TRANSFUSION TODAY

Transfusion Today | **Number 115, June 2018**

Rare Donors

World Blood Donor Day 2018

When rare blood cannot be found

New ISBT Board of Directors

MEDLAB Congress 2018

ISBT

Contents

President Ravi Reddy **Secretary General** Roger Dodd **Executive Director** Judith Chapman **Design** drukkerij Teewes **Photography** Transfusion Today **Advertising** Florine Bos, communication@isbtweb.org

Send all correspondence to ISBT - Marnixstraat 317, 1016 TB, Amsterdam, the Netherlands.
T + 31 20 7601 760, F + 31 20 7601 761, communication@isbtweb.org.

Gold members
Abbott · BIO-RAD · DiaSorin · GRIFOLS · IMMUCOR · QUOTIENT · Roche · TERUMO BCT

Judith Chapman

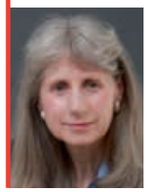
Editorial

The ISBT Rare Donor working party has been in place for 33 years, it is one of ISBT's most important working parties. It provides a home for those laboratories that handle rare donors and a place where questions can be asked and problems helped to be solved. The example written about by Mostafa Moghaddam from Iran of an international collaboration to find blood for one patient is a fine example of the co-operation that takes place. If you have a rare donor panel but are not a member of the working party I encourage you to contact Christine Lomas Francis, the Chairperson. There is much information and free resources available on the working party web page http://isbtweb.org/working-parties/rare-donors/.

June is a busy month for the ISBT office; the Toronto congress, World Blood Donor Day and then our involvement with the 9th congress of the African Society of Blood Transfusion (AfSBT) in Arusha, Tanzania. ISBT will once again host an Academy day to 'kick off' the congress which will be focused on haemovigilance. We will also be taking the Young Investigators breakfast model to the congress, co-hosting it with AfSBT. The AfSBT congress is one of my favourites.

There is a short information article on the new European privacy regulations which came into force on May 25, 2018. ISBT has sent out information to all members on its privacy policy and to ask you to give permission for us to be able to contact you. Please respond.

Finally a warm welcome to our new Board members who are announced in this issue of Transfusion Today.



Christine Lomas-Francis
Technical Director, Immunohematology and Genomics
New York Blood Center

ISBT Working Party on Rare Donors

Global cooperation is essential to transfuse patients who need rare blood when a product is not available locally. One of the earliest initiatives of international cooperation to provide rare blood was the World Health Organization (WHO) International Rare Donor Panel (IRDP) that was established following a recommendation made by the ISBT in 1964. Management and maintenance of the IRDP was assigned to the International Blood Group Reference Laboratory (IBGRL) in the UK, a role it still holds. In 1984, the formation of an ISBT Working Party on Rare Donors (WPRD) was proposed and the inaugural meeting was held in 1985.

The WPRD consists of experts from many countries whose main focus is to ensure the availability of rare red cell units for transfusion. The definition of what constitutes a rare blood type differs among countries; for blood donors lacking a high-prevalence antigen mostly it is a prevalence of 1 in 1000 (or less). Donors who are negative for a combination of alloantigens with a phenotype prevalence from 1 in 100 to 1 in 1000 are also considered rare. The prevalence of some blood types greatly differs and depends on the ethnicity of a population so that a blood type rare in one country may not be rare in another. To fulfill the rare blood requirements of local populations, countries with the resources to do so have established national or regional testing centres to screen for rare donors and compile donor registries; these have expanded into a network of national and international donor registries.

International membership of the WPRD continues to grow: currently there are 30 members from 23 countries. Effort is made to include members from countries with newly established or developing rare donor programmes so that these countries have the opportunity to learn from the experience of others and to be supported in their endeavours. Members participate not as individuals but as the representatives of the rare donor activities of their country or region and those with established rare donor programmes are asked to include their rare donors in the IRDP. This strengthens and supports the functioning of the IRDP that is critical to meet the needs of patients all over the world. The WPRD provides a forum, through regular meetings or by e-mail communication, for the exchange of information and ideas on the challenges (local/international) related to finding and providing rare blood.

