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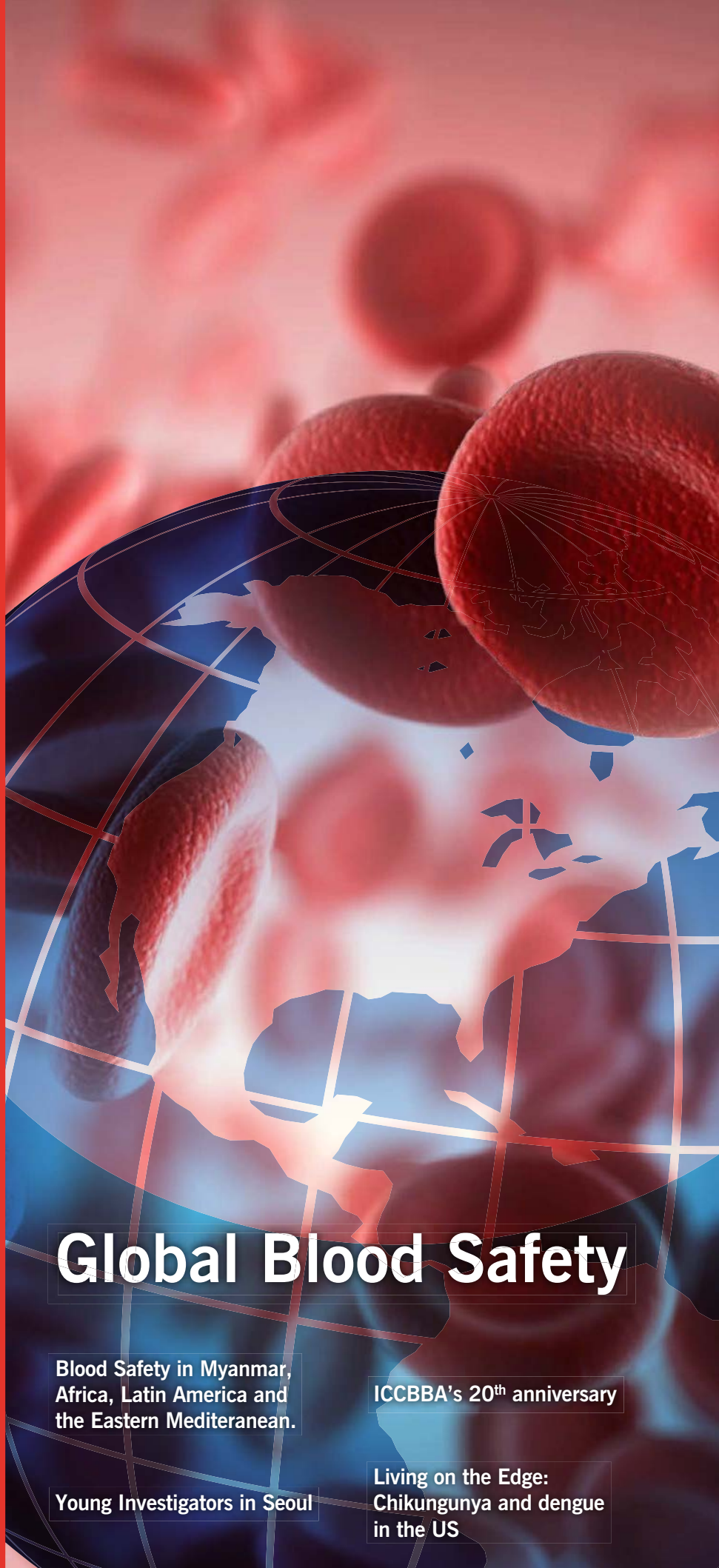

Global Blood Safety

Blood Safety in Myanmar, Africa, Latin America and the Eastern Mediteranean.

ICCBBA's 20th anniversary

Young Investigators in Seoul

Living on the Edge: Chikungunya and dengue in the US

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Judith Chapman

Editorial

ISBT has members in 105 countries across the globe and this gives a uniqueness to our Society. We appreciate that members are willing to share their stories about transfusion medicine in their country with the ISBT community and ISBT seeks to help members from around the world to work towards a safe, high quality transfusion service to patients, through the educational content of its congresses, journal and latterly its educational ePortal.

All the Academy sessions at ISBT congresses are presented on the ePortal so there is a wide range of educational material available. If you have not yet accessed any of these presentations we encourage you to do so. As of the International congress in Seoul ePosters are also included on the portal.

ISBT is keen to encourage younger members to participate in the Society and its activities. We started with the Young Investigators (YI) breakfast sessions at the International congress in Cancun and these sessions continued in Amsterdam and Seoul and we will host one at the 25th regional congress in London. A LinkedIn group for young investigators was launched in November and is proving to be popular amongst YIs as a way of encouragement, discussion and networking. We are exploring other ways of bringing YIs from across the world together.

I send you best wishes for the holiday season and for 2015 and look forward to meeting many of you either in London or at the 26th Regional congress in Indonesia.

Silvano Wendel
Medical Director Blood Bank Hospital Sirio Libanes São Paulo

Jean Pierre Allain
PI Cambridge University departement of haematology

Introduction Global Blood Safety

Blood safety cannot be regarded as a static point once pre-defined targets are achieved; on the contrary, continuous challenges are constantly taking place in the field and professionals must be prepared to overcome them whenever a new threat or changing scenario appears. The previous experience with epidemic influenza, SARS and MERS-CoV affecting the safety of blood supply in several countries of the world has brought a considerable aid for medical agencies to fight against a new threat: the newly Ebola virus epidemics in Africa. Although we do not fear for now that this terrible haemorrhagic viral disease might be primarily spread by blood transfusions, WHO has recently launched an interim guidance regarding the “use of convalescent whole blood or plasma collected from patients recovered from Ebola virus disease for transfusion, as an empirical treatment during outbreaks”[1]. Although there are as of mid-October, 2014 more than 8,000 cases described in Africa, new cases have been described in other countries, and probably others will follow. Despite the several uncertainties about how to deal and control this current outbreak, it is undeniable that Transfusion Medicine specialists must be actively prepared to embark on this new problem. And that is the main scope of the ISBT Working Party on Global Blood Safety: to foster specialists in the field in order to promote not only the understanding of the current situation in several regions, as discussed in the series of three articles in this issue of Transfusion Today, but also helping international agencies in the collaboration of developing different tools and strategies whenever Blood Safety is concerned[2]. It is only through the mutual effort of many interested parties that Blood Transfusion Services will remain as safer as ever.

1. World Health Organization - Use of Convalescent Whole Blood or Plasma Collected from Patients Recovered from Ebola Virus Disease for Transfusion, as an Empirical Treatment during Outbreaks - Interim Guidance for National Health Authorities and Blood Transfusion Services. Version 1.0 September 2014. WHO/HIS/SDS/2014.8, available at http://www.who.int/csr/resources/publications/ebola/convalescent-treatment/en/

2. Burnouf T, Emmanuel J, Mbanya D, El-Ekiaby M, Murphy W, Field S, Allain JP. Ebola: a call for blood transfusion strategy in sub-Saharan Africa. The Lancet - Published online September 30, 2014 http://dx.doi.org/10.1016/S0140-6736(14)61693-7

In Focus Global Blood Safety

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Blood Safety in Eastern Mediterranean Region

The provision of safe and adequate blood is a government responsibility and should be an integral part of each country’s national health care policy and health care infrastructure.

In many countries, demand outstrips supply, and blood services throughout the world face the challenge of making sufficient supplies of blood products available, while also ensuring the quality and safety of these products in the face of known and emerging threats to public health. The WHO strategy for blood safety and availability, endorsed by the World Health Assembly, addresses five key areas: i) establishment of a well-organised, nationally-coordinated blood transfusion service, ii)collection of blood from voluntary unpaid blood donors from low-risk populations, iii)quality-assured testing for transfusion-transmittable infections, blood grouping and compatibility testing, iv)safe and appropriate use of blood and v) quality systems covering the entire transfusion process.

Developed countries have implemented various strategies to ensure the availability, accessibility, safety and quality of all blood products through effective programmes.. Conversely, availability, accessibility, safety and quality comparable to those in developed countries do not yet exist in most of the developing countries, which still face serious shortages of blood products. The risk of transmission of pathogens through transfusion has not yet been eliminated, particularly in countries where the prevalence and incidence of those infections is high. The failure to apply quality systems and implementation of good manufacturing practices to production activities in blood services is a major impediment to ensuring safe and sufficient supplies of blood products. The provision of blood and blood products from voluntary, non-remunerated donors must be the aim of all countries.

There are 23 countries in Eastern Mediterranean Region (EMR) (Map) with variable economic and political situations which reflecting on the level of health care system in those countries. Although the level of blood transfusion services differs from country to country, there are general improvements to be made when it comes to safety and quality of Blood Transfusion.

Few countries established a national system already as well as strategy for improving services. In most of the EMR countries there are specific issues requiring action including increasing need of blood, blood shortages and wastage of blood products, inappropriate use of blood products, high risk of transfusion-transmissible infections emerging and re-emerging threats, poor quality systems, lack of good manufacturing practices and lack of regulation of blood products in general.

Although certain countries in the region have specific educational programs to improve the quality of staff working in transfusion chain, there is still need for training for all staff working in transfusion chain in the rest of these developing countries.

In conclusion: there should be a clear national strategic plan and policy for blood transfusion with the commitment of the leadership and participation of national and international organization and societies for the improvement of Blood transfusion safety and quality in all countries in the region.

Thida Aung
National Blood Centre,
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Update on blood safety in Myanmar

Introduction
Since 1939, a blood transfusion service has been available in Myanmar. The complete history of blood transfusion practice in Myanmar has been published in the Asian Journal of Transfusion Science in 2009[1]. This article will be an update. Advocacy, social mobilization, quality control improvement and expansion of core business and introduction of advanced technologies, were the main pillars to strengthen the national blood safety program in the last decade.

Advocacy
The National Blood Centre (NBC) has been promoting to involve the government in the blood safety program. And recently, the government was found to be more committed to the program. A free blood transfusion service policy was launched in 2013 and all the necessary consumables have been supplied by the government.

