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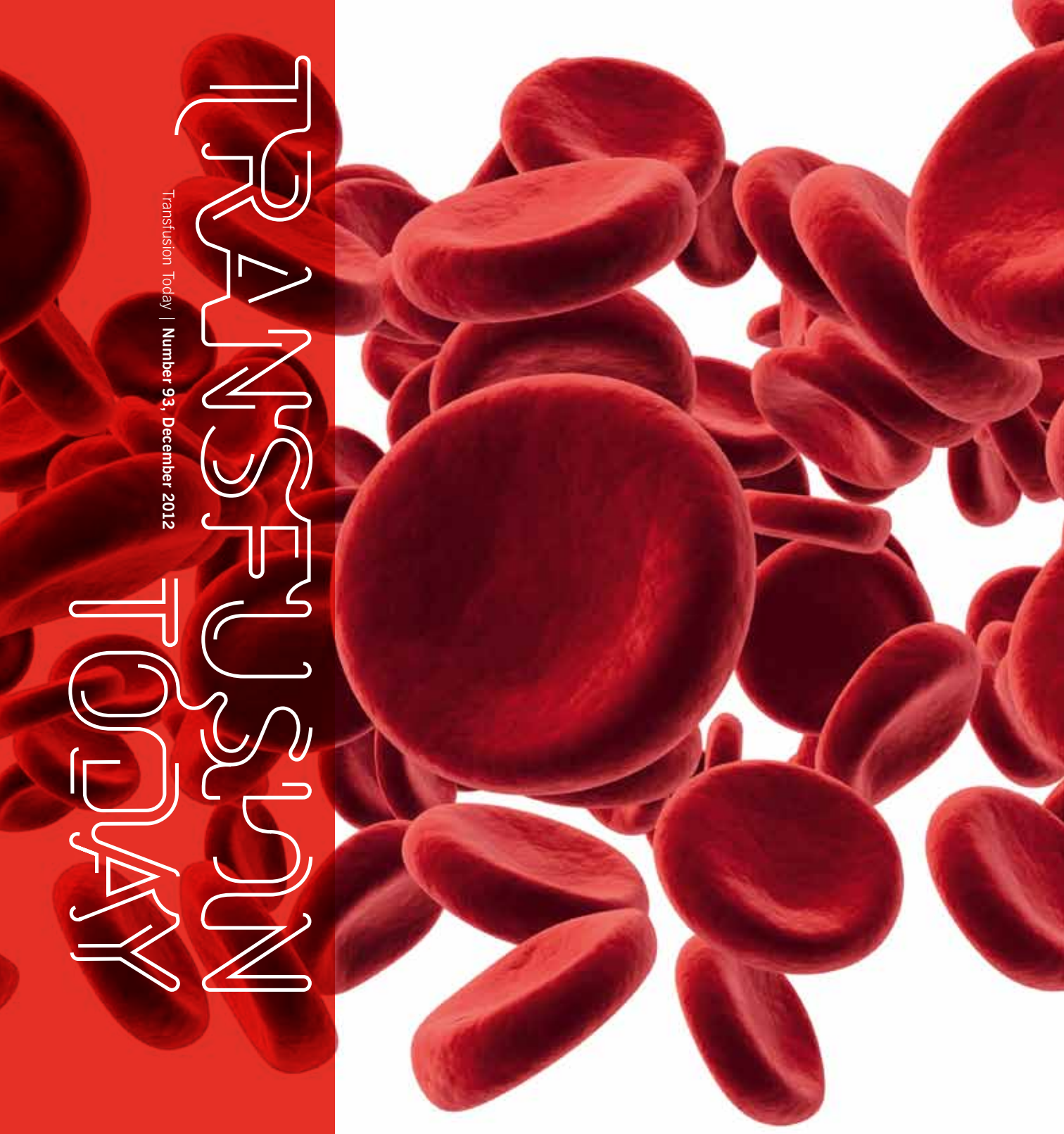
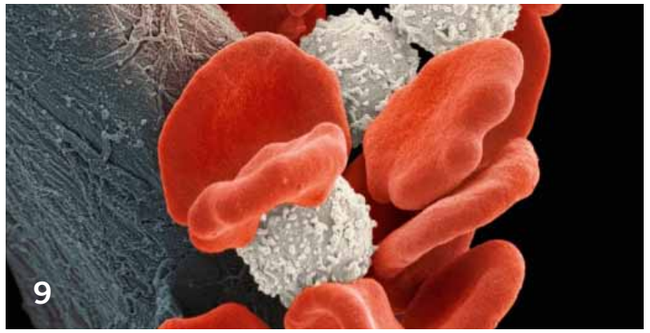


Hot Topics 2013

ISBT

Contents



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Judith Chapman

Editorial

As I write this we in the office are preparing for the first ISBT Board meeting to take place in our new office. When we were searching for office space we looked for somewhere where we could also have a meeting room to host meetings such as the ISBT Board meeting or meetings of ISBT Working Parties. We recently hosted the Board of the Dutch Transfusion Society which reminds me that the preparations for the regional congress in Amsterdam are going well. All the information that you require is on the congress website www.isbtweb.org/amsterdam. Look out early next year for a video on the website where members of the ISBT staff will feature in a bike tour of our locality. We will make this video to encourage delegates to hire bikes to get to the congress centre. This is the way that those of us who live in the Netherlands go from place to place and so we encourage you to hire bikes when in Amsterdam.

The office staff wish you a good holiday season and best wishes for 2013.

Hot Topics 2013

The title of the focus section for this issue of Transfusion Today is Hot Topics for 2013. We asked each of the ISBT Working Party chairpersons if they would contribute to the focus section by informing us about the topics that they feel will be up and coming and new in 2013. We hope you find the topics of interest. You may have other suggestions for hot topics for 2013. Email them to us communication@isbtweb.org and we will place them on our Facebook page and post a 'tweet'.

Engaging ethnic minorities as blood donors

Donors and Donation Working Party

The topic of minority recruitment has featured at many international conferences over the last years, with many experiences shared. A new approach has been taken by Héma-Québec.

Many studies show that there are proportionally fewer donors from ethnic minorities than from the majority. In 2008, Héma-Québec commissioned a research team (INRS) to carry out a project that led to the development of a multi-step process and training programme to discuss and evaluate activities that the organisation could implement to better attain the following objectives:

1 Recruit new donors in ethnic minorities;
2 Build their loyalty;
3 Ensure their satisfaction throughout the experience of donating.

The process identifies two steps to prioritise:
a Identifying groups that meet medical priorities, while avoiding those that face major exclusions;
b Defining the agency's comfort level in taking into account principles that deviate from the "purely" altruistic model of donation in their own recruitment strategies, while taking into account the symbolic conceptions of blood and blood donation among various cultures and religions.

Three distinct approaches can be chosen by Héma-Québec in this regard:
1 It can limit itself to a traditional individualistic approach;
2 It can address a collective target, while maintaining strategies addressed to individuals;
3 It can choose a strictly collective strategy.

The proposed training programme which is currently under way aims to present this process, drawing on case studies of different ethnic communities in Quebec.

The training programme will raise the following topics:
1 The cultural and religious symbolism of blood;
2 The vocabulary of ethnicity;
3 The contributions of international research;
4 The socio-demographic dynamics of immigration;
5 The geography of ethnic groups and of places of worship;
6 The practical aspects (awareness-raising, information, experience of donation, follow-up with donors and loyalty building, publicity, strategies for establishing partnerships to organise blood drives);
7 The strategies for individually and collectively acknowledging donors and partners;
8 The impacts on Héma-Québec's staff and on donors from the majority population.

