research on the following topics:

- Optimization and protection of transfusion therapy in the Republic of Tajikistan;
- The importance of the dynamic control of the haemostatic system to develop a program of transfusion therapy in patients with obstetricgynecologic hemorrhage;
- Features of antigenic structure of erythrocytes and antierythrocytic antibodies in peoples of different regions of Tajikistan;
- Optimization of the program of transfusion-infusion therapy at critical states of patients with massive blood loss.

Of late years, there have been published more than 12 monographs, 43 workbooks and 154 articles in the field of transfusion. The specialists of our centre conduct researches on 2 subjects that are most relevant to our country. Now the development of the 2 new issues is carried out, for the period 2016-2020.

With the assistance of the Ministry of Health and Social Protection of Population of the Republic of Tajikistan new laboratory analyzers from ELISA - PCR and hemophilia was purchased to study rare forms of blood diseases. By means of the latest analyzers, the science department is carrying out research works on current topics.

In SI "Republican Scientific Blood Centre" and in all regional branches "resuscitation and transfusion brigade with laboratory hemostasis" and special equipment is functioning 24 hours, which is provided with the necessary equipment.

Every month specialists give efficient medical care to 40-50 patients, suffering from massive blood loss and other types of disorders of blood coagulation. Experts do the necessary laboratory tests on hemostasis system blood rheology. According to the statistics, due to the brigade's care the number of maternal deaths and complications of blood transfusion are significantly reduced.

More than 20 articles on transfusion have been published with assistance of this brigade.

It should be pointed that type of specialized team is the only one among the countries of Central Asia.

For 5 years, 125 doctors have received diplomas on transfusiology. More than 164 doctors- transfusiologists have taken training courses. More than 216 middle medical staff and technicians have been trained in immunology and virology. Trainings have been held both through travels around the country and inside SI "Republican Scientific Blood Center".

IMPORTANCE OF TRANSFUSION INSTITUTE - TURKEY

Dr. N. Nuri Solaz, Turkey

Turkish Blood Foundation

Although Turkey has had first blood transfusion practice in early 1920 ies education on BBTM at pre-graduate medical training has been provided under the different medical branches but there has been no specific post – graduate education for Blood Banking & Transfusion Medicine (BBTM) until 2000.

There has never been an academic and / or practicing institute on BBTM in Turkey so far.

The negative impacts of those situations became a major threat for below listed topics;

a) Insufficiency on academic and scientific researches
b) Insufficiency to attract young medical doctors working at at BBTM organizations.
b) Insufficiency to keep trained / educated medical staff at BBTM organizations.

Either an independent or related with another academic organization the Transfusion Institute will be of benefit to Turkish BBTM field.

1st ANATOLIAN BLOOD DAYS

"NATIONAL GUIDELINES ON BLOOD BANKING & TRANSFUSION MEDICINE"

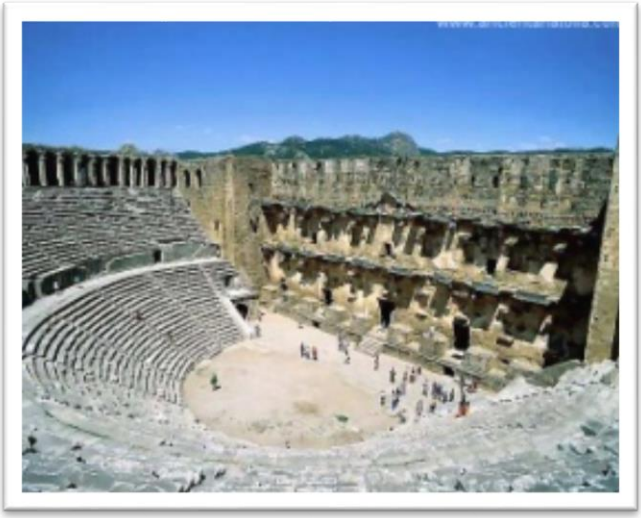
FINAL DECLARATION

The Blood Banking and Transfusion Society of Turkey (BBTST) launched the first Anatolian Blood Days in Antalya Turkey to meet its international and regional responsibilities.

Representatives from transfusion services in the region surrounding Turkey were invited to participate in a 2-day meeting to explore the various approaches to establish the national policy and regulatory framework in their respective countries.