The WPRD aims to be a resource for information to members of the ISBT and the international transfusion medicine community on issues related to rare blood and to develop and provide educational materials to blood providers, donors and patients. Material currently available to all, through open access on the WPRD webpage, includes links to scientific publications and selected PowerPoint presentations, an International Rare Donor Identification Card and a Rare Donor Programme Brochure. Also available is a form “Outcome of Incompatible Transfusion” developed by the WPRD for those times when rare blood cannot be found and the only option may be to transfuse incompatible blood. For some antibodies to high-prevalence antigens, because of their rarity, little is known about their clinical significance and the form is a means to improve data collection on the clinical significance of transfusion of incompatible blood units. Having a patient who requires rare blood is a rare event in itself. To those who work in this field of rare donors the requesting and acquisition is a known process; to the facility who has never needed rare blood, the process can be daunting. A flow chart is available to ensure there is no knowledge gap and can be found on the WPRD webpage.

The activity of the WPRD is for the common good of all patients around the world and recognizes no political or geographical boundaries; the same cannot be said for shipping and customs requirements. These differ between nations and often the toughest challenge to providing blood in a timely manner is navigating these requirements; currently blood shipments do not receive the same priority afforded to transportation of organs.

Christof Jungbauer
Medical Director,
Austrian Red Cross

Blood group distribution: the rarest of the rare

The blood supply for patients with antibodies to red cell antigens is a major issue for all blood establishments around the world. Especially the provision of “rare blood” where the compatible red cell phenotype according to different definitions can be found only 1 in 1000 individuals or less, understandably are really challenging. Nevertheless phenotypes that can be found in 1 in 100 to 1 in 1000 in practice are also considered to be rare.[1,2]

Lack of a high-frequency-antigen
Usually the term “rare blood” is used for blood which is lacking a high prevalence (public) antigen. About one hundred of roughly 350 known red cell antigens are high prevalence antigens. Some of these rare blood types are unequally distributed throughout different ethnic populations: RhD- or Fy(a-) may be found only in 0,3 percent people in China or (South-) East-Asia while provision would not cause any problems in other populations. Fy(a- b-) occurs in one third, U- or Js(b-) in about 1 percent of people of African origin but are extremely rare in other regions. In contrast, the majority of rare blood types are rather equally distributed over different ethnicities, e.g., Yt(a-), Vel- or Kp(b-), will be rare to find in all populations (1:500, 1:4.000, 1:10.000).

Certainly some antibody specificities to high prevalence antigens are more frequent in particular populations, e.g., Yt(a-), Lu(b-), k-, Vel- and Kp(b-) blood units cover the majority of cases of rare blood supply in Caucasians.[3] Thereby the future need for these blood types is predictable. Nevertheless unusual antibody specificities and extreme rarity of suitable blood types may reveal suddenly and unprepared. The provision of the rarest of the rare, like Rhnull, K0, McLeod, p or Ge:-2,-3, mostly requires international collaboration4.

Combination of antibody specificities to several common antigens
Another cause for rare phenotypes are multiple-common-antigen-negative blood groups for the supply of patients with combinations of antibodies to common polymorphic antigens. A combination of three to four antibody specificities may result in the need for a per definition rare phenotype, e.g., e-Fy(a-) Jk(a-) has a prevalence of only 0,15 percent. Needless to say, that issuing rare blood units always comes subsequent to the serological identification of the antibody specificity (or specificities), which might be challenging as well.

National preparedness and international collaboration
Naturally blood establishments are constantly working to be prepared to facilitate the supply of red cell units for patients with red cell antibodies. A common approach to meet the needs for provision of blood for carriers of antibodies to common antigens as well as for identifying new donors with rare blood types are prospective extended typing programs. For instance, the Austrian Red Cross Blood Service has typed 20.000 of the donors with the highest donation frequency for about 40 antigens partly by serology or genetically. These data are the basis for most provisions of red cell units for patients with alloantibodies at our service. Besides, some 200 donors with rare types, e.g., k-, Co(a-), Yt(a-), Lu(b-), Kp(b-) were found and many of the consecutive donations could be added to our kryo-program for rare blood.[5]

There are a number of different regional or national programs or attempts for the provision of rare blood, including extended typing programs, donor registries and storages for frozen rare units.[1,2] If rare blood can’t be provided regionally or nationally, establishments with suitable units or donors can be localized by the International Donor Panel (IRDP) of the WHO which is located at the International Blood Group Reference Laboratory at NHS Blood and Transplant in Bristol, UK.

Within the ISBT the Working Party on Rare Donors was established to develop, promote and safeguard the special blood supply for patients who require rare blood.

References
1. Reesink H.W., et al. Vox Sang. 2008;95:236-53.
2. Nance S., et al. Vox Sang. 2016;110:209-18.
3. Seltsam A., et al. Transfusion. 2003;43:1563-6.
4. Peyrard T., et al. Transfus Clin Biol 2008;15:109-19.
5. Jungbauer C., et al. Vox Sang. 2012;102:234-42.