Social mobilization
Regular and voluntary non-remunerated blood donors from low-risk populations are the foundation of a safe and adequate blood supply[2]. The NBC has been encouraging the people to participate in this life-saving program and encouraging the blood banks to establish the voluntary donor group. As a result, data from 148 different blood banks were included in the NBC report and showed that 77.6 % of all blood donations were from voluntary donors in 2013 (Table 1). In general, involvement of religion was key for mobilizing and motivating the people. NBC also encouraged private companies to contribute for the program as a "CSO". In addition to organizing regular mass donation by the employees, some private food companies donated refreshments for donors and some companies supported HBV vaccination.

Quality improvement of core business
The NBC also set the standards for services in Myanmar. Therefore, NBC started to provide blood components in 2004, while preparing the necessary equipment was difficult at that time. However, blood components became available in most of the general hospitals after a while. Also, an adverse event reporting system was introduced in the NBC.

Expansion of the quality services
Current blood transfusion services in Myanmar adopted a decentralized service model in which most of the hospitals have their own blood bank[3]. NBC has strengthened the capacity of each blood bank and provided various training programs related to standard operational procedures for blood transfusion. Two-hundred-eighty-one blood banks were already trained as of September 2014. NBC also conducted regular site visits to provide technical support for the blood banks. NBC visited 28 hospitals in total in 2013.

Since data management capacity is crucial in quality improvement, NBC supported 34 blood banks to introduce a computerized system for blood transfusion services, which was developed by NBC. Those 34 blood banks were expected to function as regional blood centres in the future.

Introduction of advanced technology
NBC has been actively introducing advanced technologies including computerized donor registration systems with finger-print identification in 2013, which also contributed to blood safety. A barcode system for blood products was also introduced in 2014. Since transfusion transmissible infections (TTI), HBV in particular, are found more common in specific regions, when compared to other regions (Table 1), it is important to improve the screening. Currently NBC introduces Nucleic Acid Testing (NAT) methods to improve the screening methods.

Conclusions and moving forward
Overall, Blood transfusion services in Myanmar have been strengthened to provide safer blood to people in need. The need for a high-quality blood transfusion service has been growing rapidly as the country's situation is changing. For further quality improvement, there should be a gradual shift to a centralized service model, while the infrastructure in remote areas of Myanmar still need to be improved in order to establish a good transportation network for blood products.

Table 1

State/ Region	Number of blood banks reporting to NBC	No. of donations	% of voluntary donation	Deferral rate*	TTIs screening positive			
					HIV	HBV	HCV	Syphilis
Ayeyawaddy	26	30,591	93.5%	3.13%	0.25%	2.59%	0.23%	0.58%
Bago (East)	12	10,289	79.9%	1.60%	0.26%	2.26%	0.35%	1.03%
Bago (West)	12	6,447	92.9%	1.23%	0.25%	1.95%	0.45%	0.88%
Chin	1	544	52.8%	0.55%	0.37%	2.57%	0.55%	0.00%
Kachin	6	8,225	77.2%	13.32%	0.90%	3.67%	1.93%	1.06%
Kayar	1	3,275	96.5%	4.77%	0.37%	3.02%	0.67%	0.55%
Kayin	5	7,201	91.1%	0.03%	0.46%	3.32%	0.56%	0.96%
Magway	11	14,696	88.8%	6.53%	0.29%	1.88%	0.22%	0.69%
Mandalay	8	45,732	61.7%	4.01%	0.23%	2.25%	0.51%	0.45%
Mon	11	8,915	62.6%	1.74%	0.16%	2.41%	0.34%	0.36%
Nay Pyi Taw	3	9,032	68.2%	1.58%	0.37%	3.00%	0.79%	0.79%
Rakhine	4	4,745	88.7%	1.90%	0.32%	3.35%	1.66%	1.03%
Sagaing	20	16,621	80.5%	3.12%	0.09%	2.34%	0.39%	0.28%
Shan (East)	1	781	97.8%	8.55%	0.38%	3.07%	0.38%	0.64%
Shan (North)	4	6,860	57.7%	0.15%	0.47%	2.59%	0.74%	0.60%
Shan (South)	5	4,567	77.7%	17.05%	0.42%	2.26%	0.70%	0.96%
Taninthayi	4	6,487	98.9%	1.79%	0.25%	3.61%	0.52%	1.05%
Yangon	12	83,224	78.2%	12.51%	0.26%	2.09%	0.36%	1.04%
Total	**146**	**268,232**	**77.6%**	**7.06%**	**0.28%**	**2.36%**	**0.48%**	**0.76%**

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1 Aung T: Status report of the blood transfusion services in Myanmar. Asian journal of transfusion science. 2009;3: 22-5.
2 WHO: Towards 100% voluntary blood donation: a global framework for action. 2010. http://www.who.int/bloodsafety/publications/9789241599696/en/ (Last accessed.
3 WHO: Design Guidelines for Blood Centers. 2010.

Blood Supply and Safety in Africa

Ravi Reddy
COO, South African
National Blood Service
ISBT Board Member

The Blood Transfusion infrastructure in Africa varies quite significantly among the 43 countries that report their data to World Health Organisation (WHO). Significant efforts have been made over the last decade, with the aid of external funding, to improve the Blood Transfusion Services in these countries. So far, the key focus areas have been:

- increasing voluntary donors and moving away from family replacement donors
- improving blood safety and quality systems

The major challenge still remains to procure sufficient whole blood to meet demand. In 2013, many of these countries still collected less than the 10 units/1000 population which is recommended by WHO for developing countries. Factors such as poverty, malnutrition, unemployment and underlying disease burden, severely limits the potential donor base in these countries. A survey on blood safety in the Africa Region shows that blood donation rates remains significantly lower than the WHO recommendations. Additionally, most countries are still trying to achieve a 100% Voluntary non-remunerated repeat blood donor (VNRBD) base. Table 1 shows the blood donations and donation rates in various countries. When South Africa is excluded from the Group A countries that report at least 80% voluntary donations, the donation rate is only 2.8 vs. 7.3/1000 population in Group B countries which still largely rely on family replacement donors.

A limitation of the data collected is that in some countries there is no co-ordination of blood collection data and there might be hospital-based Blood Banks in rural areas in which the safety and quality of products issued is a major concern.

Table 1: Blood Donations and Donation Rates in Africa

Country Group	Countries (n)	Total Blood Donations (n)	Population (n)	Donation Rate /1000 people)
Group A (at least 80% VNRBD)	19	1,980,349	437,286,128	4.5
Group A (excluding South Africa	18	1,080,349	387,286,128	2.8
Group B (50 to 79% VNRBD)	7	666,783	91,255,989	7.3
Group C (<50% VNRBD)	17	839,060	285,264,867	2.9
All Countries	43	3,486,192	813,806,984	4.3

There is universal screening for anti-HIV and HCB-antigens. However, a few countries still do not test for anti-HCV. Most of the countries do not have access to external quality assurance programmes. Therefore, in a number of countries the quality of testing remains a concern. A survey conducted in a few French- and English-speaking African countries indicated that a number of testing laboratories failed to detect positive samples. Additionally, only 17/43 (39.5%) countries performed confirmatory testing for transfusion-transmitted diseases and robust algorithms are lacking for repeat testing, confirmatory testing and discard or release of donations. A significant percentage of blood donations with false positive results are discarded and this contributes further to the shortages. There are significant challenges in some countries with deferral of donors and counseling resulting in these donors coming back to donate. With poorly developed Information Technology, it becomes very difficult to identify the positive donors, which often leads to new donations and further increasing risk to the blood supply.

In conclusion, developing countries continue to face a multitude of obstacles and challenges in ensuring a sustainable and safe blood supply. A multi-faceted approach of strengthening blood service co-ordination, infrastructure, quality systems, human resources, financial sustainability, information technology systems and ensuring a sustainable donor base is required.

Blood Safety in Latin America

Oscar W. Torres
Past President- Grupo Cooperativo Iberoamericano de Medicina Transfusional-GCIAMT

Latin America is a large region that extends from Mexico to Chile and Argentina and includes 18 Spanish (18) - and Portuguese-speaking (1) countries. In all of the countries, the Ministry of Health periodically collects data about their Blood Transfusion Services activities.

With the exception of Costa Rica, Ecuador, Peru and Uruguay, almost all of the countries have a National Blood Program. In the majority of the countries Legislation on Transfusion Medicine exists and Guidelines for clinical use of blood products are used, however, this is not the case in Chile, Costa Rica, Ecuador, El Salvador, Peru and Uruguay.

In relation to donor selection criteria, all Blood Banks have guidelines based on both International (PAHO, WHO, ISBT, AABB, etc) and national standards, which also takes into account the epidemiological data from the regions.
The percentage of deferred blood donors (BD) is 20% and the number of blood units collected during 2013 was 9.387.470. In regards of the type of BD, only Cuba and Nicaragua state 100% voluntary BD. Importantly, in other countries, the number of replacement BD is still high. And it is disturbing to observe that the Dominican Republic, Honduras and Panama report paid BD.

In terms of transfusion-transmitted disease screening, 100% of blood units are tested for HIV, HBV, HCV, Syphilis and Chagas Disease only in endemic countries. Brucellosis is measured in Argentina, Mexico and Peru. Malaria is screened in Brazil, Bolivia, Panamá and in Colombia only in endemic areas. Anti-HTLV I-II is determined in countries where the infection is endemic, with the exception of Bolivia.

Few countries are implementing Nucleic Acid Testing (NAT), although, in Argentina and Mexico this is not mandatory. Some institutions (public and private) do screen for HIV,HCV and HBV and since the beginning of this year, in Brazil it is mandatory to perform NAT for both HIV and HCV. In contrast, only one Blood Bank performs NAT in Colombia.

Haemovigilance Systems (HS)
Only Brazil (since 2006) and Colombia (since 2009) have well-structured HS in place. Cuba has a regional pilot since 2003 and this will expand in the future. Bolivia and Paraguay do not have any HS in place.
Although it is mandatory to notify HV data, in Chile, Guatemala, Venezuela and Mexico, only few institutions send information regularly. Costa Rica, Ecuador and Peru do record HV data in some institutions, but do not report to the government agency because this is currently not mandatory.