Sandra Nance

Provision of blood for rare donors

Rare Donors Working Party

The ISBT Working Party on Rare Donors has 22 members from 18 countries. The members are their country's representatives and they have active Rare Donor Programs. The overall objective of the Working Party is to provide a mechanism for collaboration between countries to enable provision of rare blood products to the patients who need them.

The International Rare Donor Panel database is primarily made up of donors from the countries represented on the Working Party. Thus, it is important that countries with active Rare Donor Programs are members of the Working Party. The focus of the last few years was to include such countries so that several new countries were added recently (Canada, Finland, India, Iran, Italy, Singapore and Spain). Another recent action has been to include members whose country is striving to locate and store blood from Rare Donors. This was encouraged by the past Chair of the Working Party, Dr Graeme Woodfield, and taken to heart by the Executive Committee of the Working Party. Countries represented in the Working Party are shown on the map.

The most important activity of the International Rare Donor Panel is to make rare donors available for patients who need them. Even the best inventories may lack certain types, especially if ABO types are different from those of the available donors and if antibodies to other common antigens are present. The countries reported that the types listed in Table 1 are most difficult to find.

It is our aim during 2013 and beyond to increase the number of countries with a rare donor panel and to increase the number of rare donors registered.

The ISBT Working Party on Rare Donors is a vibrant group, eager to assure that each patient who needs rare blood is able to receive it. This activity recognizes no political boundaries and thus is all for the common good of patients around the world. The Working Party would like to honour the dedication of Ms Joyce Poole who has worked tirelessly in the administration of the International Rare Donor Panel on behalf of WHO. Ms Poole retired in July 2012 after nearly 50 years of dedicated service to patients. The Working Party would also like to thank all those centres and their staff who make differences every day in the lives of patients!!

Countries that are represented in the Working Party are listed in table 2. If your country is not represented and you are interested in joining the Working Party please contact Sandra Nance: Sandra.Nance@redcross.org or Christine Lomas Francis: clomas-francis@nybloodcenter.org

A longer article about the work of this working party is available on isbtweb.org

Nelson Tsuno
Sentot Santoso

How platelet alloantibodies may affect the function of endothelial cells

Platelet Immunobiology Working Party

Platelet reactive alloantibodies play an important role in the pathomechanism of platelet destruction in a variety of alloimmune mediated platelet disorders, including platelet transfusion refractoriness and neonatal alloimmune thrombocytopenia. Antibody binding to cognate antigens on platelet surface results in platelet clearance by mononuclear phagocytes via Fc receptor. Several reports, however, documented no significant correlation between the presence, the specificity, and the concentration of antibodies with the occurrence and the severity of disease.

It is well-known that endothelial cells and platelets do share some antigenic determinants (e.g. b3 integrin, HLA class I antigens). It is therefore conceivable that platelet reactive alloantibodies may also react with endothelial cells. Treatment of endothelial cells with HPA-1a antibodies directed against polymorphic epitopes on b3 integrin affected endothelial cell spreading and cell integrity accompanied with redistribution of adhesive molecules in cell junctions; an effect which could contribute to endothelial dysfunction and increased bleeding in children with neonatal alloimmune thrombocytopenia.
Recent reports showed that ligation of HLA class I antigens on endothelial cells by HLA class I antibodies can trigger different cellular events depending on antibody concentration. Whereas high concentrations of HLA class I antibodies cause cell death by apoptosis, HLA class I antibodies conferred endothelial resistance towards antibody/complement-mediated lysis in low concentrations. In addition, binding of antibodies to endothelial cells could lead to several functional events, including leukocyte recruitment, growth factor expression, and cell proliferation.

Thus, understanding how platelet reactive antibodies can mediate signaling pathways in endothelial cells may help us to better understand the potential role of these antibodies not only in immune mediated thrombocytopenia, but also in other diseases such as, antibody mediated organ rejection, and antibody mediated transfusion related acute lung injury.

Table 1
Most difficult types to find per country

China	Rh_{null} D - -
Finland	Vel neg; O_h hr^S –
France	U- ; Fy(a–b–); Vel– ; Rh_{null} ; D - - ;Hr–; Hr^B –
Germany	Fy(a–b–), U–, Gy(a–), Hy–, Jo(a–), Js(b–) O_h D- -, Rh_{null}, K_{null} Kx–,Jk(a–b–), Ge–, PP1Pk-, Di(b–)
India	In(a+b–), D-–/D-–; Rh_{null} ; Co(a–b–)
Iran	E– c– Jk(b–); E–c–K Jk(b–); C– E– Jk(b–) S– M–; E– C– c– e–
Israel	Rh_{null} Jr(a–) , Vel–
Italy	SC:–1; LW(a–b–); K_0; Jk(a–b–); Lan–; I–; P–; P^k–; Jr(a–); S–s–U–; hr^B –; Di(a+b–); Hy–; Jo(a–); Kp(b–); Js(b–)
Japan	D–-; $PP1P^k$ –; I– ; En(a–); Ge–
New Zealand	K_0
Singapore	Di(b–)
South Africa	Ge–, Lan–, JK:–3, Lu:–5, $PP1P^k$–
Spain	$K^{0:}$ McLeod; Co(a–b–); GE:–2,–3; Rh_{null}; RH:–17; GE:–2; ; Cr(a–); LW(a–); In(b–); SC:–1; At(a–); Lan-; RH:–45; JK:–3; P–; I–; U–
Switzerland	Lan–; Jr(a–); U–; Rh_{null}; K_0; O_h
Taiwan	DI(b–); Rh_{null}
The Netherlands	D– U–; K_0; Rh_{null}; Di(b–); Multiple antibodies & rare phenotype{(e.g. Fy(a–b–)}
USA	E– hr^S–; SC:–1,–2; At(a–); Lan–; I–; Jr(a–); $PP1P^k$–; E– hr^B–

Table 2
Countries represented in Working Party

Brazil	Japan
Canada	Netherlands
China	Singapore
Finland	South Africa
Germany	Switserland
India	Taiwan
Iran	TBD
Israel	New Zealand
Italy	USA

Jonathan Wallis

Prophylactic platelet transfusion: room for reduction

Clinical Transfusion Working Party

In developed countries 70% or more of platelet transfusions are given as prophylaxis to patients with bone marrow failure. Demand for platelets has been rising steadily for a few years. In 2010 a platelet dose trial (PLADO) in North America showed that lower doses of platelets were as effective as higher doses in preventing bleeding , and overall used fewer platelets but did require more frequent infusions (Slichter et al. NEJM 2010; 362: 600-13).

A question arose as to whether prophylaxis was of any real value. Two trials had already set out to answer this question. A randomised trial in Germany allocated patients, either with acute myeloid leukemia or undergoing high dose chemotherapy and autologous stem cell rescue, to a standard prophylactic strategy(threshold for prevention of 10x10'9/L) or platelet transfusion only when bleeding occurred (therapeutic strategy) (Wandt et al, Lancet 2012; 380: 1309-16).

More episodes of serious bleeding occurred in the treatment group, but the two fatal cases of intra-cerebral bleeding occurred when the platelet count was above 10x10'9/L with headache, or during an episode of sepsis when the patients should have received platelets anyway but did not in error. Patients in the therapeutic group only with a new headache had an urgent CT head scan. Through this mechanism they detected 6 small and otherwise clinically non-significant intra-cerebral bleeds. These and all the more serious bleeds occurred in the patients with AML and not in the autologous stem cell rescue patients. Wandt et al conclude that platelet transfusion may safely be given only as a treatment strategy in patients having relatively short periods of thrombocytopenia. A second trial of similar construction, the TOPPS trial, is due to report very shortly. This study is UK based and led but with participants in New Zealand and elsewhere.