Setting up a rare donor program

Mostafa Moghaddam
Director of Iranian National Rare Donor Program

Patient's life might be in danger, when he/she needs a rare blood type but not present or identified routinely for transfusion. Immediate assistance is needed from the facility capable of supplying the product.1 Rare blood refers to a blood group not commonly found in a geographic area.2

Most well developed blood services eventually encounter the need for blood donations of rare blood types. In an intensive emergency situations, when a compatible blood is not available, access to a specific national rare donor of the correct type, should be planned in advance through development of a well-established system to ensure securing the supply of rare blood unit in a collaborative approach.

Great interests from some ISBT member countries have emerged to establish a national rare donor program. This short article will briefly outline important action steps needed for setting up a successful Rare Donor Program.

1- Situation analysis and priority setting
Present and past facts like antigen typing and donor data should be collected and analyzed.

A small team of motivated and dedicated individuals from blood transfusion centers should be identified. Stages of implementation plan with realistic objectives for timing of various actions need to be set and action plan need to be shared and explained to the participants. It might take several years to achieve a system that meets national and international recognition. Of course evolution of system might depend on resources available. Data need to be gathered and shared with participants in the project.2

2- Budgeting and administrative support
Higher management of an institution hoping to set up a successful rare donor program needs to be justified in order to be willing for allocation of sufficient budget for initial implementation requirements and continuous sustainability and improvement of the rare donor services.

3- Excellent Immunohematology Reference Laboratory (IRL)
Any scientific, technical and human errors in reporting test results for a rare donor blood type or any incorrect investigation of a patient with difficult blood samples would be a matter of high concern. An excellent IRL can provide needed scientific support for the program. Continuous education, training and improving knowledge of should be emphasized. Close contact and collaboration with internationally recognized Immunohematology Reference Laboratories for technical advice and testing confirmation need to be promoted.

4- Accessibility to rare high quality reagents and consumables, equipment and special resources
Availability of internationally certified resources like rare reagents, consumables and automated machinery for mass investigation and serological/ molecular confirmation of rare blood type are necessary. Special cryogenic processors may be needed for freezing and long storage of rare RBC units.

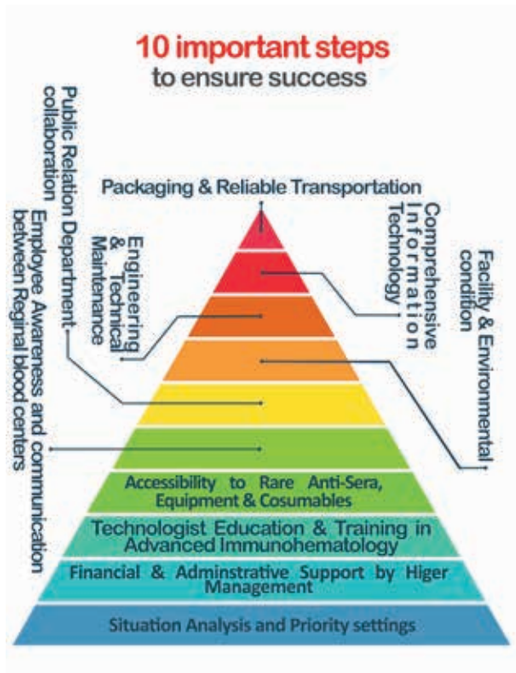
5- Inter- departmental communication and employee awareness
Effective communication and cooperation between team members of rare donor program and other stakeholders (i.e. physicians, nurses, educators and public relation experts) should be emphasized. Rare donor program awareness need to be promoted among blood services employees on areas like donor registration, donor interviewer, component preparation, storage, packaging and transportation.

6- Promotion of excellent public relation exposure
A successful rare donor program will benefit from a selection of talented, skilled and dedicated, people oriented employees. A good will exposure with continuous pleasant approach to answering questions and concerns from patients, donors and general public directly or through the use of various media resources will guarantee the success of the program.

7- Physical facilities and good environmental conditions
Availability of sufficient storage area with 24 hour temperature controlled system, emergency alert system for any electrical failure and backup system and controlled access area are essential.

8- Engineering and equipment's maintenance support
Continuous maintenance of machinery and equipment should be performed by professional and skilled technicians.

9- Comprehensive Information Technology
A comprehensive software for management of rare donor records and phenotype / genotype database need to be developed.