There is currently no information from Nicaragua, El Salvador and Panama. Furthermore, Honduras records some data voluntarily.In Argentina, Association of Haemotherapy is developing a voluntary HV Program among its members. Overall, in all cases there is a “underreporting” of data and was it very difficult to obtain information about the number of units were transfused last year. In addition, it is important to note that there are three different locations for plasma fractionation. Cuba and Venezuela are processing their own plasma, while in Argentina plasma from Argentina, Uruguay, Chile and Ecuador is processed.

The reasons why we do not a have better Blood Safety can be divided in the following:
Political: Either absence of an operative blood programme or National legislation; lack of political initiative and non-existent centralized processes.
Resources: insufficient human resources (general and/or specialized) and funding.

In conclusion, fortunately Blood Safety is in progress in many Latin American countries.

While some countries have achieved 100% voluntary donations, progress has been slow and insufficient in the majority of the countries.

Therefore, it is necessary to change some paradigms: BS is part of public health.

There are numerous factors that affect BS in the region; in some cases a National Blood Programme is non-existent. However, in all countries, there is a growing awareness of the need of HS implementation, despite the lack of political initiative. Therefore, PAHO, the international Scientific Societies and professionals have to work jointly in order to demonstrate and persuade health authorities about the importance of transfusion safety, guiding them and seeking solutions to minimize the obstacles that prevent its implementation and deployment with concrete political actions according to the possibilities of each country.

Celso Bianco

Epidemics of more recently recognized infectious diseases, some transmissible by transfusion, others where transfusion is not the major mode of transmission, bring back thoughts about the tragedy of HIV and highlight the human development inequalities in our world. The public reactions to the ongoing Ebola epidemic in West Africa remind me of the irrational fears of the early days of HIV, when people were afraid of public bathrooms and donating blood, and dentists were concerned about treating patients. Similar public reactions occurred when SARS was recognized a little over 10 years ago. Fear has stimulated a lot of involvement and substantial support for blood safety by developed countries and international organizations. However, the perception that these efforts were successful and that developed countries have safe blood led to a new phase of diminished support for blood safety in less developed countries. Many High Human Development Index (HDI) countries have entered into a post-AIDS era where healthcare costs are among the top issues addressed.

Global blood safety has been an ISBT goal since the beginnings of the organization. It was sometimes successful, a few times shy and ineffective. The question is still alive today: what can and should ISBT do to contribute to Global Blood Safety? What roles should our Society play? When we look at our past, the intent to open doors, share scientific knowledge and ethical principles with members from countries with limited resources has always been there. Education was always important. Actually, there was more than sharing and education. There was a desire to have active exchange of ideas and information, and to learn about the survival strategies adopted by members with limited resources. Thoughts, discussions, strategic planning sessions continue to be carried out in search of answers to the questions about our purpose and activities.

However, we have to recognize that our organization has evolved, and created new activities that address inequality. For instance, to address inequality, dues have been assessed according to the WHO HDI of the country where the member lives. There are discounted dues for members below 35 years of age and financial assistance for young scientists coming from Medium and Low HDI countries to present their work at ISBT Congresses through the Harold Gunson Fellowships. The ISBT Academy supports educational programs at each ISBT Congress and at local congresses around the world.

Approved programs are granted use of the ISBT logo and may receive both scientific and financial support for the event. We believe that the ePortal is a great educator and contributor to information sharing. Entire webinars and presentations from the ISBT meetings are accessible on the website, as well as a repository of guidelines and regulations from over 25 countries and organizations. In addition, the ISBT Award for Developing Countries enables Blood Services and/or Centres from low or medium HDI countries to attend an International Congress of the ISBT, organise an education symposium and/or potential short scholarship to visit a centre of excellence. Information about these programs is available on the ISBT website (www.isbtweb.org).

ISBT is a non-governmental organization (NGO) in official relations with the World Health Organization (WHO) and participates in many of its global activities. Among them are the WHO Expert Committee on Biological Standardization, consultations about Consensus on Medical Products of Human Origin (MPHO) and the ongoing development and implementation of trials for the use of Ebola Convalescent Plasma for treatment of patients with Ebola virus disease1. ISBT also participates in other international forums like the recent Asia-Pacific Economic Cooperation policy dialogue and workshop on attaining a safe and sustainable blood supply chain. In addition, the ISBT Working Party on Global Blood Safety is an active forum for scientists, regulators and member participants from all areas of the world.

While the ISBT Board and the Central Office continue to work on new ideas for improvement of member resources, they also expect constructive criticism, ideas and suggestions from ISBT members. Essentially, the members are the only reason why the organization, the Central Office and the Board exist. Please help ISBT grow and better serve you.

Celso Bianco
ISBT President

1. http://www.who.int/csr/resources/publications/ebola/convalescent-treatment/en/

Welcome to our new members

(July - November 2014)

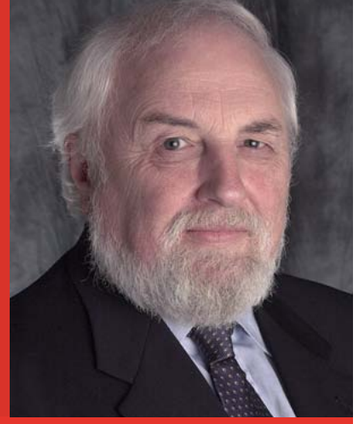
Africa
- **NIGERIA:** OLUWATOYIN DAIRO

Americas
- **ARGENTINA:** HORACIO SALAMONE
- **CANADA:** LUCIE RICHARD
- **UNITED STATES:** JULIE GODFREY, ANH JONES, KATERINE SEYWERD, MARK YAZER

Europe
- **BOSNIA AND HERZEGOVINA:** ELVEDIN LANDZO
- **ESTONIA:** RAHEL REIMAL
- **FRANCE:** DANIEL CANDOTTI, RACHEL PETERMANN
- **IRELAND:** BRIDGET LANE
- **KAZAKHSTAN:** SANIYA ALISHEVNA, DILYAVERR BEKIROV, ZHANDOSS BURKITBAYEV
- **NETHERLANDS:** GESTUR VIDARSSON
- **RUSSIA:** ELENA PROTOPOPOVA
- **SWEDEN:** PER SANDGREN
- **UNITED KINGDOM:** FRANK BOULTON, ROBINA QURESHI

South East Asia
- **INDIA:** MADHU CHANDNANI, DR. PAVINDER KHANNA, VISHNU PUROHIT

Western Pacific
- **AUSTRALIA:** KATHERINE CUMMINS, PARVINDERJIT KAUR DHILLON, GRANT MRAZ
- **BRUNEI:** SHYH KHENG TEO
- **CHINA:** TIEJUN DU, LUNAN WANG, XIAN-GUO XU
- **JAPAN:** HARUMI FUJIHARA
- **MALAYSIA:** ANIZAH ARSHAD



Roger Dodd

"No, Sir, when a man is tired of London, he is tired of life; for there is in London all that life can afford."

Thus spoke Samuel Johnson in 1777 and it is still true. Who, then can resist the draw of ISBT's 25th Regional Congress, to be held in London, June 27-July 1, 2015? The program promises to be excellent, with the Saturday devoted to the SHOT program – one of the moist successful and effective haemovigilance programs in the world. Sunday will, as always, be Academy Day, and the remainder of the meeting will be devoted to what promises to be a sparkling scientific program. Young investigators will have a session of their own and are reminded that there will, as always, be a number of Harold Gunson fellowships: so please look into whether you qualify and submit your application. The deadline for abstract applications is March 19th.

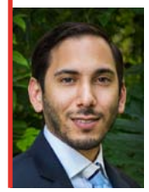
Check the website www.isbtweb.org/london for all the details. The meeting will be held in the exciting growth area of East London - close to the area in which the Summer Olympics were held. We have been unable to persuade the Queen to parachute in, but we are trying to get Daniel Craig to drop Judith Chapman into the opening ceremony. Just across the river is Greenwich, home of the magnificent Royal Naval College, the Cutty Sark and the Royal Observatory, home of GMT, where you can straddle the Prime Meridian and have a foot in both hemispheres. Not to be forgotten is the fact that some of the best pubs in London are in Greenwich and the area surrounding the Excel centre. At the same time, the West End and the more familiar parts of London are easy to reach by public transport. Let us hope that these attractions do not draw you away from the meeting itself.

Later in the year, (14-16 November) the 26th Regional Congress will be held in Indonesia –dare I mention that the site will be Bali? This meeting will be a departure from our usual Congresses - shorter, smaller, more focused on the Region and with more plenary and fewer parallel sessions. For sure, the site is attractive, but there will be little time for lounging on the beach. More details will be found in the meeting website, which will open in March.

While you ponder on these very different congresses, remember to keep in touch with the ISBT website and Academy ePortal, both of which are being upgraded and enhanced for easier access and to include more information. Even those who choose to (or sadly, have to) stay at home next year will have plenty of learning options.

Finally, let me close by wishing all of you a wonderful holiday season and a happy and successful new year.

Roger Dodd
Secretary General



Matthew A. Delgado
Global Dev managar ICCBBA

ICCBBA's 20th anniversary

Two Decades, One Goal – Improving Patient Safety
ICCBBA's 20th Anniversary highlights the importance of collaborations within the scientific community

For nearly 80 years, International Society for Blood Transfusion (ISBT) has been serving the interests of donors and patients by building and disseminating knowledge about transfusion medicine around the world. ICCBBA, a nongovernmental not-for-profit organization that has had a close professional relationship with ISBT for the past 20 years, shares a similar goal of providing standards to ensure the highest levels of accuracy, safety, and efficiency for the benefit of donors and patients worldwide. As one of the original partners in the creation of the ISBT 128 Standard, ISBT continues to play an important role in the hundreds of millions of products that have been labeled with ISBT 128 since its creation in 1994.

Since work first began on a new standard to replace ABC Codabar in 1989 by the ISBT Working Party on Automation & Data Processing, many organizations around the world have recognized the importance of a single, international system for terminology, identification, coding, and labeling of blood products and its potential for use with other medical products of human origin (MPHO). This recognition has allowed ICCBBA to expand the scope of ISBT 128 to include cell, tissue, organ, and human milk products.

The approval of the ISBT 128 standard in 1994 by the ISBT Council was a major milestone that transformed the Council for Commonality in Blood Banking Automation into a truly international entity. ICCBBA was thus created with the appointment of three board members by the ISBT Council in addition to the five appointees by AABB and the American Red Cross. One year later, the ISBT Council formally ceded ownership of ISBT 128 to ICCBBA after agreeing that the continual maintenance of such a standard would be best handled by the establishment of a permanent office.