> " Wandt et al conclude that platelet transfusion may safely be given only as a treatment strategy in patients having relatively short periods of thrombocytopenia".

Early indications (Stanworth et al, https://ash.confex.com/ash/2012/webprogram/Paper48819.html) are of similar findings to Wandt et al and suggest there may be room for careful reduction of platelet prophylaxis in lower risk patients.

Garnet Suck

Genetically modified T-cells target chronic lymphocytic leukemia

Cellular Therapies Working Party

The development of chimeric antigen receptor (CAR)-modified T (CART) cells has taken the potential of immunotherapy to a new level.

CARTs are equipped with an antigen-binding site of a specific antibody linked to an internal signalling domain, commonly the CD3-zeta chain of the TCR/CD3 complex. Thus, their activation can be triggered by specific antigens in an human leukocyte antigen (HLA)-unrestricted manner. However, the in vivo persistence of such initial or 'first-generation' CARTs and the clinical benefits have been limited.

Recently, David L. Porter et al. and C. H. June from the University of Pennsylvania achieved a breakthrough in a clinical pilot trial with autologous CART19-cells directed against advanced chronic lymphocytic leukemia (CLL; NEM 2011;365:725-33). Their 'second generation' CAR-construct contained an additional domain, the co-stimulatory T-cell molecule CD137 (4-1BB), to promote enhanced anti-tumour activity and prolonged in vivo persistence of the effectors.

The team reported the case of a 64-year old patient with advanced p53-deficient CLL. The CART-cell number was very low with a total infusion dose of 1.5x105 cells per kilogram. However, three weeks after infusion, CART19 cells had expanded 3-logs in vivo and infiltrated the bone marrow. As a response to CART19 lytic activities, inflammatory cytokine levels were elevated and a serious grade 3 tumour lysis syndrome had developed. On day 23, aberrant CLL cells were no longer detectable in bone marrow specimens. Therapeutic T cells persisted for at least 6 months and disease remission was still ongoing 10 months after treatment. The long-term impact on the patient's health will now be of greatest interest.

This proof of concept study has sparked renewed interest in the field of CAR-mediated cellular therapies and the continued persistence of these cells post infusion is encouraging.

Porter, D. L. et al. and June, C. H. (2011). Chimeric Antigen Receptor-Modified T Cells in Chronic Lymphoid Leukemia. N Engl J Med 2011; 365:725-33.

Paul Strengers

Assuring safety and supply of blood in 2013

Quality Management Working Party

In the coming year(s), the Working Party on Quality Management will address a number of hot topics. Quality management in donor recruitment, in donor counselling, in blood collection and in donation testing, in processing/ manufacturing of blood components and in logistics, in working according to Standard Operating Procedures, in validation and in documentation, in education and training, etcetera, is essential in order to manufacture blood components according to Good Manufacturing Practices.

By doing so, best practices for developing high standards of quality and safety will be developed, implemented, and strengthened to guarantee that patients who need blood components which are lifesaving or essential for improving their health, will receive the best products.

Quality Management is paramount to guarantee that the availability of safe blood and components for transfusion is essential to public health in all countries. Serious unmet needs for whole blood and RBC exist in many developing world countries. Adequate blood supplies are a necessary underpinning of more advanced medical therapies.

In November 2012, the WHO Expert Committee on Biological Standardization has adopted a proposal to submit a request to WHO to put whole blood and red cell concentrates (RBC) on the WHO Model List of Essential Medicines, which is in line with the 2010 World Health Assembly resolution on 'Availability, safety and quality of blood products'. The characteristics of whole blood and RBC (and other blood components) support the view that they are biologic medicines. The quality and safety of blood components depends on meeting recognized standards in manufacturing.

Consequently, blood components are regulated as biologic medicines in many jurisdictions. Addition of blood components to the WHO Model List of Essential Medicines will promote the global availability of safe blood for transfusion and advancing global health, will create government attention to establishing and maintaining National

Blood Systems to assure supply and safety, and will create recognition of the need for blood regulation, protection of donors, and assurance of blood quality and safety. Listing of Whole Blood and RBC would be especially important to address unmet needs for effective treatment of hemorrhage and anemia in many developing countries. This initiative will focus all members of the Working Party on the implementation of GMP in blood establishments.

A second hot topic is the development of quality indicators in order to be able to implement metrics which can provide information on the processes performed and which can assist in improving these by having independent parameters of input, performance, and output.These two hot topics are becoming hot topics for the Working Party on Quality Management and challenging for all involved in quality management in blood transfusion medicine.

Ralf Knels

Automation & standardization of electronic data

Information Technology Working Party

Starting from the early seventies of the last century information technology changed the workflows in all parts of Transfusion Medicine. Full and half automated devices are used in collection, manufacturing and testing areas.

All these devices collect and are able to send data. But similar to our human world different “languages” are in place and near all companies’ output self-created data strings. What is good news for interface specialist can be dangerous for our patients. To save money a lot of devices are not connected to computer systems, thus important information about the process quality is missed. Sometime failures occur by assigning data in the blood bank software. Last but not least the time of the medical team is inappropriately used!

The Task Force “Automated System Interfaces” of Information Technology Working Party (ITWP) works together with device makers and ICCBBA on standardized data protocols for interfaces in Transfusion Medicine. One of the main goals of the ITWP work is to push this work forward and to establish standards within the already existing protocols. For further information about this work or to participate in the Steering and working groups of this task force please contact Linda.Lodge@nhs.net

Another hot topic is the diversity of blood bank management systems. In the last years we recognized a consolidation with traumatic experiences for some blood banks, because from one day to the other existing systems was not supported furthermore. To minimize troubles around implementing blood bank management software an often ask question to the ITWP is ‘Which systems is the best’. We discussed this question at our assembly meeting and agreed that we can’t really answer this question, but we like to provide support. Our goal is to create a guidance document about “Decision making support form for blood bank management system” and we are waiting for your input and comments!

New telecommunication devices with more functionalities and memory capacities are flooding the market. We are sure that a couple of them will find the way in our transfusion world. But for everybody who likes to use this new wonders, don’t forget that radio frequency has maybe an influence on biological materials. The RFID Business Consortium in Milwaukee tested with an FDA approved protocol the influence of 13.56 MHz radio frequency in worst case scenarios. No significant influence was observed. In a next step the Consortium likes to validate an ultra-high frequency for RFID applications. Similar frequency levels are used for mobile telephones, too. Unbelievable, but the Validation Task Force such the ITWP in general finds new and new areas to working in. If you are interested in our work, please join us!

ITWP is the ISBT platform for defining and promoting strategies on using information technologies (ITs) for transfusion medicine and related areas.

The Working Party and the Task Forces are open for all colleagues interested in information technology, automation and standardization of electronic information. Please contact the chairperson via r.knels@blutspende.de

Susan Stramer

Dengue viruses

Transfusion Transmitted Infectious Disease Working Party

Dengue viruses are mosquito-borne flaviviruses distantly related to West Nile virus (WNV) and other members of the Japanese encephalitis subgroup.

Of all the flaviviruses, only WNV and dengue have been demonstrated to be transfusion transmitted. WNV blood donation screening using assays licensed by the US Food and Drug Administration is commonly employed in endemic/epidemic areas (e.g., the US, Canada and many parts of Europe) but not routinely done for dengue viruses.