10- Packaging and reliable national and international transportation
Lack of experienced courier companies for delivery of rare blood to the requesting medical center could be a challenge in some areas. This could be more complicated in large countries with remote areas and long distances. This challenge could delay availability of blood to the patient in need.

References:

1- Sandy Nance, International rare donor panels: a review, ISBT Science Series, 2009.
2- Sandy Nance et al, International rare blood donor center, Vox Sanguine, 2015.

France Pirenne
Medical and Scientific Director of the Etablissement Français du Sang, Ile de France

When rare blood cannot be found

Rare blood is characterized by an absence of expression for a high-incidence antigen or for all the antigens in a specific blood group system or a rare combination of common antigens. In all cases, the rare blood type is associated with a risk of carrier immunization following exposure to red blood cells (RBCs) of a common blood type. Alloimmunization may lead to transfusion deadlock, post-transfusion haemolysis, or haemolytic diseases of the newborn if the person concerned is a pregnant woman. Patients with multiple antibodies can be also considered as rare blood type individuals, due to the difficulty obtaining matched blood.

Despite active rare donor programs in many countries, and international support and collaborative efforts through the ISBT Working Party on Rare Donors, in many circumstances matched blood cannot be found for safe transfusion. The available options depend on the clinical setting in which transfusion is required, the immunization status of the patient, and the clinical significance of the associated antibody. The most difficult situation to resolve is that of an absolute need for transfusion in an emergency situation in an allo-immunized patient. Adverse reactions to incompatible red blood cells are not predictable. They depend on the characteristics of the antibody, the comorbid conditions presented by the patient, and the disease. In sickle cell disease, for example, incompatible transfusion can be life-threatening. Case reports are required, to gather data for the current outcomes of incompatible transfusion. The ISBT Working Party on Rare Donors has developed a form to capture case-specific information. The only available option is prophylaxis with intravenous immunoglobulin and/or steroids, which can be administered to attenuate or prevent transfusion reactions. Conversely, the most “comfortable” situation is that in which the patient undergoes a programmed surgical procedure. Lessons from patient blood management programs should be applied in such conditions, so as to achieve the objective of zero transfusion. However, in “healthy” individuals, the autologous collection of blood can be programmed, with the blood then frozen until the procedure. Same types of rare blood can be sought within the patient’s family. Pregnancy is another potentially tricky situation. Rare blood may be required for the mother during delivery but also for the foetus or neonate, which may present haemolytic disease. Again, the option of choice in this situation is the collection of autologous blood in advance, during pregnancy. Such blood collection is not generally problematic at the start of pregnancy, but greater caution is required towards the end of pregnancy and the final decision depends on Hb concentration in the pregnant woman and is taken collectively by the medical staff in charge of the patient.

Sickle-cell disease patients present a particular challenge, as rare blood types for which supply is highly restricted, are particularly frequent in this group. Rare RH bloods are highly problematic, as they require precise genotyping. It is essential for blood centres to continue to invest in the establishment of cohorts of donors with full RH characterization, to ensure the safety of transfusion in these patients. However, more immediate solutions are also urgently required to deal with the lack of compatible units. Indeed, if units are unavailable for long-term transfusion management, alternative treatments, such as hydroxyurea or hematopoietic stem-cell transplantation, must be considered. For immediate transfusion, prophylaxis with immunosuppressive treatment can also be considered, although such treatment may have specific side effects in this population of patients.

Ensuring a sufficient supply of rare blood is a permanent challenge, and the efforts of the ISBT Working Party on Rare Donors should decrease the likelihood of deadlock situations. The mass testing of donors, by phenotyping or genotyping, should also improve rare blood availability. However, in emergency situations, the pros and cons of transfusion must be re-evaluated, based on the potential consequences of incompatible transfusion. This field will really benefit from the publication of reports helping professionals to take the right decision.

Tanya Powley
National Red Cell Reference Manager, Australian Red Cross Blood Service

Appreciation and education of rare donors worldwide

What is a rare donor? The definition of a rare blood group is someone who is negative for a high prevalence antigen where the frequency of this antigen negative phenotype is less than 1 in 1000. People with a combination of antigen negative phenotypes where that combination has a prevalence of less than 1 in 1000 may also be considered rare.

Why is it important to educate and appreciate our rare donors? Every day patients receive blood for transfusion without much fuss, but for a small group of patients finding compatible blood can be a challenge.