Overseeing the new office as the first Executive Director was Dr. Edwin A. Steane, Chairman of the ISBT Working Party of Automation and Data Processing. As a strong advocate and one of the many individuals who played an important role in the development of ISBT 128, Dr. Steane was chosen as the recipient of the ICCBBA One World Award earlier this year. "Ed Steane was a pioneer in the field of information standards in transfusion medicine," said Paul Ashford, Executive Director of ICCBBA. "His vision and determination helped lay the foundation for the global adoption of ISBT 128."

The organization's international influence is kept alive today by the involvement of over 300 volunteers from all over the world. Together, experts from clinical, scientific, technical, and informatics backgrounds in addition to representatives from scientific and professional societies, observers from regulatory authorities, and observers from industry comprise eight Technical Advisory Groups that review and update the Standard to ensure it continues to meet the needs of its users. Additionally, In recognition of the global importance of ISBT 128 the World Health Organization accepted ICCBBA into official relations in Jan 2014. ISBT 128 is widely acknowledged as the international standard for use in the coding and labeling of MPHO and its use is endorsed by 21 scientific and professional societies in the fields of blood transfusion, cellular therapy, tissue banking, eye banking, and human milk banking.

With support from scientific and professional societies such as ISBT, the Standard is now used in more than 77 countries across six continents and disparate health care systems. This includes over 4600 facilities; the majority of which are blood collection centers. As collaborations between ICCBBA and organizations such as ISBT continue, usage of the ISBT 128 Standard will continue to rise for the benefit of patients and donors worldwide.

Satyam Arora
Department of Transfusion Medicine at Dr Ram Manohar Lohia Hospital (Central Government Hospital), New Delhi, India

TTID Travel Award winner

The 33rd International Congress of the ISBT was held in conjunction with the 33rd Congress of the Korean Society of Blood Transfusion (KSBT) and the 2014 Congress of the Korean Hematology Societies in Seoul.

I am Dr Satyam Arora, working as Senior Resident at Department of Transfusion Medicine at Dr Ram Manohar Lohia Hospital (Central Government Hospital), New Delhi, India. My responsibility includes managing transfusion services provided by the department as well as conducting academic & research activities for the department. I have finished my masters (MD) in Transfusion Medicine, from Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India in the year 2012. I was the recipient of prestigious Harold Gunson Fellowship Award by ISBT at Cancun, Mexico in 2012. I also received Travel Award for Observer Membership to Transfusion Transmitted Infection Disease (TTID) Working Party Meeting by ISBT at Seoul, South Korea in 2014. Currently my area of research includes studying incidence of occult hepatitis B viral infections among donors in India. My areas of interest are TTI, immunohematology and cellular therapy.

Seoul highlights

ISBT has been known, across the world, for their enormous work in the field of blood transfusion. Their commitment towards promoting education and research has significantly contributed to improve standard of blood banking across the world. International conferences organised by ISBT, like the one in Seoul, was a mere reflection of their high standards of scientific approach and professionalism in transfusion medicine. They always provide one of the best platforms for the complete fraternity of transfusion medicine including researchers, students, teachers, technologists, doctors and the supporting industry to work together for improving the field. Scientific sessions during ISBT conference at Seoul, South Korea were yet another example of high standards laid by the organisation in terms of scientific content and inclusion of most recent advances. The speakers for each topic were experts in their field and attending their talks was highly informative and educative.

There were many presentations which were interesting; one of them was “Setting up a Bank of Bone Marrow Stromal Cells” by David Stroncek. This presentation was very informative in regard to the ever expanding panorama of stem cells as well as the speaker, in a very simple way, explained the scope of stem cells and importance of using stromal cells for regenerative purposes in future.

Another presentation which was very helpful was “Testing for HIV-The First 3 Decades” by Michael Busch, this session discussed about the level of research that has gone into HIV screening and testing over the last 30 years, since its emergence as a threat to blood safety. The speaker was able to address to the issues related to HIV screening right from the beginning to the present era.

As an observing member to TTID working party meeting for the first time, it gave me an opportunity to interact with experts in the field of TTI screening. I was able to discuss many issues on TTI screening. Such initiative by the ISBT and TTID WP has helped me in many ways. Majorly it improved my understanding on many issues on TTI testing and it also gave an insight about other emerging infections such as HEV, Dengue etc. As an observer member to the meeting it helped me understand that how working party works at the international level and how does the supporting industry works in tandem with the scientific communities. I am highly obliged that TTID WP accepted my application and gave me an opportunity to attend the meeting. Finally I would like to sincerely thank my head of department Dr Veena Doda who encouraged me to pursue my researches and is always a constant support.

Introduction of our Young Investigators and their take on the Seoul congress

Ana Freixo
São João University Hospital in Porto

As a child I was always very curious and trying to understand how things work, so the decision to go into the investigation field came very naturally. I am currently working and specialising in Immunohemotherapy at the São João University Hospital in Porto and I am also doing some research work on hepatitis B occult infection and other rare serologic hepatitis B virus infection profiles.

I finished my master in medicine in 2011, so my work experience is short in time and I am still discovering my place in the blood transfusion and transplantation world, but the passion for blood transfusion transmitted infection diseases is undeniable. I also participated at the 33rd ISBT Congress in Seoul this year presenting a work entitled “Risk of malaria in blood donors with malaria antibody reactive result”.

These two ISBT Seoul 2014 sessions were of great interest to me:

What about TRALI?
Sometimes laboratory medical specialisations tend to forget the clinical aspects of medicine, but Dr Eder counteracted this trend and recalled the importance of a good clinical history taking. Indeed, it was a very good review about TRALI with interesting illustrative case reports that captured the audience attention.

When, How and Why to Transfuse
We are in an era where everyone is adopting a restrictive approach to blood transfusion, not only because it is a valuable and limited resource, but also because most observational studies show a positive relationship between high transfusion rates and unfavourable clinical outcomes.

However Dr Yazer showed that, most of the time, observational studies have confounders and the question “Is the blood transfusion or the anaemia guilty for the worst outcome of the patients?” always raises. I find it very good when people are capable and bold enough to challenge trends, especially if they present good prospective studies to contradict it, like Dr Yazer did.

Miao He
Institute of Blood Transfusion, Chinese Academy of Medical Sciences

My name is Miao He and I work at the Institute of Blood Transfusion, Chinese Academy of Medical Sciences. I visited the Seoul congress and there were 2 presentations which inspired me a lot during the congress.

Duration of Dengue viremia detectable in donors by NAT, and relationships between NAT yield, infection incidence and clinical case reports during a large denv-4 epidemic in Rio de Janeiro, Brazil

Dengue viruses are endemic to most tropical regions of the world including southern China. Dr. Busch here had presented an interesting presentation on Dengue virus detected in Brazil which inspired me to carry out an investigation of DENV in China using Brazil ideas. In that presentation, TMA, IgG and IgM testing were tested by Brazilian REDS-III HemoCenter. The result shows that 6.2% of donors acquired dengue infection during epidemic season, including 0.54% of donations tested RNA positive. So, the DENV might do hazards to recipients who probably acquire clinical symptoms during the epidemic seasons. If I initialized an investigation in Southern China that is also the DENV endemic area during summer, the potential threat made by DENV to donations and recipients could be investigated in order to ensure Chinese blood safety.

Progress in infectious diseases testing – NAT and beyongd
Dr. Stramer had presented a very informative presentation focused on new testing trends in EID testing after NAT implementation. Automated platforms, especially those using the next generation sequencing technologies, will be wildly using in EID risk evaluation which should discover a plenty of new pathogens that potentially threaded the blood safety all over the world. However, the NGS strategy are not wildly using because of lots of disadvantages such as “needle in a haystack” issue, little automated software available, bioinformatics application, and high cost issue. Even so, this NGS trends will be popular in next few years. So, blood systems worldwide must be ready to adapt to changes in their knowledge of the infectious disease which are endemic or already tested in their area with the new pathogen investigation based on NGS strategy in the future.

Yu Liu
Institute of Blood Transfusion, Chinese Academy of Medical Science, Peking Union Medical Science

Graduated from Peking Union Medical School and now working in the Institute of Blood Transfusion, Chinese Academy of Medical Science, Peking Union Medical Science. I am currently the Director of the National Nucleic Acid Testing Reference Laboratory, HIV Confirmatory Laboratory and the experimental Centre of Transfusion Medicine of the Institute. I studied on the transfusion transmitted pathogens in China since 2007 and focused on the study of new technology of transfusion transmitted pathogen screening, blood screening strategy and infectious risk of transfusion in China. I have published more than 20 manuscripts about transfusion transmitted pathogens in the past five years.

Summarization of two presentations:

The current status of HEV infection among blood donors and transfusion-transmitted HEV infection in Japan

The speaker reported their study about the prevalence of HEV-viremia among Japanese blood donors, the frequency of TT-HEV in Japan and the severity of hepatitis resulting from TT-HEV. They found that 340-600 donations per year in Japan are expected to contain HEV at levels detectable by the NAT system they used and HIV transmissibility was estimated to be between 40-80% among the eight recipients of blood components containing HEV, three died because of their presenting diseases, three were excluded from TT-HEV and two were established with TT-HEV. From these results they concluded that considering the high frequency of HEV-viremia donation, high transmissibility of HEV via transfusion and moderate severity of resultant hepatitis, the number of TT-HEV cases in Japan is likely underreported and the issue of the validity of introduction of HEV-NAT screening deserved further consideration. Because the data of HEV-viremia prevalence in Chinese blood donors is limited and the necessity of screening of HEV in Chinese blood donors is discussed, we plan to do the research to clarify the prevalent characteristics of HEV in Chinese blood donors and to evaluate if blood screening of HEV is necessary in China. This presentation introduces the similar research in Japan which is very useful for me to design our study.