Of all arthropod-borne viruses (arboviruses), dengue is the most important due to its rapid emergence with approximately 40% of the world’s population living in tropical and subtropical areas where mosquito vectors are active and hence dengue infection and clinical disease occur. Dengue infection results in an estimated 50 million cases of disease annually, is the leading cause of hospitalization in children in Asia and Latin America, and has no specific treatment or vaccine. Although immunity to each of the 4 genetically distinct dengue viruses is believed to be life-long, immunity between types is short lived and increases the risk for severe dengue if infected with a heterologous type due to incomplete neutralization and a subsequent cascade of host factors that may lead to hemorrhagic symptoms, shock and possibly death. Considering the high number of infected individuals, of which ~75% are asymptomatic or have a short asymptomatic viremic period and thus may be blood donors, it is surprising that only three transfusion-transmitted clusters have been reported (Hong Kong, 1 infected/1 symptomatic recipient; Singapore, 3 infected/2 symptomatic recipients and Puerto Rico 1 infected/ symptomatic recipient in 2007).

Options for blood donation screening tests target the nonstructural antigen of the virus (NS1 Ag) using commercially available, CE-marker kits, or target RNA using nucleic acid tests (NAT) for which no commercial kits are available.

The American Red Cross has tested all collected blood donations for dengue viruses in Puerto Rico since 2010, first using an investigational NS1 Ag test (Bio-Rad Laboratories, Redmond WA, USA, kits manufactured in France) and now using investigational NAT (Gen-Probe, San Diego CA, USA) by transcription mediated amplification (TMA). The NS1 Ag-positive rate was lower than expected: 1 per 6200 in 2010 and none in 2011-2012. In contrast, TMA-positive blood donation rates correlate with modeled projections during multiple dengue outbreak seasons, noting that outbreak magnitudes vary from year to year. TMA-positive donor rates in 2005 were 1 per 1400, in 2007 were 1:500, in 2010 were 1:285, in 2011 were 1:3000 and currently in 2012 are 1:700. These data demonstrate that blood donation screening for dengue is feasible and has a high yield; however, the public health benefit of this intervention is likely marginal.

Masja de Haas
Jill Storry
Connie Westhoff

Use of blood group genomics for decision making in transfusion medicine

Red Cell Immunogenetics and Blood Group Terminology Working Party

Antibody technology has been the basis for blood typing since the discovery of the ABO blood groups, but blood typing is changing in the era of genomics with the ability to type for blood group antigens with DNA-based technology.

In the U.S., this approach has been implemented in many donor centers, as it allows screening for multiple clinically significant antigens in a single assay to provide antigen-negative blood to hospitals.

For patients, a DNA approach allows typing in the chronically transfused, especially those with sickle cell disease, where circulating donor RBCs make serologic typing inaccurate. Further, RH genotyping detects altered antigens not detected serologically. In patients with autoimmune hemolytic anemia, DNA-based typing allows the work-up to be focused on the antibodies the patient may make, and to better select donor units for transfusion. This is particularly advantageous when compatibility cannot be demonstrated by routine testing or when increased RBC destruction is seen in the absence of serologic detectable antibody.

Noninvasive genotyping of RHD from free fetal DNA in the plasma from D-negative pregnant women is becoming well-established in Europe, to avoid unnecessary administration of RhIG. Genotyping for fetal RHD, RHC, RHc, RHE and K in alloimmunised pregnant women is also offered as a routine clinical service in a growing number of laboratories to determine risk of hemolytic disease of the fetus and newborn. Unfortunately in the U.S., intellectual property and licensing issues, as well as reluctance to risk a false negative result with possible immunization in the mother, has limited typing of the fetus from maternal plasma.

The Red Cell Immunogenetics and Blood Group Terminology Working Party initiated a biannual international external quality assurance scheme in 2004 to provide a platform to evaluate what was being performed worldwide. We reported the results of the 6th workshop in July and observed overall standardization between laboratories. As highlighted at the last ISBT in Cancun, the next challenge is to implement large-scale automated fetal RHD genotyping in nonimmunised D-negative pregnant women for targeted antenatal immunoprophylaxis.

In Denmark and the Netherlands, fetal RHD typing has been introduced in such programs by typing relatively late in pregnancy. In the UK, Sweden and Norway, studies are underway to determine the earliest time in pregnancy reliable fetal RHD typing can be performed, to rationalize the unnecessary use of Rh immunoglobulin.

In a growing number of transfusion medicine laboratories, DNA-based analysis is an important part of the decision tree in improved patient care and we anticipate it will be become fully integrated into our routine.

Leendert Porcelijn
Yoke Lin Fung

Transfusion related immuno-modulation by neutrophils

Granulocyte Immunobiology Working Party

For many years we have known that neutrophils (PMN) are central to innate immunity, as neutropenia or defects in PMN function predisposes to increased susceptibility to infections (e.g. in neonatal alloimmune neutropenia and neutropenia in childhood). Furthermore, PMNs are known to be principal effector cells in TRALI, a major cause of transfusion-related fatalities[1]. The risk profile of TRALI has driven the demand for high throughput PMN antibody screening platforms for blood donors, to minimise the risk of antibody mediated TRALI. This is challenging, because PMNs are fragile, short-lived cells displaying glycopeptide antigens which can be strongly conformation dependent. More recently it is has been shown that PMNs also carry out important functions in collaboration with other cells such as platelets, monocytes and the endothelium[2,3]. Animal models have been useful in demonstrating that transfusions can modulate these interactions[4,5]. Hence, transfusion immunomodulation by PMNs is an important area of research in the next years.

The granulocyte immunobiology working party (GIWP) recommends, stimulates and monitors different aspects of PMN investigation and research. In 2009 the GIWP published recommendations for the investigation of TRALI[6]. Some members recently characterised the HNA-3 antigen[7] and others are actively involved in the development and testing of innovative high throughput PMN antibody screening platforms[3,4]. Technologies applied include the use of beads coated with HNA[8], new recombinant antigens[9] and new cell lines[10,11]. Expertise within the GIWP enables it to provide thorough assessment, validation and consideration of these new platforms prior to their routine use, which the transfusion community eagerly awaits.