The meeting was convened in the historic Mediterranean sea resort of Antalya, not very far from ancient port of "Side" with its magnificent remains of the temple of Apollo, and the famous city of "Aspendos"

with its superb roman amphitheater and arena built by the Greek architect Zenon in 155 BC.



Participants from 9 services accepted the invitation to meet with experts from the Blood Banks and Transfusion Society of Turkey (BBTST). The group struggled over the 2 "Anatolian Blood days";
17-18 November 2012, to share and exchange experience about the challenges each country faced during setting up of the appropriate national regulatory frameworks and the practical measures to establish safe, reliable and sustainable services.

The discussions revealed that the recommendations promoted internationally were not always "fit for purpose" in dealing with the wide range of challenges met in most of the countries participating in this gathering. Some had already achieved a good deal of progress on the road to developing an acceptable structure for their services.

A number were wondering whether they were on the right track and few were almost defeated by the magnitude of their problems and were not

sure where to start. They were looking for an opportunity, and this forum was ideal to allow them to share their troubles with their colleagues in pursuit of the ideal generic "blue print" approach for defining a policy and guidelines that would be suitable to overcome their problems within an appropriate regulatory framework.

The country presentations revealed individual case studies with widely variable needs, challenges and in some services, what can easily be considered insoluble obstacles as in the case of Palestine. The inhuman fragmentation of services dictated by political, societal and geographical conditions resulting in particular difficulties that required special solutions to discover where to start on the road to development.

The representatives of Bosnia Herzegovina described difficulties of a different kind of fragmentation, this unusual form of state found itself emerging in the epicenter of the Balkan conflict with inherent internal malformations leading to its isolation. Trying, with great difficulty, in the midst of intense surrounding pressures, to establish viable services with normal acceptable criteria of quality, safety and reliability proved to be a daunting task.

The uphill struggle experienced by Albania, Egypt, Iran and Turkey, who were on the road to progress. Building the regulatory framework in these countries has taken time, effort and resources. The example of these four countries provided hope to participants from Afghanistan and Tajikistan where services were challenged by very limited infrastructure and lack of human and financial resources. It was clear that when local characteristics are taken in consideration, specific solutions would be discovered, and the appropriate system will eventually start to take shape.

The group realized from the deliberations that the variation in challenges and problems necessitated to formulate tailor-made solutions and that the off- the-shelf recommendations would be unsuitable and very difficult to implement. In fact they agreed that blind application of inappropriate

measures might lead to problems and even disasters.

A consensus, summarized below in the form of a statement, was arrived at after 2 days of agonizing discussions. This declaration would serve as guidance for those services and health authorities trying to establish safe and reliable transfusion systems for their respective communities.

This initiative led and supported by the BBTST provided the suitable forum to formulate a suitable generic "Blue Print". It is hoped that it will prove useful to assist services in trouble and facilitate the efforts of others looking for ways to resolve the problems on the road to progress in order to achieve sustainability and good quality transfusion practice.

The guest participants were later invited to attend the proceedings of the 5th annual national conference of the society. They found themselves sharing with their Turkish colleagues a comprehensive scientific program with state of the art lectures.

BBTST was established in 1996. It has currently over 500 members with an attendance of over 800 participants in the annual national conferences.

The social program was also rich and varied enough to suit all age groups and tastes. One evening was dedicated for the young, enjoying the standing and “hand-waving” concert atmosphere led by a Turkish well known popular "Diva". The star of the second day was the Symphony Orchestra of Antalya with its impressive well-established conductor Emin Guven Yaslicam and Antalya Philharmonic Orchestra. The hall was packed with seated senior members as well as young professionals that would not release the orchestra before two encores!

It has been a revealing experience to share with the Turkish society their 5th Annual Congress as well as the launch of their neighborly international

initiative to help services in need and prepare the generic blue print for services and guidance for fellow professionals, to take them out of their isolation and share experience without intimidation of high tech, high power meetings, in order to find the way for development, progress and sustainability.

It was a non-threatening friendly forum where professionals from the "G 12" services could share their experiences without reservation or embarrassment and reveal their aches and pains, stumbling blocks, serious worries and concerns on the hope to find assistance from the experience of fellow colleagues who were there and just made it.