HBV DNA load and serologic markers of HBV NAT yield cases in Korean blood donors

The speaker reported HBV DNA load and serologic characteristics of HBV NAT yield cases in Korea blood donors. They analysed the characteristics of HBV DNA positive donors from July 2012 to July 2013 and found that among the 2572513 donations 1523 HBV DNA positives (0.06%) were identified including 374 NAT yield cases (0.02%). Among 346 donors tested for HBV DNA load, HBV DNA could not be quantitated in 151 donors (43.6%). Among 195 donors (56.4%), all but one donor had a DNA load of <103 IU/ml and 91.8% had a DNA load of <200 IU/ml. In HBsAg+/HBV DNA+ donors, 70.6% had a DNA load of more than 103 IU/ml. Among 266 donors that were tested for serological markers, 17.7% were anti-HBc and anti-HBs positive, 35.7% were anti-HBc+/anti-HBs negative,22.9% were anti-HBc negative/anti-HBs positive, and 23.7% were anti-HBc and anit-HBs negative. HBeAg was ot detected in the NAT yield cases. From these results, they concluded that the introduction of HBV NAT lead to a decrease in the risk of HBV infection through blood transfusion. In the NAT yield cases, about 47% were negative for anti-HBc ; hence introduction of anti-HBc Is not sufficient to prevent transfusion-transmitted HBV in Korean donor population. Since the viral load in yield cases is very low, sensitivity of the HBV NAT system is of great importance. In China, NAT was began to be implemented in part of blood donors since 2010 and a lot of HBV NAT yield cases were found. Thus, more studies of these cases are needed in China. This presentation reported the research of HBV NAT cases in Korea in detail which is very helpful for us to design our study.

YI breakfast session: advice from 2 of the mentors

‘Get yourself out there’

Barbara Masser
School of Psychology, The University of Queensland, Australia

I am a social psychology researcher by training and have always had a passion for applied research. My research focuses on the recruitment and retention of whole blood and blood product donors, primarily from a psychological perspective. Through collaboration with a more senior colleague I started working with the Australian Red Cross Blood Service 12 years ago. Since that day I have been intrigued by the behaviour of blood and blood product donors! I currently collaborate with multiple divisions in the Blood Service including Donor and Community Research and Marketing as well as with University based researchers in Australia and overseas. Our research uses a combination of survey and (quasi) experimental methods to explore how best to motivate people to become and remain whole blood and plasmapheresis donors. We use our survey results to develop interventions targeting psychological constructs and these interventions are subsequently evaluated in field (quasi) experiments. In addition, we also conduct research to explore the effects of specific threats (such as avian influenza) on the willingness to donate blood, the effectiveness of a variety of interventions on preventing vasovagal reactions in young donors as well as research exploring the impact of perceived adverse events on donor retention.

In terms of career advice, I have two pieces (which I didn’t necessarily follow as an early-career researcher, but the benefit of hindsight is wonderful!). The first is to get yourself an informal mentoring group. If you can get yourself a formal mentor, then all the better. But for many this is difficult, so in the absence of that get yourself a group of people who are at about the same career stage as you, are interested in what you do but have no vested interests in decisions you make. Meet with them regularly and take time out to talk through challenges you face or decisions you have to make. Sometimes just taking time to talk will help make things clearer and sometimes the group can offer alternative perspectives or solutions. Belonging to one of these groups is also a good informal mechanism for sharing information on opportunities for career development.

The second tip is in relation to networking or ‘getting yourself out there’. Networking is crucial for early career researchers, but is easy to rationalize avoiding. It is sometimes hard to accurately gauge the potential long-term gains from such behaviour when faced with the relative ‘punishment’ of not finishing the immediate task in hand. But take the time to talk to other, perhaps more senior, people in your field. Go to conferences, ask questions, and communicate your genuine interest for their work (while remembering to tell them a bit about what you’re doing!). This kind of networking is a great way to keep on top of developments in your field, have your own interest or curiosity piqued and develop collaborations. Being known to senior people in your field will facilitate other career developing opportunities – it will be your name that springs to mind or stands out when they are asked to recommend people for roles that could potentially have a CV enhancing effect.

YI breakfast session: advice from 2 of the mentors

‘Don’t be afraid of the big fish’

Michael Schmidt
German Red Cross in Frankfurt, Germany

Like a fisherman in a boat, a young scientist should not afraid of big fish, but should be alert at all times, ready even after periods of silence to catch that big fish for which they have been waiting all their lives.

At the 33rd ISBT Congress in Seoul, a young investigator breakfast was held to promote the sharing of experience and questions between young and professional scientists and consultants in transfusion medicine. “This was a good first step for young people”, said Michael Schmidt, “to come to the ISBT Congress and start building a network with people from the Society of Blood Transfusion”, or to be in the picture starting fishing.

Networking is one of the keywords in transfusion medicine for old and new members and trainees. Current issues and challenges in different areas of transfusion medicine (e.g. blood safety, immunohematology, or stem cells) need the input of experts from all over the world to find sustainable solutions. Therefore, transfusion medicine offers many career opportunities. People who are interested in science can work on basic research as well as on applied science.

For example, because blood donors are usually between 18 and 70 years old and healthy, they are a good “source” or group for studies in epidemiology. New technologies like next generation sequencing (NGS) enable scientists to generate a large amount of data. Large blood transfusion services screen more than 10,000 donations daily for transfusion-relevant viral infections, bacteria, parasitemia, and blood typing. In addition, a number of new scientific fields, like genomics, proteomics, or lipidomics can be investigated by liquid chromatography (LC/MS/MS) and offer new insights into normal and abnormal human functions of blood cells and other areas.

Therefore, young investigators should be good in medicine as well as in statistics and bioinformatics. Double-educated people are rare and will have the best opportunities in the near future. Another option could be to pursue an MBA in addition to become a consultant for transfusion medicine. Within the next 10 to 20 years, a new generation will take over the responsibility for institutes of transfusion medicine and blood banks. The primary work of these physicians will be extended to business administration work as they become institutional leaders. A double education with cross-expertise in other relevant areas will be an advantage for young professionals.

It is also a good idea for young investigators to write scientific manuscripts as frequently as possible. On the one hand, the society is waiting for new, consolidated findings; on the other, young professionals will broaden their knowledge through researching and publishing data.

To become acquainted with the most important opinions, it is good to focus on only a few topics and to work continuously on them. A good strategy could be to work on scientific research, write a scientific abstract, and apply for an oral presentation at an ISBT congress. Oral presentations within a scientific session provide opportunities to increase social networking. For this strategy, membership in the ISBT would be an important step.

The current knowledge in medicine—including transfusion medicine—is continuously growing. Therefore, it is important for young investigators to take a little time and consider one or two topics that really interest them. These topics should have the potential to fascinate them for a long time, perhaps even their whole lives. In science, staying power is always required to discover new principles. Working in transfusion medicine is a great platform to combine both scientific work and routine work as a physician with blood donors and patients. Coming back to beginning picture, there are many big fish in the field of “Transfusion Medicine” for young investigators waiting to be catched.

Cynthia So - Osman
Chair Working Party Clinical Transfusion

Appraising methodology of clinical transfusion research

Report on "A One Day Course to Impress your Colleagues at your next Journal Club" ISBT Congress Seoul, June 2014

The Working Party (WP) Clinical Transfusion has been focusing on several clinical topics, such as Patient Blood Management and coding for Indications for Transfusions. Another initiative was to introduce a course for appraising methodology in clinical transfusion research. After sending the ISBT an application, the society agreed on a one-day pilot course. On the first of June, 2014, this " one day course to impress your colleagues at your next journal club" was presented at the international congress in Seoul. The origin of this idea was born after evaluation of a survey, that was circulated at the congress in Cancun (2012), questioning ISBT participants on their Clinical Epidemiology knowledge (1). In this survey, only one of all 435 participants answered all questions correctly. To find tutors for this pilot course, members of the WP and clinical epidemiologists of the Center of Clinical Transfusion Research (CCTR) of Sanquin Blood Supply from Leiden, who had also performed the original survey, were approached. The aim of this course was to provide tools to critically appraise transfusion research literature.

The course started with a topic concerning the research question, a lecture by Anske van der Bom. Tools to check if the research question in papers was properly addressed were discussed. In the second session, Rutger Middelburg discussed the different types of study designs. Different clinical research questions require different study designs, and randomized trials are not always necessary or even possible dependent on the study question. After a lunch break, Leo van de Watering continued the course with a lecture about bias and confounding, since all studies-designs are vulnerable to both. The participants learned how to recognize, interpret, handle and prevent these. The last session was given by the author herself, where the participants learnt how to deal with confounding by using stratification and regression, including gaining more insight in the concept of regression analysis by using simple hands-on examples like drawing regression lines. A small audience from Australia, India and Indonesia participated. Expert colleagues in the Clinical Research field from the USA and Denmark were present to evaluate the course. The course was interactive and well appreciated. Feedback was given and included the following quotes: "Overall much needed topics covered and addressed, will surely help us analyzing data and planning future research" and "Should be attended by a lot of congress participants." Although the course was meant to properly interpret Transfusion Medicine literature, the participants were also keen on using the tools for their own research studies. Suggestions were given regarding lacking topics and how the course might be improved. It can be concluded, that this first pilot course was well received. Plans are being made how to set up the second course at the next ISBT congress in 2015. The aim of the next course will be extended to provide tools not only to appraise transfusion research literature, but also to perform clinical transfusion research in a more optimal way. Interested readers can contact the author for additional information.

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Department of Transfusion Medicine, The University of Tokyo, Japan

Platelet Serology: New Developments

Human Platelet Alloantigens (HPAs) and antibodies play a role in several conditions of alloimmune immune thrombocytopenia such as platelet transfusion refractoriness (PTR), neonatal alloimmune thrombocytopenia (NAIT) and post transfusion refractoriness (PTP). In addition, recent evidence indicated that HPAs are also importance in transplantation settings.

Presently, the diagnostic of these immune mediated clinical conditions rely on the assignment of antigen incompatibility and the antibody verification. In the last decade, several molecular biological methods have been established, which now allow reliable high-resolution and high-throughput HPA genotyping analysis. Based on these technologies, extensive studies on the frequency of HPAs have been performed worldwide. However, the clinical relevance of HPAs among different populations is still unclear.

One of the basic reasons is probably caused by the limitation of suitable, reliable method for the detection of the causative antibodies in serum of the donors or recipients. Currently, the standard methods applied for platelet serology include platelet immunofluorescence test, mixed-passive hemagglutination assay and antigen capture assay (MAIPA). Unfortunately, no one of these techniques alone is able to detect all clinically significant antibodies. Therefore, combination of different methods is still necessary to improve the detection of platelet antibody.
This problem may be attributed to the complexity of glycoproteins carrying HPAs alloantigenic determinants and the nature of alloantibodies in itself.