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Peter Flanagan

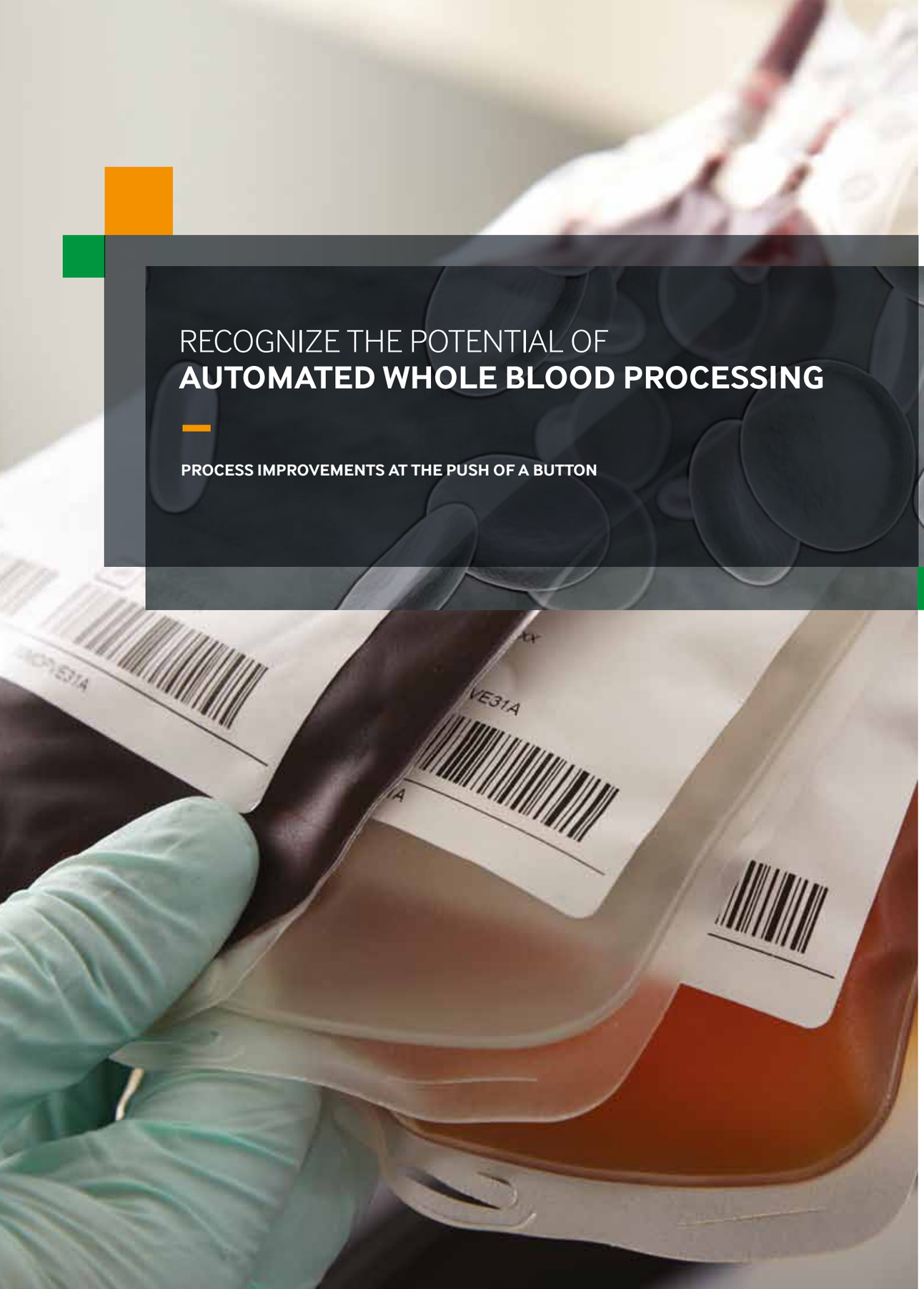
The Strategic plan for the society was developed by the Board just before the Lisbon congress in June last year. A summary of the plan is available on the Society website. A key goal in the plan is to increase the membership of the society. In fact this has been a priority for some years. A number of initiatives have aimed to increase membership in low and medium HDI countries and to increase the proportion of younger members. These have made membership more affordable but have not resulted in a significant increase in the overall membership. A membership survey was commissioned to seek the views of current members and to identify areas for improvement.
The report of the membership survey will be the key item addressed in the November Board meeting. I will provide an update on the key outcomes from the discussions in the next edition of Transfusion Today.

The membership report identified that members are generally satisfied with the society and its activities. Key reasons for joining included opportunities for networking, access to educational initiatives and receiving Vox Sanguinis. The working parties were identified as an important and unique aspect of the society activities. In many ways they are real 'point of difference' between ISBT and other international societies in the field. Intriguingly though this was also the area where member expectations were less likely to be met. The activities of the working parties are central to the success of the society but we can do better to improve visibility and transparency around their activities. Working parties within ISBT have a high level of independence. This acknowledges that they are a forum for experts to meet, share experiences and identify opportunities for collaboration. The working parties drive their own agendas but it is also important to ensure that these are consistent with the overall goals of the society and also with the Code of Ethics. Clearly a careful balance is needed to ensure that effective governance of the working parties does not impact adversely on their freedom to move transfusion medicine and science forward. In recent years efforts have increased to improve visibility in this area by showcasing working parties in the overall congress agenda. However we need to find more ways to improve visibility and access to the working parties. Potentially this will assist with the overall goal of increasing membership numbers.

The membership survey identified access to educational resources and tools as the most important benefits for members. Feedback on the webcasts of the plenary sessions from the International Congress in Cancun has been very positive. These widen access to the content of congresses beyond those able to attend. A decision has already been made to continue this initiative for the two regional congresses in 2013. We are also considering how the value might be further improved by the introduction of specific questions linked to the webcasts for continuing professional development purposes. Access to the webcasts will continue to be free to members. Potentially they might be made available to non-members as well. This might involve a small charge for access or possibly a delay in making them available so that members continue to gain a real benefit. The webcasts are only a first step towards broadening the educational resources and tools for members. The society needs to move quickly to utilise the benefits of new technologies in this area. In particular we need to develop a plan for e-learning. The November Board meeting will be an important step in setting the agenda for this.

I wish you all the season's greetings and best wishes for a successful 2013.

Peter Flanagan
ISBT President



RECOGNIZE THE POTENTIAL OF **AUTOMATED WHOLE BLOOD PROCESSING**

PROCESS IMPROVEMENTS AT THE PUSH OF A BUTTON

TERUMOBCT
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Automated whole blood processing improves lab efficiency, blood component quality and process control, as compared to manual processing.

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- Higher quality products
- Improved product consistency
- Increased throughput
- Higher yields
- Optimized workflow
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Geoff Daniels

In early October I attended a symposium, at the Royal College of Pathologist in London, to celebrate the career of Joyce Poole, who retired in August. I mention this here, because of Joyce's enormous contribution to the international blood transfusion community over her 47-year career. For many years she ran and developed the Red Cell Reference Lab of the International Blood Group Reference Laboratory (IBGRL), which resolves complex blood grouping problems as a service to hospitals and red cell immunohaematology labs worldwide. In addition, Joyce managed the International Rare Donor Panel (IRDP), so it was appropriate that one of the speakers at the symposium was Sandy Nance, Chair of the ISBT Working Party on Rare Donors. The IRDP was conceived as an initiative of the ISBT in 1965, the year Joyce Poole started work at the IBGRL. It lists over 4000 blood donors with rare blood group phenotypes, together with contact names in order to find out if the donor is available, and whether any units are frozen. The panel can be accessed through the internet and over 1000 internet searches are made each year. If you need to access the IRDP you should contact Nicole Thornton (nicole.thornton@nhsbt.nhs.uk).

An international forum on rare donors published in Vox Sanguinis (2008;95:236) found that there was no agreed definition of a rare donor, but that the consensus is that a donor who lacks a high frequency antigen, with an incidence of 1/1000 or less, is considered rare, and that donors may also be considered rare if they are negative for certain combinations of blood group antigens. In South-East Asia, RhD– may be considered rare. The phenotypes that appeared to be the most difficult to find internationally are Ko, McLeod, p, U–, Lan–, Vel–, and Ge:–2,–3. Donors with all of these rare phenotypes are listed in the IRDP.

Who would have thought in 2001 when the first draft sequence of the human genome was published, that 12 years later a paper would appear in Nature (2012;491:56) describing the genome sequence of over 1000 individuals? That has been made possible by replacement of the traditional Sanger method of sequencing, first introduced in the 1970s, by Next Generation Sequencing (NGS), also known as Massively Parallel Sequencing. This extremely powerful technology makes it possible to sequence the genome of 10 individuals in one sequencing run, but it also makes it possible to sequence selected regions of the genome of thousands of individuals in one run.

Although NGS has been extremely expensive, with the 1000 genomes project costing almost €100m, costs are now plummeting and there can be no doubt that NGS will play a major role in all forms of diagnostics within the next few years. In transfusion and transplantation medicine, this means red cell, platelet, and neutrophil group typing, HLA typing, and pathogen detection. The first fetal genome has now been sequenced from cell-free fetal DNA in the mother's blood (as described by Denis Low at the ISBT Congress in Cancún), so fetal blood grouping by NGS will soon be developed. Further on, NGS may be used to assess the likelihood of any patient making antibodies following transfusion or how often any blood donor can donate safely. Of course, as with the introduction of any new technologies, the initial benefits will only come to the wealthier countries of the world, whilst those transfusion services with limited resources will continue to struggle. We can only hope that the advantages provided by such new technologies will, at the very least, trickle down to benefit everyone eventually.