Consensus declaration of principles

1. A national blood policy should identify at a high level the direction and strategies to provide a safe and adequate blood supply to meet the needs of the population. The intentions of the policy should be expressed in legislation, supported where necessary by regulations and guidelines. The legislative framework reflects the agreed national policy and identifies clearly the issues that need to be protected and regulated through the legal system.
2. Health Authorities must endorse National laws, regulations and guidelines on blood banking and transfusion medicine and require that relevant institutions and personnel should comply with them
3. Professional bodies and experts in transfusion medicine should be proactive in initiating and supporting the formulation of the national policy and guidelines.
4. The whole process of transfusion from the donor to the patient - should be supported by national laws, regulations and guidelines
5. The application of National laws, regulations and guidelines on blood banking and transfusion medicine must be supported by an effective quality system and an effective regulatory framework
6. Every country must prepare its own national laws, regulations and guidelines on blood banking and transfusion medicine according

to its own situation with regard to its own economic, socio-cultural and health situation. A country in the process of the formulation of national laws and guidelines should examine existing international and national laws and guidelines and may decide to adopt those elements that are considered to be appropriate for that country

7. Development of guidelines on blood banking and transfusion must be the responsibility of those with the relevant professional knowledge and expertise and should be based on the best available scientific and medical knowledge but must also be adapted to each country's health needs and resources
8. The regulatory framework may be published as a single document or as a series of individual documents covering specific topics or meeting the needs of specific user groups. Whatever format is used the documentation must provide all the detailed information required
9. During development of a guideline, it must be made available to relevant personnel for review and their comments must be taken into account in preparing the final document.
10. The completed guideline must be introduced to all relevant personnel by means such symposia, seminars and training courses. It should be widely distributed by appropriate means including making it readily accessible via the Internet.
11. As an essential part of risk reduction, compliance with the guideline should be rigorously monitored by periodic internal and external audit, with prompt feedback of findings to the audited institution and personnel.
12. The impact of the guideline should be evaluated periodically. Guidelines should be subject to a periodic review and should be updated according to the findings of audit and evaluation and new medical or scientific evidence. The review and updating process should enable relevant personnel to contribute their experience. A new edition or revision of a guideline should be effectively communicated to all relevant personnel.

2nd ANATOLIAN BLOOD DAYS

"BEDSIDE TRANSFUSION SAFETY BY CLINICAL NURSE"

FINAL DECLARATION

Second Anatolian Blood Days
Antalya, Turkey. November 25th – 27th, 2013
Sponsored by the Turkish Blood Foundation

This was a follow up of the initiative launched in 2012 by the Turkish foundation (TBF). The proceedings of that first meeting of this initiative were subsequently reported in Transfusion Today No 94 in March 2013.

The Turkish Blood Foundation continued to take seriously its partnership with neighbouring regional transfusion services to share experience. The Foundation believes that these interactive gatherings will provide fairly quick, practical and easily available approaches to enhance and develop the appropriate solutions required for resolving local problems and improving the quality and safety of transfusion practice in their respective services.

The theme chosen this year for ABD-II was "Bedside Transfusion Safety and Training of the Clinical Nurse". It was intended to assist participating services to develop the quality of basic and specialised nurse training to improve the nursing skills and input in transfusion practice.

The Turkish Blood Foundation has been engaged since 2008 in evaluating, developing and establishing curricula and training courses for undergraduate and postgraduate training for nurses at a national level, as well as planning guidance and recommendations for in-service training.

International and European efforts to harmonise the general education and training of nurses can be traced back to 1967 in a publication entitled "The European agreement on the instruction and education of nurses". It was published under the Council of Europe Treaty Series. It was detailed

in 10 articles and two comprehensive annexes. Unfortunately transfusion-nursing activities were not included because the transfusion workforce was not regularly exposed to clinical blood transfusion practice and thus not familiar with bedside transfusion protocols.