The most clinical important HPAs antigens described so far reside on GPI-linked glycoprotein (CD109) or glycoprotein complexes such as GPIIb/IIIa, GPIb/IX and GPIa/IIa which function as receptor for adhesive ligands such as fibrinogen, von-Willebrand factor VWF) and collagen, respectively. Thus, alteration of these receptors due to isolation procedure, storage, and test-approach may impair the antigenicity of HPAs. Furthermore, some alloantibodies showed low-binding character, which are not detectable by the current standard methods, most probably due to washing procedure.

Academy Day at the Africa Society for Blood Transfusion congress

Lesley Bust
Quality Manager, Western Province Blood Transfusion Service, Cape Town, South Africa

An Academy Day was held on July 30, 2014 at the Africa Society for Blood Transfusion (AfSBT) congress in Zimbabwe and proved to be a great success. The theme for the day was 'Skills for Supervisors and Team Leaders' and Beryl Armstrong (Programme Director, AfSBT) assembled a multi-national team of speakers for the occasion. At the end of the day, the general buzz was that all attendees learnt something that could be applied in their work. Participants described the day as stimulating, informative, fun and a 'must-have' for future congresses.

Figure 1

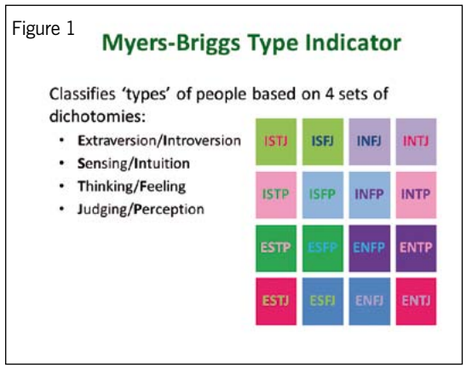
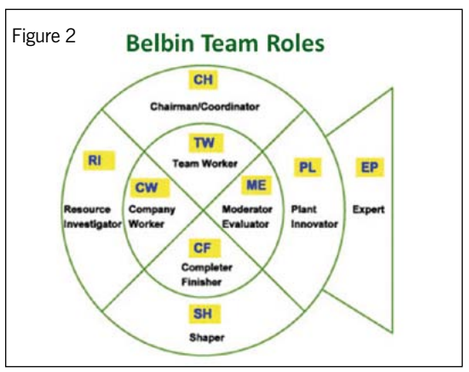


Figure 2



Leadership and Teamwork
Peter Flanagan (New Zealand) set the tone with his talk on team leadership and motivation. Successful leaders were described as being honest and transparent, trustworthy, respectful and good at communicating and solving problems. The Myers-Briggs personality type indicator enables leaders to understand themselves and their teams better and the Belbin model explains the roles team members play (see Figures 1, 2).

Dr Jean Baptiste Tapko (Cameroon) expanded on planning and taking action to achieve team goals. He explained techniques for performing gap analysis and strategic planning, drawing up action plans and developing SMART key performance indicators. For an organisation to reach its objectives, resources (human, financial and material) need to be provided.
The development of budgets was discussed by Paul Ashford (UK) and he provided examples for work and home. When using budgets as a management tool, financial reports need to be reviewed regularly and trends monitored. Variances are to be investigated so that action can be taken to remain within budget.

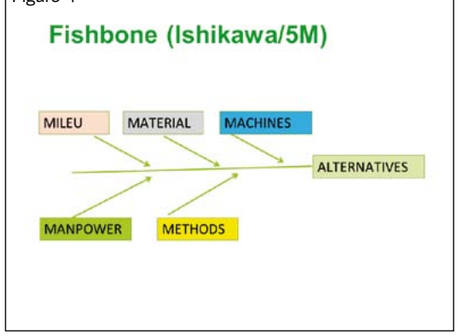
Learning Skills
For staff to perform at their best, education and training is a must. Dr Patricia Knox (South Africa) highlighted the benefits of on-the-job training which translates theory into practical application. She explained how to create learning materials with impact and showed a short video made by one blood centre. The challenge of organisations is to create an environment conducive to learning and mentorship. Educational information should preferably be provided on memory sticks rather than books or DVDs.

Judith Chapman (Netherlands) followed-up with her presentation on learning resources in the cloud. The internet provides a vast selection of audio/visual learning materials on transfusion science and management and Judith guided the audience to sites of practical application.

ISBT ACADEMY

Figure 3

Figure 4

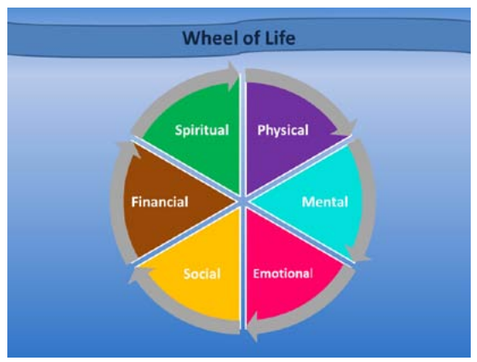


Decision Making
Many leaders struggle with making decisions and Dr Claude Tayou Tagny (Cameroon) outlined a step-by-step approach to the process (Figure 3). After recognising a problem and defining the decision criteria, alternative actions can be identified and evaluated before the most appropriate is chosen. Various tools and techniques are available such as the Fishbone Diagram (Figure 4). Once a decision has been implemented, its effectiveness should be evaluated.

In his talk on the power of communication, John Pitman (USA) explained how to utilise the media to get your organisation's message across. Advice was provided on how to draft press statements and prepare for interviews with journalists. All communication should be truthful.

Management of Self and Others
Crispen Dandavare (Zimbabwe) entertained the audience with reasons why some managers have difficulty in delegating. He summarised steps for successful delegation and explained that performance appraisals can be used for coaching and giving feedback to employees.

In order to manage others we need to manage ourselves and the session was rounded off with a colourful presentation by Lesley Bust (South Africa) on managing time and stress. To function at optimum levels, people should strive to balance the various aspects of their lives. Using time effectively reduces stress levels and ten practical time-saving tips were outlined.



At the end of the Academy Day participants felt motivated and were brimming with ideas on how to improve their performance.

T-REC symposium for strengthening transfusion research capacity in Africa

Imelda Bates
Clinical Haematologist
On behalf of T-REC

AFRICA

T-REC is an international consortium of academics and health practitioners working to strengthen the capacity of African researchers to do research on blood transfusion. T-REC works in Ghana and Zimbabwe and is a four-year project (2011-2015) funded by the EU Commission. More evidence and research about blood transfusion needs to come from within Africa. This was one of the key messages from the T-REC symposium about strengthening African research on blood transfusion, held on July 31, 2014 during the 7th Congress of the African Society for Blood Transfusion (AfSBT) in Zimbabwe. Imelda Bates, the Principal Investigator of the T-REC consortium, facilitated the open session, which was attended by fifty people including blood service staff, scientists, clinicians, commercial companies, students, and representatives from professional organisations, universities and Ministries of Health.

Since 2011, the four-year EU funded T-REC consortium has made a substantial contribution to the long-term goal articulated at a meeting in Mombasa, Kenya in 2008. This was to 'establish an Africa-wide programme to strengthen the capacity of transfusion services to conduct, share and utilise research'. The purpose of this latest T-REC symposium was to pool ideas from abroad and diverse range of blood service stakeholders about the next steps to achieve this goal and to find out how the T-REC consortium could most effectively support the process.
Professor Banji Adewuyi, Editor-in-Chief of Africa Sanguine , gave a brief orientation for participants on the importance and role of research in improving blood services in Africa. Professor Jo Adewui, Head of the Department of Haematology, University of Ilorin Teaching Hospital, Niberia, was a guest speaker. During his presentation, he promoted greater research into blood transfusion. "There is a need to increase awareness of research, improve research capacity, improve data systems and provide more research grants," he said.

During the symposium, participants worked in small groups and some of their discussions are summarised below.

What are the challenges for blood services in conducting transfusion research?
The key challenges faced were a lack of organisational research culture and limited understanding about the research process and the potential benefits. There are many competing interests and consequently research is not a high priority for African blood services, or for their external funders. The long time frame from conception to generating results, and particularly in publishing and using results to improve service delivery, were also barriers.

How can these challenges be overcome?
Suggestions for addressing these challenges focused on strategic planning or practical activities. At the strategic level, prioritising research, developing a research strategy and creating a research culture within the blood service, making stronger links with research institutions and clinical services, and doing relevant operational research were all considered important.

How can we ensure that research is used to influence blood service policies and improve practice?
Several mechanisms were identified for influencing research uptake including engaging senior managers and national policy makers in all stages of the research process, National Blood Service (NBS) representation on national decision-making bodies and close collaboration with the NBS and hospital/national blood service committees to ensure research is focused on the institution's priority problems. Joint advocacy on research by NBS and clinical users, establishing units in institutions and nationally to coordinate research and disseminate findings were also considered important.

About T-REC
To enhance transfusion research capacity the T-REC consortium funds four PhD students in Ghana and Zimbabwe, a one-year part-time Diploma Course for blood service professionals to undertake their own work-based research project, and student bursaries to support undergraduates' transfusion research projects. T-REC also supports the development of the research infrastructure within the blood services and links between the blood services, AfSBT and African and EU universities.

T-REC's African partners are AfSBT and the national blood services in Ghana and Zimbabwe; EU partners are the University of Copenhagen/National Blood Service, Denmark and the University of Groningen, the Netherlands. The Liverpool School of Tropical Medicine, UK is responsible for coordination of the consortium.

The full report of the meeting is now available.

EUROPE

Mahmut Bayik
President of Turkish Blood Foundation

The second Anatolian Blood Days (ABD-II)

This was a follow up of the initiative launched in 2012 by the Turkish Blood Foundation (TBF) and Blood Banks & Transfusion Society of Turkey (BBTST). The proceedings of that first meeting were reported in Transfusion Today (No. 94).

The theme was "Bedside Transfusion Safety and Training of the Clinical Nurse". ABD-II 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.

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, 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 December 15, 2004.