Finally, I would like to wish you all a very happy and successful 2013, and I hope to see you at one of the ISBT Congresses to be held in Amsterdam in June and Kuala Lumpur in November, or even at both.

Geoff Daniels
ISBT Secretary-General

August - October 2012

Welcome to our new members

Africa
- **NAMIBIA:** Israel Chipare
- **NIGERIA:** Teddy Adias
- **SOUTH AFRICA:** Elizabeth Poorun

Americas
- **ARGENTINA:** Asociación Argentina de Hemoterapia e Immunohematología
- **CANADA:** Benjamin Rioux-Masse
- **USA:** Christie Otis, Gemán Añez, J. Wade Atkins, Roberta Bruhn, Samuel Lee

Eastern Mediterranean
- **IRAN:** Mohsen Manshadi
- **IRAQ:** Nadher Abed
- **PAKISTAN:** Usman Waheed

Europe
- **DENMARK:** Henrik Gammelager Kristensen
- **FINLAND:** Anu Korhonen
- **GERMANY:** Torsten J. Schulze
- **ITALY:** Agostino Rossi
- **MALTA:** Jesmond Debono
- **TURKEY:** Ismail Ugur Tasdelen

South East Asia
- **VINDIA:** Anil Deshmukh
- **SRI LANKA:** Nilmini Hettiarachchi
- **THAILAND:** Janejira Kittivorapart

Western Pacific
- **AUSTRALIA:** Peter McDonald
- **JAPAN:** Ryushi Shimoyama

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2013

Feb 20 - 22

15th International Haemovigilance Seminar,
Brussels, Belgium
www.ihs-seminar.org

April 23 - 24

19th Annual ISCT Meeting
Auckland, New Zealand
www.celltherapysociety.org/index.php/meetings-events/ISCT2013

May 20 - 24

IPFA/PEI 20th International Wrokshop on "Surveillance and Screening of Blood Borne Pathogens"
Helsinki, Finland
http://www.ipfa.nl/events/ipfa-pei-workshop-2013-20th _ anniversary

May 20 - 24

IX Latinamerican Meeting on Hematology, Immunology and Transfusion Medicine
Havana, Cuba
www.hematologiacuba.com/

From ISBT Central Office

Ellen van der Schoot
Congress President

23rd Regional Congress of the ISBT

The Local Scientific and the Local Organising Committee are proud to be able to offer you an exciting scientific and social programme for this ISBT Congress, aiming for a combination of science, education, and social contacts.

The scientific programme offers you a number of tracks to find your way through all the sessions: donor health and (product) safety, clinical transfusion science, basic transfusion science, transfusion technology and quality and new cellular therapies. Each track will have educational sessions and hot topics, and poster sessions.

Special attention will be given to evidence based donor and transfusion medicine. Speakers will not only be invited from the traditional transfusion field, but also inspiring scientists from neighbouring fields, giving new insights into knowledge and innovation that will hopefully find its way into our research, into transfusion medicine and blood banking. Educational sessions for delegates from developing countries will also be part of the congress programme, in close cooperation with the ISBT Academy. The Young Investigators Session introduced in Cancún will be present in Amsterdam.

We are looking forward to welcoming you on behalf of the local scientific and organizing committees in June 2013.

Abstract submission and registration

Via the congress website www.isbtweb.org/amsterdam you can register for the congress and submit your abstract. Details of topics and the way to submit your abstract are available under abstract submission.

New this time is that we have a new online registration system. With the simple step-by-step registration form you register for the congress and choose your hotel all in one go.
Please note that pre-registration via the website will not be possible after May 20, 2013.

Hotels

A number of rooms have been taken in option for the 23rd Regional Congress Amsterdam. The price range is from €110,- to €300,- per night.

Scientific programme

Details of the scientific programme can be found on the congress website.

Key dates to remember

March 3, 2013
Deadline for Abstract Submission

April, 2013
Information about Abstract allocation

April 21, 2013
Deadline early registration fee

May 19, 2013
Deadline for online registration

June 2 - 5, 2013
Congress Dates

Key information

Congress venue: Amsterdam RAI
Europaplein
1078 GZ Amsterdam
The Netherlands

WESTERN PACIFIC

Pacific Transfusion Leaders Program

Good leaders are crucial in driving transfusion policy and improving technical capability at institutional, national and regional levels. In recognition of this, the Pacific Transfusion Leaders Program (PTLP) has been established to develop and support a Pacific network of leaders in transfusion.

The program aims to develop the capacity to understand and analyse a broad range of transfusion-related policy and content issues. It also focuses on the leadership skills to drive improved policy and practice within their country and in collaboration with their peers across the region, the ultimate aim being safer collection, processing and clinical use of blood products.

The PTLP is supported by an Australian Leadership Awards (ALA) Fellowships grant from the Australian Agency for International Development (AusAID). ALA Fellowships are designed to develop leadership, address regional development issues and build linkages between Australian organisations and partners in developing countries in the Asia-Pacific region, Latin America, the Caribbean, Africa and the Middle East, The PTLP brings together ten leaders with scientific, nursing and medical backgrounds who have demonstrated a strong interest in blood transfusion. The fellows come from Papua New Guinea, Solomon Islands, Vanuatu, Tuvalu, Fiji, Samoa, Tonga, Cook Islands and Kiribati.

From Dr Merrilyn Mathias, the Director of the Papua New Guinea Blood Service, who is responsible for the collection, testing and processing of more than 26,000 blood donations each year, to Dr Folototo Leavai, a medical registrar in the emergency department at Hospital Apia Samoa, they are united by the drive to improve blood transfusion policy in their countries. The program works with the fellows in four key areas: leadership, transfusion policy, technical capability and research capacity. The focus is on developing an understanding of the requirements for effective blood systems, the capacity to research areas of need, and supporting fellows to develop and exercise their leadership skills to effectively influence domestic and regional transfusion policy and practice.

Commencing in 2011, the fellows undertook a short course in Leadership in Public Health at the University of Melbourne, Nossal Institute for Global Health. While the fellows are all well regarded as leaders in their countries, none had been exposed to any leadership training before. They found this course thought provoking and inspiring, helping to increase their confidence and their awareness of their roles as leaders.

To develop their technical capacity, the fellows have undertaken placements within Australian organisations, including hospital transfusion laboratories and with the Australian Red Cross Blood Service. There they observed practice and built relationships with Australian organisations and shared their experiences with Australian transfusion professionals, increasing their awareness and interest in Pacific blood transfusion systems. Highlighting blood transfusion to the broader community, they have appeared on Australian national and Pacific regional radio following media training.

They have also spent time looking at the importance of data in driving change; how to design a study, search the literature and critically review the literature and discovered the joys of statistics. Back at home, fellows have started projects including strategic plan development and compilation and analysis of blood collection data to inform collection planning.

Fellows have learnt new skills and established a fledgling professional network in the Pacific. They have built relationships with mentors and collaborators in Australian organisations and continue to work to raise awareness of Pacific blood systems within the region and their national transfusion communities.

The development and support of leaders with improved technical knowledge and leadership skills will result in enhanced relationships with governments and other stakeholders. This will help drive improved safety and sufficiency of blood supplies, safer and more effective clinical transfusion practice and reduced health and financial risks faced by transfusion systems in Pacific countries.

Neil Waters,
Australian Red Cross
Melbourne, Australia.
International Humanitarian Blood Advisor

SOUTHERN AMERICAS

Blood Alliances

SOUTHERN AMERICAS

Background

Alliances of operational entities can be powerful engines for improving the quality and efficiencies of services to their customers. Through networking, communications, education, benchmarking and sharing of best practices, alliances are often a low cost way to "lift all boats" in a rising tide, but also in a manner that is friendly and respectful to an organization's proven culture. In addition, most alliances provide an important regional and global voice for their membership, and can work effectively with other regional alliances to pursue common goals.