In 2002 the council of Europe Committee of Ministers recommended that particular attention should be focused on the regular training and assessment of competency of nursing and junior medical staff who are more directly involved in bedside transfusion practice, as part of the hospital's and clinician's role in the optimal use of blood and blood products. This was followed by Recommendation (2004) 18 for the training and education of nurses in transfusion medicine that was adopted by the Committee of Ministers to member states on 15 December 2004

In spite of all these European initiatives training and education of nurses remained neglected with little national harmonisation of courses and national curricula. The training and educational needs remain not keeping pace with the developing patterns and increased participation of nurses in transfusion and their contribution and key position in particular to safety of clinical transfusion. The purpose of the meeting was to develop a consensus on the training of nurses in clinical transfusion.

Services from 17 countries accepted the invitation and completed a questionnaire to survey local approach to education, training and role of nurses in transfusion practice with special emphasis on bedside transfusion safety. This year participation included 8 participants from Asia, 6 from Eastern Europe, 2 from Europe and even 1 participant from Africa; Ghana. The participants presented detailed reports based on the questionnaire (can be supplied on request).

During the meeting 30 transfusion professionals representing; Albania, Belarus, Czech Republic, Ghana, India, Iran, Jordan, Kosovo, Palestine, Pakistan, Oman, Qatar, Romania, Spain, Tajikistan, Turkey and UK, had the

opportunity to share their knowledge and experience in the field and to report on the situation of nurses related to clinical transfusion in their countries.

The country presentations revealed many problems and fully endorsed the purpose of the meeting. The analysis of the data presented reflected the wide variation in standards, quality and approaches to nurse training as well as the wide difference in activities and input of nurses in transfusion practice. Participants agreed generally that a policy for clinical transfusion medicine should be developed at the national level.

They also agreed that comprehensive training for nurses in clinical transfusion should be included in schools of nursing and also at hospital levels. Discussion supported the importance of In-service training and on the job education courses in specific areas such as hospital and bedside transfusion, heamovigilance, stem cell collection, therapeutic exchange and other clinically related areas of clinical transfusion practice. The country representatives fully endorsed the purpose of the meeting as expressed in the following final declaration and consensus statement.

Anatolian Blood Days Workshop-II
Final Declaration and Consensus Statement

Purpose and Activities of the Meeting

The purpose of the meeting was to develop a consensus on the training of nurses in clinical transfusion. Nurses have a key position in ensuring the safety of blood transfusion in the hospital setting.

To discuss this important subject, the Turkish Blood Foundation convened an international meeting as the subject of the Second Anatolian Blood Days, November 25 -27 2013.

The participants in the meeting took into consideration the official Recommendation ((2004) 18 of the Council of Europe on teaching transfusion medicine to nurses, which includes the following statements.

Recent reports on risk assessment in blood transfusion demonstrate that more than 30% of serious adverse reactions and untoward events associated with blood transfusion are due to human errors and system errors in the blood transfusion chain (vein-to-vein). These can be fatal or cause major or minor morbidity to the transfused patient
Explanatory Memorandum Item 2

Most errors occur in blood sampling from the patient, in prescriptions of blood components, in the laboratory of the blood establishment or blood services, during collection of donor blood and in the ward where blood components are administered
Explanatory Memorandum Item 3

Haemovigilance systems stress that complications of blood transfusion can be avoided or reduced by the application of safety measures before, during, and after transfusion
Explanatory Memorandum Item 4

Blood transfusion safety depends largely on the nursing staff (while doctors are responsible for prescribing) involved in the transfusion of patients in hospitals or at home.
Explanatory Memorandum Item 5

Reports from Europe, the USA and elsewhere on evidence-based practice in the field of blood transfusion, stress that inadequate training of nurses is a key determinant of poor transfusion-related knowledge and practice of transfusion safety measures
Explanatory Memorandum Item 6

Therefore there is a need to determine common basic principles for pre and post-graduate education of nurses in the clinical setting, and to define a common basis for good transfusion practice
Explanatory Memorandum Item 9

During the meeting 30 transfusion professionals representing 17 countries gave presentations on their own services. They presented evidence of inadequate training of nursing personnel in clinical transfusion that confirmed the need for work on this subject.

After a plenary discussion the participants formed three working groups dealing with
1) The core training common to all of nurses during their initial education (pre-graduate training),
2) The training required for all in-service nurses who have any responsibility in the clinical transfusion process, and
3) The characteristics and role of the nurse dedicated to or specialized in clinical transfusion.

Based on the reports presented by each working group a draft consensus statement was prepared and discussed. The final statement agreed by the participants is shown below.