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 with little national harmonisation of courses and national curricula. After a plenary discussion the participants formed three working groups dealing with:

1) The core training common to all of nurses during their pre-graduate education and training
2) The training required for all in-service nurses who have responsibility in clinical transfusion
3) The characteristics and role of the nurse dedicated to or specialized in clinical transfusion.

The reports presented by each working group were discussed and the participants approved the following statement:

Consensus Statement
The educational training for nurses in clinical transfusion should be i) clearly defined and ii) practically achievable (especially for service training), iii) similar for nurses in training and in-service nurses, iv) special emphasis to procedures that affect patient safety.

2. The core curriculum should cover: i) responsibilities of the transfusion nurse, ii) guidelines, iii) indications, iv) storage & handling, v) administration and compatibility of blood components, vi) ABO types, vii) transfusion complications & prevention, viii) Rh immunization.

Moreover, i) informed consent, ii) request form, iii) sampling and patient identification, iv) visual inspection of the component unit, v) pre-transfusion identity checks, vi) monitoring vital signs, vii) administration of blood components, viii) initial management of acute transfusion reactions, are all important topics.

3. For specialized nurses, i) coordination, communication, iii) quality improvement and iv) management are important. And specific tasks should include: i) implementation of training, ii) co-coordinating Haemovigiliance reports and audits, iii) promoting best clinical transfusion practice, iv) full participation in the Hospital Transfusion Committee.

Prof. Dr. Mahmut Bayık
President of Turkish Blood Foundation
Readers are invited to send comments, on the consensus statement to transfusion today or to the TBF by writing to:

Professor Mahmut Bayik; mahmutbayik@gmail.com
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EUROPE

A.M. Chuhriiev
Zhytomyr Regional Blood Center

World Blood Donor Day Celebration in Ukraine

People donate blood in order to help others. Therefore, blood donors give the most precious gift away; they give away their own blood - a little part of themselves, their energy, and their soul.

This year's World Blood Donor Day (WBDD) was held under the slogan "Safe blood for saving mothers". For this occasion WBDD was celebrated on May 29th 2014 in Congress-centre of the Zhytomyr Nursing Institute in Ukraine. The aim of this annual event was to attract more young people to donate blood regularly and to express gratitude to people who voluntarily give their blood and help to save lives.

Guests were welcomed by officials from the Regional Council, Dept. of Regional Healthcare Administration, Regional Organization of the Red Cross Society of Ukraine, leading medical experts from the Zhytomyr healthcare establishments and volunteers of youth organizations.

"Today, our task is to promote voluntary donation to ensure that blood is safe, because it was donated by a healthy person with a good heart - free of charge, voluntarily, because it is impossible to do good for money.
The traditional "Donor Days" are the perfect example which are held annually for World Blood Donor Day," - says Head Doctor of the Regional Blood Centre, President of Ukrainian public organization "Association of Blood Servi e of Ukraine", O.F. Herbachevskiy Prize Laureate Anatolii Chuhriiev welcoming the guests.

According to the Ukrainian Law on "the donation of blood and blood components" in 1995, the titles of "Honorary or honored donor of Ukraine" were established. In 2001 in the Zhytomyr Region alone, more than 2,000 donors received the honory title and 1 donor was even rewarded with a state award - Order of "Princess Olga" of third degree. In addition, 4 donors were awarded with the title "Honored donor of Ukraine". And during a celebration, the donors, who donated blood voluntarily and free of charge for decades and promoted blood donation, were given official certificates.

Also, during the event, the Dept. of Regional Healthcare Administration, Regional Organization of Red Cross Society of Ukraine, praised the regular voluntary donors as well as the most active donors among the different medical workers of regional, municipal and district healthcare establishments, for their active participation in promotion of donors.

Anatolii Chuhriiev states that it is encouraging to see that the younger generation is now aware of the importance of this process and, more importantly, give their blood voluntarily. For example, 5 years ago, the proportion of young voluntary blood donors was only 4%, but the last year alone this was increased to 11%. We are very pleased to notice that our youth once again proves to be the driving force, realizing the unique medicinal features and characteristics of blood and its components.

It is with pleasure to note that students aged 9-11 from school #22 in Zhytomyr under the supervision of instructor N.M. Minenko congratulated blood donors with their creative performances, expressing their sincere gratitude and respect. Also, one of the volunteers of the Youth Scout Organization "Plast", Anna Brylova, congratulated all donors and mentioned that blood donors are giving another birthday, bring hope and dreams.

This whole event was prepared by the Dept. of Regional Healthcare Administration, Regional Blood Centre in conjunction with the Regional Organization of Red Cross Society of Ukraine and young talents. Regular sponsors include: Charitable Organization "Hospital Fund of Zhytomyr Region", Regional Organization of Labour Union of Medical Workers.

Also, this event was promoted by regional and local media.

EUROPE

Maya Makhmudova
AIHA representative in Central Asia

Developments of the Blood Service in Kazakhstan

During the autumn of this year, we are celebrating the 80th Anniversary of the establishment of the Blood Supply System in Kazakhstan. Therefore, a scientific conference 'Actual problems and prospects of development of the Blood Service of the Republic of Kazakhstan', was held on September 10-11 in Almaty.

The conference was attended by various Blood Service representatives from all the Commonwealth of Independent State (CIS) countries including Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan and Uzbekistan together with several international organizations in the field of Medicine. The current Blood Service practices of the republic, its problems, achievements and developments, production and clinical transfusion were discussed. In addition, in honor of this anniversary, veterans of the Blood Service of Kazakhstan were rewarded for their personal contributions by government awards. Dr. Zhandos Burkitbayev, director of the Republican Scientific and Production Center of Transfusion, presented the main points for improvement, the actual problems and developments. In a relatively short period of time, Blood Service of Kazakhstan have been successfully improved by implementation of international standards, bringing the Blood Service in accordance with international good practices. These concepts of Blood Service for 2011-2015 were approved by the Ministry of Health of the Republic of Kazakhstan.

Firstly, 206 different small (urban) blood centres were reorganized into regional branches and preparation of blood at the district hospitals was terminated. To date, the Blood Services of Kazakhstan - a holistic, centralized structure- is represented by 14 regional Blood Centres in Almaty and Astana. Also, other urban and well-equipped blood centres, which are based in Almaty and Semipalatinsk, met all the requirements for laboratory testing of donor blood in accordance with the International standards. This provided blood components with high quality. Secondly, one of the most important stages was to improve the relevant legal framework. Therefore, for the period 2011-2012, legal and regulatory framework was updated and reviewed. Moreover, new standards for laboratory diagnosis of blood were implemented leading to quality control and clinical use of blood components. Kazakhstan was the only one of the CIS countries to ensure transfusion safety at the state level legislation. This led to a two-stage screening method (immunofluorescence assay + PCR), which was validated and certified for the Blood Services. From January 1 2013 on, the adopted National Standards became mandatory.

The Research and Production Centre of Transfusion (RP T) implemented knowledge transfer and gained experience in leading international training organizations and blood centres. In addition, the RP T trained the various specialists of the Blood Service. By addressing the issues of the external evaluations, the Blood Service of Kazakhstan operated successfully because it recently established a RP T Republican

EUROPE

Reference Laboratory (in August 2014), which was accredited with the National accreditation standard ISO 15189.

In addition, the conference featured presentations by Prof. Eugene Zhiburt (Russia) on the management of patients' blood. Also, the National Medical Centre of Surgery named after Prof. N.I. Pirogov, presented the new paradigm: implementation of patients' blood, based on improvements of clinical interface, sufficient evidence and patient-centred clinical practices, relevant standards and regulations to reduce the risks and costs. Furthermore, several statements were presented by international organizations including the Centre for Disease Control and Prevention (CDC), American International Health Alliance (AIHA) the main directions of their activities in Central Asia in order to ensure the safety of blood.

The AIHA, in collaboration with the CDC, is involved in a new five-year project to provide technical assistance to the countries of Central Asia, to further improve Blood Transfusion practices, including effective strategies to attract voluntary unpaid blood donors and screening of all donated blood for transfusion-transmitted infections. Moreover, during the conference, various reports on the reform experiences of the Blood Service of the Republic of Lithuania were discussed. Colleagues from Belgium and Russia presented modern technology for procurement of blood components. Successful experiences in the development of voluntary non-remunerated blood donation were shared by colleagues from the USA, Turkey and Kyrgyzstan.

Finally, the 'Association of transfusiologists of Kazakhstan' was created, which main objective is to further successfully develop Transfusion Medicine.

NORTHERN AMERICAS

Richard Benjamin
American Red Cross

Living on the Edge: Chikungunya and dengue in the US

Each fall, intermittent hurricanes sweep across the Caribbean devastating the eastern seaboard of the US, while the heat and humidity spawn swarms of mosquitoes that help keep tourists at bay. Coincidently, dengue infections, carried by Aedes aegypti mosquitoes peak in the late summer, reaching epidemic proportions in 2005, 2007, 2010 and 2012, just a few hundred miles from major US cities.

In the US territory of Puerto Rico 3.7 million residents are at risk of exposure, with high rates of seroconversion to whichever of the four known strains of dengue are circulating. While blood bankers worldwide debate the relevance of the few documented dengue transfusion transmissions in a background of high rates of natural infection, the American Red Cross chose precaution over procrastination for the half of the Puerto Rican blood supply that it collects and distributes. Testing was instituted in 2010, first for dengue NS1 antigen, and more recently for dengue RNA using nucleic acid testing. Investigation shows that as many as 1:160 blood collections are contaminated by dengue RNA during epidemics and that even in winter, 1:1,600 components may be infectious. In 2012, the Red Cross moved to exporting about 50,000 red cells from low-risk areas of the mainland, while continuing to collect and test about 7,000 platelets on the island. As dengue is a silent infection in the majority of patients, opinion on the island focused on the loss of jobs rather than the need for protecting the blood supply, leading to high-level criticism rather than public support. Hospital self-collectors continue to collect blood for the other half of the supply without testing precautions. On the mainland, the threat of dengue has been downplayed by regulatory agencies, with no specific travel deferral policies recommended by a 2010 Blood Products Advisory Committee panel.

In December 2013, the first cases of the Asian strain of chikungunya virus, also transmitted by the Aedes aegypti mosquito, were detected on the French protectorate of St Martin. A new epidemic of this back-breakingly painful infection has hopped from island-to-island towards the US mainland, reaching Florida in early June, 2014. Some 135,000 confirmed or suspected cases were reported by mid-June in the Caribbean, and at least 27 travel acquired cases described on mainland US (CDC ArboNET).