In blood banking, the oldest and most successful regional alliance is recognized as America's Blood Centers (ABC). Starting in 1962 with seven not-for-profit community blood centers, today ABC has 77 members that provide half of the US and all of Quebec's volunteer donor blood services. Many ABC members also provide blood-related medical, transfusion and therapeutic services, as well marrow donor, cell therapy, organ and tissue services.

Coupled with dozens of volunteer leaders, ABC's infrastructure of 17 expert staff and state-of-the art electronic communications and information technology, dozens of member volunteers support over 15 committees and forums of over 1,200 executive and managerial professionals for nearly daily education, communication and opportunities for benchmarking, improving the availability of the blood supply, and identifying and sharing of best practices. In addition, ABC represents its members to key national and international stakeholders including the media, regulators, legislators and aligned healthcare alliances.

In 2004, ABC signed a Memorandum of Understanding (MoU) with the recently-formed European Blood Alliance (EBA), which represents all Western and many Eastern European national not-for-profit, volunteer donor blood programs and alliances. Initially, the ABC/EBA relationship was for each organization to study and learn the best programs and services from each other. More recently, exchanges are increasing between ABC and EBA members. In 2009 ABC and EBA signed a new MoU that focuses on aligning infrastructures and programs, while seeking to share their alliance models with other areas in the world lacking such a regional organization to foster quality improvements and operational efficiencies.

Also in 2009, the Australian Red Cross Blood Services, working with fellow blood programs in Hong Kong, New Zealand, Singapore, Japan, Korea, and others formed the Asian Pacific Blood Network, modeled after ABC and EBA: "To advance the self-sufficiency of blood systems in our region by capturing and sharing the collective expertise, wisdom and knowledge of our members." In 2010, ABC, APBN and EBA agreed to form an alliance of alliances to foster global exchanges.

ALAS Proposal

The proposal is to form a self-governed Latin American alliance for non-profit blood organizations (hereafter ALAS for Alianza Latinoamericana de Sangre). ALAS would focus on helping its members improve the quality and availability of the blood they provide, as well as the effectiveness and efficiency of their operations for the patients they serve. The alliance would be modeled after ABC, EBA and APBN, but specific services and priorities would be determined by its own Board of Directors made up from volunteers from its members. Until Phase 2 (see below), it is suggested that the priorities will be set by a steering committee of interested individuals. ALAS would use ABC's infrastructure as its own (e.g., information technology, networking and benchmarking tools, committee support, marketing and communications, meeting planning, administrative, accounting). Upon entering Phase 2, ALAS could be an equal partner with ABC, EBA and APBN in a global "alliance of alliances" for networking, learning and sharing best practices.

Phase 1

Initially, ALAS activities would be directed by an ad hoc steering committee of 15 to 20 interested individuals from Latin American countries plus representation from ABC.

During 2012 (or when a Board of Directors is elected, whichever occurs first), ABC will provide to ALAS members free of charge the following services:

- Access to a unique ALAS Listserv, plus access to ABC ListServs (and Forums) as desired (e.g., Medical, Technical, Quality, Donor Recruitment,Financial, etc.)
- Free and unlimited distribution of the weekly ABC Newsletter and other publications to and within ALAS institutional members
- A unique website for sharing information, plus access to ABC and EBA "member only" sites
- Support for steering committee conference calls and webinars

Phase 2

Once ALAS has a fully functional Board of Directors and a sufficient source of funding (dues, grants, etc.), it may hire its own Executive Director and support staff (full or part-time) and ABC will assist (under contract) in:

- Duplication of any desired ABC program (including exploring a Group Purchasing Organization)
- A global voice for Latin American blood organizations
- A full partner with ABC, EBA, APBN for sharing of best practices, influencing global policy
- Its own benchmarking/best practices program (using the ABC DW)

Miriam Bolaños,
Manager, Executive Services
America's Blood Centers
Jim MacPherson,
Chief Executive Officer
America's Blood Centers

Paula Castellanos Fernández
President of Hemotherapy
Association of Guatemala

Foundation of Hemotherapy

Association of Guatemala

As part of the activities of the Immunohematology and Blood Bank Program at the San Carlos University of Guatemala, post graduate students organized a seminar on "Advances in Hemotherapy and Blood Bank" under the coordination of Paula Castellanos September 2012.

During the opening ceremony representatives of the following faculties were present: Oscar Cóbar, Dean of the Faculaty of Chemistry and Pharmacy, Vivian Matta, Director of the Postgraduate School and MSc. Anne Marie Liere de Godoy on behalf of Ibero-Latin American Pharmaceutical Organization in Guatemala.

There were national and international qualified speakers like Oscar Torres and Alejandro Chiera from Argentina, Mario Cruz from El Salvador and Pamela Morales from Mexico and María Isabel Rodriguez from Guatemala, Karina Letona, Miriam Juarez, and Paula Castellanos.

The presented lectures covered the following topics:

- Recruitment of voluntary blood donors
- Mobile blood collection
- Highlights on Chagas´s Disease in Argentina
- Transfusion Therapy in Newborn
- Transfusion of plasma and its derivatives
- Hemorrhagic Shock Management
- Therapeutic Apheresis and Importance of serological markers in Hepatitis C

In addition Ariel Perez Minera and Karla Lanz -both post graduate students- presented a paper on "Correlation between a traditional method for hemoglobin determination versus non-invasive method and practical utilization during mobile blood collections".

Also the industry supported this event with their presence at the exhibition area where delegates had the opportunity to learn about the latest developments in Transfusion Transmitted Infections, Immunohematology and Blood Transfusion Therapy.

Overall the seminar was well attended with two hundred delegates not only from Guatemala City, but also from other different cities throughout the country. The majority of the delegates were blood bank professionals followed by students, nurses and technicians.

The Hemotherapy Association of Guatemala is a relatively new scientific association. Thanks to the efforts of the professionals from the University Course on Blood Banks, members of the Board Association and the help of ISBT Regional Director for Southern Americas Oscar Torres, this scientific association will be very important in providing improvements to the regional transfusion medicine practice.

This association will be responsible for organizing the upcoming congress of the Ibero American Cooperative Group on Transfusion Medicine (GCIAMT) under Paula Castellanos' Presidency. The congress will be held April 24-26, 2013 in Antigua, Guatemala.

Ahmad Massoud Rahmani
National Director Afghanistan National Blood Safety and Transfusion Services

Afghan Senate presents the ANBSTS with a prestigious award

The Afghan Senate presented a prestigious award to Dr Ahmad Masoud Rahmani on behalf of the Afghanistan National Blood Safety and Transfusion Services (ANBSTS). This was in recognition of the progress made by ANBSTS since its inception in 2009.

The progress includes the development of a National Blood Safety and Transfusion Policy and after considerable study and discussion an organogram developed and implemented to provide a more supportive and efficient management structure for the organisation.

The number of units of blood collected since the formation of ANBSTS increased from 35,662 units of blood collected in 2008 to 49,887 collected in 2012. This is a 39.9% increase in collections. The amount of blood collected in Afghanistan over the past decade has increased over 100%.
Standard criteria for donor medical evaluation have been established and a new blood donor screening questionnaire has been implemented in Kabul.

Staff have started to prepare reagents for use in blood typing and for quality control. This is an important development in establishing quality system and controls to assure that testing is being done properly. Testing has been introduced to identify blood mismatches that can cause transfusion reactions. Some of the reagents are being prepared by ANSBSTS personnel in a cost effective manner.Infectious disease screening is now done on all collected blood and is currently performing using rapid testing assays. ANBSTS would prefer to screen using ELISA methodology in the future.