Consensus Statement

1. The curriculum for education and training of nurses in the topic of clinical transfusion

- Should be clearly defined and the method of delivery should be practically achievable.
- The latter requirement is especially important for in service training
- The core curriculum for nurses in training and for in-service nurses should be similar
- In service training should give special emphasis to practical procedures that affect patient safety.

- The pre-graduate core curriculum should preferably be covered as a single block rather than distributed among different parts of the course.

2. The core curriculum should cover the following topics

- Responsibilities of the nurse in clinical transfusion.
- Knowledge of regulations and guidelines on blood transfusion
- Compatibility of the blood component with the patient: ABO types, hemolytic transfusion reactions and prevention. Prevention of Rh immunization
- Description of the main blood components, main indications, storage handling and administration
- Complications of blood transfusion
- Description of the clinical transfusion process
    - Informed consent
    - Request form, sampling and patient identification
    - Receipt and visual inspection of the component unit
    - Pre-transfusion identity checks to ensure that the blood component is the one intended for the patient
    - Baseline observation of vital signs
    - Administration of the blood component
    - Monitoring vital signs
    - Recognition of signs of acute transfusion reactions and initial management
    - Finalization of transfusion (completion of transfusion record, discard of blood pack and giving set).
    - Ensuring traceability of each unit transfused by completing the required documentation

3. With respect to the dedicated nurses in clinical transfusion, it was agreed that role requires a person with good clinical experience and skills,

preferably including experience in a clinical specialty in which transfusion is used.

The role involves coordination, communication and the promotion of change and quality improvement, so a successful appointee will have a good aptitude for management. Specific tasks of the dedicated nurse would include

- Leading the implementation of training in clinical transfusion
- Co coordinating Haemovigiliance reporting
- Promoting best clinical transfusion practice
- Co coordinating a program of transfusion audits
- Providing progress reports to the Hospital Transfusion Committee (HTC)
- Participating as a full member of the HTC

Readers are invited to send comments, on the consensus statement and final declaration given below, or share their experience with the Transfusion Society of Turkey by writing directly to:

3rd ANATOLIAN BLOOD DAYS

"COMPARISON OF THE SOCIO-ECONOMIC CONDITIONS"

FINAL DECLARATION

Third Anatolian Blood Days
Antalya, Turkey. November 30th – December 2nd 2014
Sponsored by the Turkish Blood Foundation

Anatolian Blood Days; an international workshop by Turkish Blood Foundation

The Turkish Blood Foundation initiated annual international workshops in 2012 under the name of Anatolian Blood Days. The aim is to share experience of problems and challenges that are common to many Transfusion organisations but are rarely discussed at national or international conferences. Anatolian Blood Days aims to identify and discuss the "untouchable" topics and help to identify ways forward.

The third workshop in November 30th – December 2nd 2014 addressed the socioeconomic conditions of blood transfusion staff compared with those of other medical disciplines, and the influence of these employment conditions on the morale and job satisfaction of staff and on the effectiveness and efficiency of the transfusion service. A central theme was the inconsistency that exists within hospitals, regions and countries in the pay and conditions of each category of staff, when transfusion service staffs are compared within other specialties departments, or organisations and the adverse effect that this can have on staff morale and performance.

In advance of the meeting the organisers had carried out a survey among the invited participants to obtain information about employment conditions and staff morale in transfusion services in their countries.

Twenty three countries were represented by 51 participants. Each country gave a short presentation on their situation with regard to the current situation of staff and identifying particular difficulties or challenges for their service. At the end of the first day a summary was prepared of the main themes emerging in the discussions.

These were formed into topics and tasks for each of three working groups. Each group was asked to concentrate on an aspect of actions that might be taken to improve pay and employment conditions of staff.

Despite the 3 different remits, the conclusions of the three working groups were quite convergent. The consensus statement that follows is based on these discussions and reports.