Chikungunya has never been documented to be transfusion transmitted, has a short presymptomatic viremic phase, is symptomatic in most (80%) patients (i.e., will render these donors less likely to donate blood) and is not known to cause the shock syndrome, hemorrhagic fevers or neurotropic illnesses characteristic of dengue. Nevertheless, there is a sense of urgency in the US that has not been seen with dengue. The AABB has issued a bulletin describing the risk of chikungunya and advising blood centers to consider an enhanced post donation information program, in order to urgently recall blood collected from donors reporting two or more symptoms within a few days of collection. The FDA is considering a 28-day travel deferral for donors returning from the Caribbean. No donor screening tests for chikungunya are FDA approved or even under investigation. Remarkably, even the investigational dengue NAT assay may soon no longer be available, leading the Red Cross to consider exporting all blood products to Puerto Rico from the mainland during a declared epidemic.

It seems the chicks are coming home to roost. For many years there has been an absence of interventions by regulatory agencies to protect the residents of Puerto Rico from transfusion-transmitted, mosquito-borne viruses such as dengue. Perhaps the public outcry caused by a frequently debilitating, but low transfusion risk infection will hasten the approval of pathogen inactivation technologies in the US, as well as regulatory incentives to develop and mandate tests in a more rapid and cost effective manner than is currently the norm?

AMERICAS

SOUTHERN AMERICAS

Jorge Curbelo Viera
Technical Director - Maldonado Blood Centre, Punta del Este, Uruguay.
Transfusion Medicine Faculty.

An inspiring initiative by the Maldonado Blood Center in Uruguay

The Regional Blood Centre is located in the city of Maldonado, south of the Oriental Republic of Uruguay, 140 km from the capital of Montevideo and close to the holiday resort of Punta del Este. It is a public Transfusion Medicine centre which belongs to the National Blood Service (State regulated and responsible for providing blood to the whole country) as well as the ASSE (Administration of State Health Services). In the last 5 years, it became the centre of national and international reference for transfusion medicine and blood- related institutions of both private and public health, and its strategy is the perfect example to promote Voluntary Blood Donation.

Another aspect that distinguishes our Regional Blood Centre is the strong dedication to promote Voluntary Donation, awareness campaigns in the media, activities and programs at schools which allow our "Hemocentro" to attract new donors. We are optimizing the communication with the community by using social media and aim to provide a rapid and continuous flow of useful information. Also, we answer questions by serving as a call centre and establish close relationships with our donors.

By means of this publication updated information is provided. Additionally, the magazine "Life OK" is about Donating Blood and is freely distributed to support School Programs (15,000 copies).

School programs for blood donation
In 2011, the Blood Centre began its very interesting journey: collaborating with the Primary schools of Maldonado (public and private). With the use of informative presentations, students and teachers are encouraged to visit the Blood Centre. In the future, we will organize these successful Blood Donor Conferences at various other schools.

With the support of ASSE, the National Blood Service and the Primary Inspection Department, this initiative was further developed and implemented for the 1st School Project about Blood Donation. To date, hundreds of school children have visited the facilities of "Hemocentro", visiting the blood collecting areas as well as the laboratories to learn about the processes of identification, processing and storage of blood and its components.

In each school, each teacher developed many activities to strengthen the core values including solidarity, generosity, solidarity and change in people's lives. It involved recreational activities, dancing, singing, performances, exhibitions of visual arts and craft shows. The activities ended with a Donation Day where parents, relatives, friends and neighbours joined the children again.

The Blood Centre has defined a strategic plan for the new generation, in which these school activities will increase their knowledge, breaking down taboos and fear. Moreover, with the help of this project, the future generation will become increasingly aware of the great value of blood donation, which can be incorporated into their daily lives. It is remarkable to observe that the creative nature of these activities boost the enthusiasm of both the children and teachers. And it is very important for them to experience happiness when they are making this significant contribution to society, giving blood, and therefore life, to those who are in need for blood.

References:

1.- DONANTES Y SOCIEDAD: LA ESTRATEGIA PARA EL CAMBIO
Sosa C, Bangueses MF, Curbelo J, Bentancor N.

Zhong XU
Secretary of the Chinese Society of Blood Transfusion Quality Management Committee

CSBT's first quality management award

Recently, the Chinese Society of Blood Transfusion (CSBT) announced the names of the first CSBT Quality Management Award recipients. In total, 20 winners were selected from 40 finalists. It is the first time that CSBT awards individuals who have made significant contributions to blood safety and quality management and this landmark event will open up a new chapter in Chinese transfusion medicine.

Proposed by the CSBT Quality Management Committee (CSBTQMC), CSBT formally approved and initiated this award program last March. This award was created to honor individuals who have made significant contributions and great achievements in the quality management in blood transfusion services from 2006 to 2013. Their admirable accomplishments and commitments have greatly helped to facilitate quality management of blood transfusion services effectively as well as improved donor and patient safety in the past 7 years.

CSBT authorized CSBTQMC to draft a guideline on the Award in order to make this award process open, fair, transparent and traceable. This Guideline encourages and helps individuals and organizations in the field of blood transfusion to select prospective candidates and submit candidate's nomination forms including curriculum vitae, thorough description of the candidate's significant contribution(s) and/or achievement(s) relating to quality management.

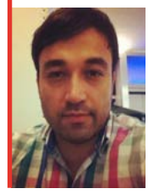
The proposed Award was made known to the public in May of this year after long discussions by the CSBT. The guidelines, as well as the nominations of the candidates, were announced on the website of both CSBT and CSBTQMC last August. A nomination form was sent to all members of CSBT who could nominate candidates to CSBTQMC by mail before August 20. In total, 678 nominations were received before the deadline and 71 nominated candidates were recommended. On September 19, according to the Guideline, 48 CSBTQMC members voted for 40 secondary candidates in Nanchang City, which is located in the Jiangxi Province. Subsequently, this list was reported back to CSBT. After reviewing and final approval by the CSBT Board of Trustees, the nominees were published on the official website for public reviewing. As no objections were received, CSBTQMC issued 151 ballots to all CSBT board members and asked the members to select 20 final winners from these nominees.

In total, 134 ballots for the final voting were received as on October 24. All these ballots were sealed until the final voting meeting was held in Hangzhou City, Zhejiang Province, on October 25. After counting the ballots, the winners were identified. These Awards will be presented during the 7th Congress of CSBT in Wuhan City, Hubei Province, on November 13, 2014. With the help of this award program CSBT will conduct similar activities in the future.

Counting of the ballots for the first Chinese Society of Blood Transfusion Quality Management Award

Emptying of the box containing the sealed ballots

Short report on direct antiglobulin test (DAT) and stored red blood cells



César Cerdas-Quesada
Inmunohematólogo. Banco de Sangre
Hospital La Católica. Costa Rica

The direct antiglobulin test (DAT) is developed to measure the quality of red blood cells and measures the presence of immunoglobulins (IgG), complement system factors (C3) or both. In this assay, washed red blood cells (RBC) are incubated with specific antibodies against IgG and/or C3/C3d. When the sample tests positive, it can indicate: autoantibodies, either warm (binding at 37°C) or cold (reactivity at 28-31°C), transfusion reaction, haemolytic disease or drug-induced antibodies. Importantly, RBC units testing positive for DAT can be false positives. After 15 days of storage, 16% of red cells develop a positive DAT in vitro, and after day 24, 91% will show positive. This seems to be an in vitro phenomenon only due to nonspecific binding of IgG plasma since the result can be neutralized by suspending the donors'RBC in saline solution or pH 6.8 Alsever's Solution. After 35 days of RBC storage, we have found hemolysis (0.1-1.8 , median of 0.4%). Samples with higher haematocrit (≥ 80%) were associated with increased hemolysis , therefore we investigated the end of the storage period. We found that 95% of all RBC units tested positive for DAT, 63 units for C3c, 3 for IgG and 2/71 for IgG+C3d. There was some variability. No relationship between agglutination and hemolysis was observed, but patients tested positive for IgG DAT had a higher percentage of hemolysis. When RBC are stored, they undergo storage injury including loss of deformability, morphological changes, decreased adenine triphosphate and 2,3 diphosphoglycerate. These changes decrease the oxygen-carrying capacity of RBC significantly. These findings are important because several studies have shown an association between "aged" RBC and clinical outcome including increased hospital stay, postoperative infections, prolonged mechanical ventilation, organ failure and mortality in patients.[1-3]

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1. Cerdas-Quesada C. Revista Argentina de Transfusión 2013;39:55-61; 2.Cerdas-Quesada C et. al. Revista Argentina de Transfusión 2012;38:215-216 and 3.Cerdas-Quesada C. Revista Argentina de Transfusión, In press

2015 **Upcoming** Events

January 23 - 25

National Meet on Total Voluntary Blood Programme - Vision 2020
Kolkata, West Bengal, India
avbdwb@gmail.com
http://www.angelfire.com/sc/avbdwb/rakta.html

February 11 - 13

8th Annual Congress of the European Association for Haemophilia and Allied Disorders 2015
Helsinki, Finland
http://eahad.org/wp/8th-annual-congress-helsinki-feb-2015/

April 29 - May 02

13th International Symposium on Myelodysplastic Syndromes (MDS 2015)
Washington, USA
http://mds.kenes.com/

June 11 - June 14

20th Congress of European Hematology Association
Vienna, Austria
http://www.ehaweb.org/congress-and-events/annual-congress-2/20th-congress/

June 20 - June 25

XXV International Society on Thrombosis and Haemostasis (ISTH) Congress and 61st Annual Scientific and Standardization Committee (SSC) Meeting
Toronto, Canada
https://www.isth.org/page/2015Microsite/

October 24 - 27

AABB Annual Meeting
Anaheim, CA, USA
www.aabb.org

June 27 - July 1

25th Regional Congress of the ISBT, in conjunction with the 33rd Annual Conference of the British Blood Transfusion Society
London, United Kingdom
www.isbtweb.org/London

ISBT SEASON'S GREETINGS 2014

With best wishes for a successful 2015!

From the ISBT President, Board of Directors & ISBT Central Office