ANBSTS has procured the more sensitive ELISA screening equipment to conduct confirmatory testing for Hepatitis B, Hepatitis C and HIV 1/2/O strains of HIV. however, test kits are rather expensive and are in short supply.ANBSTS now has the capacity to make packed red blood cells, fresh frozen plasma, platelets and cryoprecipitate.

Effort has been increased to recruit voluntary blood donors rather than family replacement donors, as voluntary donors have been shown to be "safer" blood donors. ANBSTS has also convinced the Shia community to donate blood during month of Ashura rather than flagellating themselves. This has been an important success towards increasing voluntary blood donation. The Vice President, who is from the Shia community , took the lead and also advised his thousands of followers to donate their blood rather than flagellation. Numerous political leaders have generously donated blood through ANBSTS, including the President, Vice-President, Minister of Health, Minister of Education, Minister of Environment Protection, Minister for Higher Education, Minister for Commerce and the Deputy Minister for Youth affairs, the Senate and Parliament Offices and hundreds of their members.

Perhaps also the most obvious improvements are observed in the changes to the current facility in Kabul. The public spaces throughout the building have been cleaned and updated. The collection area has been remodelled to remove the "arm through the window" setup to a more donor-friendly model.
Recently the corner stone for construction of Kabul regional blood bank and Heart regional blood bank has put into the ground.

There will be 7 new blood bank facilities build in all four regions of Afghanistan before the end of this year. Over the past two years, numerous training sessions for doctors, nurses, technicians and midwives and staff of all levels and positions have been developed. These training sessions have included not only technical training but also management, leadership and concepts of quality, so the training has been quite comprehensive.

50 numbers of ANBSTS staff were sent to different regional training programmes during last year.
The University of Minnesota and the World Health Organization (WHO) both actively support the ANBSTS training programmes.

In addition, the training of hospital physicians has strengthened the collaboration and cooperation between the hospitals and the national blood centre which also promotes the optimum use of the limited blood supply. These are all tremendous achievements that were recognised and appreciated by the Senate office of Afghanistan. They have presented the very prestigious Medal to Dr Ahmad Masoud Rahmani, on behalf of ANBSTS under the Ministry of Public Health's great leadership.

EASTERN EUROPE

Seminar on

"News in Blood Transfusion: Guidelines and Technologies"

From left to right Zhandos Burkitbaev from Kazakhstan, Eleonora Dashkevich from Belarus, Anatoly Chugriev from Ukraine and Eugene Zhiburt from Russia

On May 15-17, 2012 the Russian Pirogov National Medical and Surgical Centre held a seminar on "News in Blood Transfusion: Guidelines and Technologies". The seminar was well attended with over 100 representatives from Belarus, Kazakhstan, Russia and Ukraine.

During the seminar Sergei Madzaev reported that the Russian Association of Transfusion conducted a national survey on the protection of a donors' needle as this topic is a relatively new practice in the method of working. This new practice ensures:

- The safe removal of the needle from the vein
- The fixation of the needle inside the protector
- The prevention of injuries and risk of infection of both medical personnel as well as the donors
- Colleagues have formulated suggestions for improving the design of the secuvam.

Also one of the most experienced Russian immunohematologists Alexei Skuditsky focused his talk on the outstanding issues in their field. He formulated conditions that are necessary for the indication of the clinical significance of alloantibodies:

1. The presence of red blood cell antigens corresponding to the antibodies
2. The ideal temperature for the indication of the activity of antibodies
3. Alloantibodies' activity
4. Types of immunoglobulines
5. Secretor phenomenon

A national register of post-transfusion reactions, with access to all transfusion departments in Belarus is created according to Eleonora Dashkevich's report.

The report Zhandos Burkitbayev wrote gave a very good impression of the achievements of the blood service in Kazakhstan. Over the past few years new blood centres have been constructed in 10 out of 15 regions in the country. In 2011, Kazakhstan held pathogen-inactivated 11% of plasma and 33% of platelets. 55% of red blood cells and 82% of platelets were leukodepleted. To safeguard national blood products, Kazakhs colleagues are selecting partners on contracting plasma fractionation abroad. With a market volume of blood Kazakhstan U.S. $ 60 million, a plasma fractionation contract is expected to save at least 25% of public expenditure. An unexpected highlight of the seminar was a report of Sergey Binyukov on blood transfusion among dogs. Interest in this technology in the veterinary world is growing.

The safety of human blood is becoming increasingly relevant as mutant forms of hepatitis B appear more and more in patients due to a persons' reduced level of the immune system or medical treatments. A study about the reactivity of test systems with mutant forms of hepatitis B is key to establish the correct algorithm for hepatitis B testing. Irina Golubeva results presented a comparative study of the Paul Ehrlich Institute based in Germany.

Among 22 test systems for screening of HBsAg maximum sensitivity has been registered in Russian diagnostic kit DS-EIA-HBsAg-0,01/. An ICU transfusion for adults and children should be provided with the haemoglobin concentration of 7 g / dl or less.

It is advisable to refrain from transfusions in patients after surgery in the absence of symptoms of anaemia and reduction of haemoglobin less than 8 g / dl, even in elderly patients with cardiovascular disease or risk factors. Accordingly, the introduction of modern blood transfusion rules should lead to a reduction in the proportion of recipients of blood in the hospital.

The next workshop is on "Standards and individual approaches in clinical transfusion" in conjunction with colleagues from the UK Blood Service on December 12-14, 2012.

WESTERN EUROPE

Gloria Pravatà
Director of Italy's National Blood Center (CNS) Communication and Media Relations

An Adventure in Red; Discover the fiction which flows in your veins

"Globulandia" is an interactive, interdisciplinary exhibition that is promoted by Italy's Centro Nazionale Sangue in collaboration with Rete Citta' Sane- WHO and under the scientific supervision of Società Italiana Medicina Trasfusionale e Immunoematologia (SIMTI).

This exhibition tells the story of the blood universe where a stream of computer generated animations coupled with light and audio effects offer an all-round experience.

"An Adventure in Red" is a didactic-scientific exhibition under the auspices of the Ministry of Health especially for junior high and high school students and for the general public. The exhibition is a result of a thorough research process aimed to create an adventurous journey into the depths of one of the most extraordinary and mysterious fluid: blood - todays lifesaving substance. Cultural and scientific inputs are woven into a scientifically detailed approach to an intriguing journey into the human body.

The exhibition tells many unique stories, one of them is a story about scientist Antonie van Leeuwenhoeck, who combined his imagination and scientific methodology to break new ground in the field of blood transfusion. He was a textile trader by craft and lived and worked in Delft, The Netherlands. He was intrigued by science, especially medicine. He investigated optical sciences and combining with his imagination he was able to describe the self-named "red globules" and drew a first illustration of them. However before the Dutch trader reached the conclusion that blood was not only a red-colored fluid containing many different cells, Marcello Malpighi at the Bologna University discovered that the human blood was made up of a white-ish substance and of red corpuscles that he called "the solid part" of blood in 1667. Jan Swammerdam was the first to observe and describe red blood cells. These three pioneers discovered that the red colored fluid circulating in one's body is made from different parts.

The first exhibition was opened October 10, 2012 in Modena, Italy, which also hosted the presidency of Rete Citta' Sane of the WHO. Afterwards the exhibition continued on to the Festival della Scienza in Genoa, Italy, October 25 - November 4, 2012. In 2013 the road show will continue visiting several cities affiliated to the WHO network Rete Citta' Sane in Italy. The show is ready to continue its journey to foreign venues as well. For more information, please visit: www.centronazionalesangue.it

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