The consensus statement;
1) Transfusion is a critical element in the working of any health service
2) The resources allocated to transfusion should be sufficient to ensure that it will sustainably meet the requirements
3) An effective transfusion service depends on the quality and morale of its staff
4) The morale and performance of staff is influenced by the quality of their working environment, quality of management, perception of the value of their work
5) The external or public and community image of the service is exceedingly important.
6) It comprises also adequate financial rewards, and conditions such as, job security, prospects for further training and promotion, pensions, and paid vacation allowance.
7) Good management and leadership is a critical factor and generally requires an individual with a good knowledge and understanding of the work of a transfusion service
8) The manager must have the ability to set clear objectives and ensure that both good and inadequate staff performance is recognised and deal with effectively.

9) Managers should have the right and duty to select staff for their own departments it must be recognised that transfusion is acknowledged to be a specialised entity per se
10) Blood transfusion must learn to be business like. Services must take steps to obtain and use the essential data required to manage effectively and to argue effectively for the resources required.
11) Transfusion services should not be profit driven, since the “raw material” is human blood given by people who generally do not wish it to be used for the profit of others

Anatolian Blood Days will be organized with the topic of “cost calculation of blood components and reimbursement systems” at December 13-15; 2015 at Antalya /Turkey.

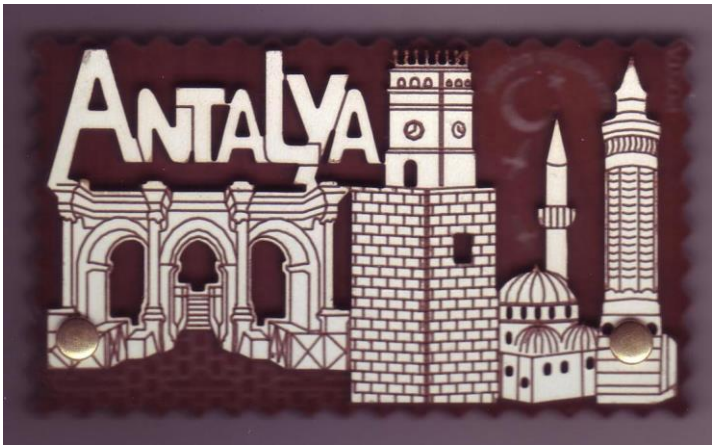
4th ANATOLIAN BLOOD DAYS

"COST CALCULATION OF BLOOD COMPONENTS & PAYMENT SYSTEMS"

FINAL DECLARATION

Fourth Anatolian Blood Days
Antalya, Turkey. December 11th – 13th, 2015
Sponsored by the Turkish Blood Foundation

Anatolian Blood Days; an international workshop by Turkish Blood Foundation



Introduction

Developing blood transfusion services is a costly and complicated undertaking particularly that they have remained a low priority within health care budgets. They often struggle against competing demands for increasingly restricted resources

The challenge facing blood services, particularly in countries with economically limited resources, is to ensure adequate funding for their blood programs. Managers need accurate costing information for better financial long-term planning to maintain quality and sustainability of services.
Recognising the crucial importance of these problems, the World Health Organisation published, in 1998, a practical manual that provides simple, practical and comprehensive tools for costing, cost-analysis and budgeting for blood services (see reference below). It remains valuable to this date and deserves to be reviewed and updated in the light of the substantial developments in transfusion services and practice.

As in previous years the aim of the Anatolian Blood Days is to explore areas of blood banking and transfusion medicine that are not commonly discussed in blood transfusion circles and yet crucial to the quality, safety and adequate supply of blood and components.

This year the 4th Anatolian Blood Days, chose the topic entitled "Cost Calculation of Blood Components & Payment Systems". The meeting was sponsored and hosted by the Turkish Blood Foundation and held in Antalya, Turkey.

A questionnaire entitled "Cost Calculation of Blood Components & Payment Systems" was circulated and completed by the participants. The findings were presented orally as country reports and discussed, over a 3-day meeting and workshops, by over 40 representatives from 29 countries. The various approaches to costing, financing and cost recovery of blood services were debated. The outcome of these discussions are summarised below as a "Consensus Declaration". A summary of the findings of the questionnaire is given at the end of this report.

CONSENSUS DECLARATION

1. Systems for cost estimation;

- The reports presented highlighted the magnitude of the challenges faced by blood services to develop a suitable approach for reliable costing and financing mechanisms, in order to maintain economic viability and continued development in the face of the increasing health care demands for safe blood transfusion practice.

- The discussions revealed that the operational, scientific and medical teams required close cooperation with financial experts and health economists to determine which are the most appropriate cost collection tools to use for blood services.

- The definition of words used in the communication process, like in any specialised field, means almost, but not quite the same as their use in every day life. It became clear from the discussion that there is a special technical language used in economic, financial and accounting business circles. Frequent use, repetition and writing of these standard terms reinforces the grasp of their functional meaning and helps to establish a common medium for liaison and cooperation between the groups involved in building up of the basic financial and economic structure of the service.

- Moreover, the meaning of the business terms used can carry a slightly different slant. Blood transfusion services rely on the good will of voluntary non-remunerated blood donors consequently terminology and definitions used, could affect relationships with the voluntary blood donor who is the corner stone and real owner of this service and can adversely affect the moral and ethical aspects of this altruistic community endeavour

- When the cost of blood products is translated into cash value. Donors would object when these are sold at a profit. They may

however accept it if this profit is reinvested to modernise and expand blood banking services or improve the comfort of donors by increasing the number of donor care staff to to oversee more closely and intervene faster when adverse reactions occur

- The details of the various costing approaches were discussed and it became clear that the ABC system with bottom-up approach is commonly used in many health care establishments. This approach is claimed to provide adequate information because it involves employees who are familiar with technical operational details. It also increases their understanding, commitment and motivation towards the importance and necessity of cost calculation. On the other hand quality based costing (QBC) would be the appropriate tool to use for the implementation of particular plans designed to improve quality and operational strategies.

- All costing approaches must be based on clear comprehensive information provided to the finance specialist describing the details of the range of products and the component elements of the operational activities involved in preparation of the products as well as the related services provided. Any system selected should take into consideration direct and hidden costs as well as capital overheads including maintenance, depreciation and regular service contracts of equipment.

- Once the system is selected it is advisable to continue to use it as a standard mechanism to ensure consistency and maintain sustainability. It should ultimately aim to establish pricing based on the calculated unit cost of products and services provided, in order to obtain the suitable funds for cost recovery.

2. Objectives for costing of services;

- The basic objective of costing of blood services is to establish a clear financial and administrative identity for blood transfusion services to encourage the development of independent budgets and structures for the blood transfusion services within an integrated health care system.

- Cost analysis provides information about productivity and cost-effectiveness of blood transfusion establishments by measuring defined output indicators to identify specific services and activities that could be used as models for upgrading the efficiency and effectiveness of programs for the purposes of global, regional and national resource requirements.

- Both cost estimation and cost analysis of blood services are also essential to undertake realistic planning for future improvement or expansion of services. They provide information to help managers develop realistic budgets, demonstrating financial accountability and presenting realistic information about the performance of blood transfusion facilities thus ensuring that accurate information is available to aid in financial decision-making and to provide support for resource mobilisation.

- Costing can also be useful in routine efficiency monitoring of component production in hospital blood banks to facilitate regular analysis of cost effectiveness and for routine evaluation of performance in order to document successes and failures and measure the financial impact of specific interventions for development.

3. Factors affecting financing of blood services;

- The level and degree of development of health care services are highly interdependent with the state of the national economy. These two factors, in several ways control the available resources

and dictate the range, quality and availability of products and services provided in any given community.

- As an example, the inability to afford appropriate treatment strategies for patients with bleeding and haemoglobin disorders, limits access to services and treatment options because of the elevated pricing and unaffordable cost of these services. Special approaches for costing, cost analysis and budgeting are needed to secure funding and recover the cost incurred to meet these specialised clinical and therapeutic interventions.

- In many countries, with limited resources and competing health care needs the shortage of specific consumables and equipment can lead to compromised quality and safety of services as well as the range of blood products. Regular monitoring of costing and budgeting procedures are required to redefine priorities and allocate funding resources according to newly arising needs.

- Establishing a budget for transfusion services separate from the traditional approach of being linked with that of laboratory services will highlight the particular and specific needs of blood services among all the other competing health care disciplines.

- Blood services have essential and specific requirements that affect the development of health care delivery across the wide range of clinical practice. Costing must be implemented irrespective of economy level and taking in consideration possible fluctuations of economy to maintain adequate blood supplies and sustained quality standards.

- Staff and patient's attitudes should be positive to cost accounting. Cost estimation culture should be considered in all situations as mandatory activity in order to secure financing sustainability and continued development of the services.

- Decision makers should not be affected by irrelevant cultural beliefs and out-dated practices. Benchmarking with other peer countries can highlight essential indicators for best practice and new areas for service and quality improvement. International standards and recommendations have to be adjusted to local situations in order to gain support of decision makers.

- Industry pressure through media, blood donors or patient's expectations, can affect policy makers and other stakeholders in adopting new technical developments. Decisions to introduce improved technologies must always be evidence-based and in consultation with scientific and clinical experts in the service.

- Epidemiology of transfusion transmissible infections affects testing strategies; accordingly costing allocation should follow validated, relevant and evidence-based algorithms for testing procedures.

- Natural disasters such as floods earthquakes do affect the basic infrastructure of transfusion services and could even lead to total collapse of services requiring major rehabilitation at high and unforeseen cost.

- Man made disasters including civil wars, breakdown of law and order, instability due to civil wars, terrorism and political tensions between countries associated with economic sanctions threaten the sustainability and safety of blood services as well as the availability of blood and its components. Back up plans should always be included in budgets to provide funding in case of such unexpected adverse circumstances.

4. Cost Recovery and financing of transfusion services

- Without cost collection and cost analysis, blood services cannot provide governments and funding agencies with the evidence required to develop and maintain sustainable national programs.

- Considerable debate took place about the desirability of different costing and cost management mechanisms to facilitate formulation of cost recovery policies. Only information and plans based on concise tools for cost calculation and cost analysis can reliably be put in practice and communicated to secure appropriate resources.

- Regardless which system is chosen cost should always be recovered in order to ensure that the blood program is sustainable and avoid as much as possible any likely burden to individual patients. Nevertheless country reports presented showed that there was place for a limited role for some form of patient participation although it was suggested from the discussion that charging patients for blood was always administratively complicated and costly.

COSTING BLOOD TRANSFUSION SERVICES
WHO/BLS/1998
http://www.who.int/bloodsafety/transfusion_services/en/Costing_BTS_Eng.pdf

Cost Calculation of Blood Components & Payment Systems		
Questions	**Summary and analysis of findings from responses to the questionnaire**	**Countries**
1. Who is the provider of blood components in your country?	The national blood transfusion service represented in the ministry of health is the sole provider in	10
	In most of these countries the transfusion services were centralised allowing conditions for appropriate cost estimation and	

	financing.	
	The bulk of the cost was recovered through national health organisational systems based on clearly laid down budgets	
Role of the Red Cross/crescent societies?	The red cross/red crescent national societies were involved in supply of blood to varying degrees in	7
Role of hospital blood banks?	Provision shared by hospital blood banks in	3
Role of private facilities	Shared by private institutions in	5
2. Mechanisms for financing of blood services	It was difficult to ascertain the mechanisms for financing in countries with multiple blood providers and fragmented hospital-based transfusion services.	
	The providers calculated the cost and assigned the price in	4
	In most cases cost is recovered from the patient directly or with some participation from insurance.	
3. Who is the official body that defines the price of blood	Prices were determined by specially established national agencies in	19

components?		
Mechanisms of cost recovery	The cost, in most of these countries, was covered by the National Health Authorities, with insurance participation in some	
Patient contribution	Some form of patient participation was reported, particularly in private hospitals and in private blood banks.	11
	In some of these the charge was met through health insurance.	
4. Unit price of red cells?	The price assigned for one blood unit varied widely between 13 and 125 Euros.	
	There seemed to be no costing system implemented in	3
	In these countries products were provided free of charge for patients by a central organisation that is funded through the National Health Authority.	
5. Elements included in the final cost of blood components	Staffing costs headed the list of expenditures in	11
	Cost of consumables and equipment headed the list in	11

	In countries with several providers it was difficult to establish clear ranking of the cost of the various blood products.	
6. Irradiation of blood components	Access to irradiation facilities was only available in	9
7. Pathogen inactivation	No sustainable resources were available to implement pathogen inactivation methods in	17
	Universal pathogen inactivation was available in	7
	Partial or selective pathogen inactivation was implemented in	3

Turkish
Blood Foundation

Blood Banks and
Transfusion Society of Turkey

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