This small group of patients often have an antibody to a single blood group antigen (or multiple antibodies) where the required antigen negative phenotypes are not readily found in donors within the region. It is these patients, where we have difficulty finding antigen negative blood for transfusion. Where we are lucky enough to have donors with the same blood group phenotype within our donor panel, we rely heavily on these dedicated and reliable donors to come to the aid of these patients as well as provide donations for our frozen red cell inventory.

Rare donors are identified either through targeted recruitment and screening programs, patient’s identified through pre-transfusion testing that become donors when they return to good health or family studies. To help support the needs of patients with rare blood groups and antibodies we often undertake family studies in the hope of identifying and recruiting family members that may have inherited the same blood group phenotype.

Education of these patient and donor groups is critical to the success of rare donor programs and the on-going ability to support the future transfusion needs of these patients and donors. Many blood transfusion services have systems in place to notify patients and donors when it is identified that they have a rare blood group. They are advised that whilst this does not have a direct impact on their health and wellbeing, it is important and may be relevant if they have a need for transfusion in the future or in pregnancy. Providing information at this stage on the limited availability of blood, balanced with the knowledge that we have an international rare donor register and network of blood services that work together to ensure we are able to provide appropriate blood for transfusion, helps to recruit and retain these blood donors.

In our experience, providing information about the inheritance of blood groups and the links to ethnicity help to encourage friends and family of patients and donors with rare blood groups to become blood donors. They donate with the hope that they may have the right blood type for the transfusion needs of their friend or family member. If they are the right type this knowledge helps to ensure continued donations and further expansion of the friends and family network, increasing the likelihood of identifying new donors.

Recently we identified a donor with a rare blood group through a family study performed overseas 20 years earlier. The donor had been donating for the last decade and we were unaware of the rare blood group. During a routine unrelated conversation with a Blood Service Medical Officer, the donor provided this vital piece of information. In this case our systems and the information provided to the donor failed and the Blood Service missed 15 whole blood donations that may otherwise have been frozen for future transfusion and unwittingly recruited this donor to apheresis plasma missing out on further valuable whole blood donations.

Better education of our rare donors and the use of cards to identify donors or patients with rare blood groups may help with self-identification, but education does not stop with donors. Raising awareness and educating staff that have direct contact with our donors is a vital piece in the puzzle. Understanding the significance of rare blood groups and knowing how to manage donors that self-identify as a rare donor during the donation process or at the very least refer it to right people for action can make all the difference.

Nicole Thornton
Head of Red Cell Reference
International Blood Group Reference
Laboratory (IBGRL), NHS Blood and
Transplant, Bristol, UK

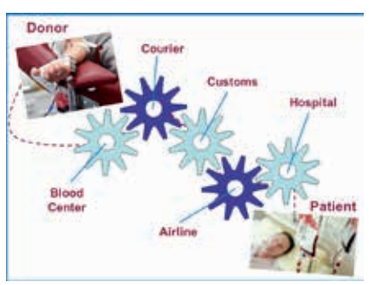
Case studies: Transfusion support for patients with antibodies to high prevalence antigens

A red blood cell antigen is classified as a high prevalence (HP) antigen if the antigen has an incidence of >90% in most populations, however, the majority of HP antigens have an incidence of >99%. Lacking a HP antigen represents a rare phenotype, some of which are found almost exclusively in specific populations. Antibodies to HP antigens are difficult for routine laboratories to identify and usually require investigation in a reference laboratory. These antibodies vary in their clinical significance, therefore not all patients with an antibody to a HP antigen will need antigen negative blood for transfusion. However, when rare blood is required the International Rare Donor Panel (IRDP) is available for consultation if blood is not readily available locally. The IRDP, administered by IBGRL, is an international collaborative effort, enabling exchange of rare blood between countries to ensure this blood is available for those patients who need it. Though the first hurdle is establishing if rare blood is available, once found, the logistics involved in getting the blood to the patient presents multiple challenges. The following two case studies indicate some of the challenges faced when providing transfusion support for patients with antibodies to HP antigens.

Case 1
A 70 year old patient in Nigeria required surgery to remove a tumor in her heart. Pre-surgery investigations revealed that the patient had the rare Lu(b−) phenotype and anti-Lub was present in her plasma. The surgery could not be carried out in Nigeria but a hospital in nearby Cameroon was able to do the surgery if blood could be supplied. Four units were required for the surgery to go ahead. Frozen units were available from South Africa but the hospital had no means of thawing frozen units therefore they would need to be thawed prior to transport. The thawed units would have only a short shelf life (48 hours) and due to the remote location of the hospital it was unlikely that the units would arrive and clear customs within the 48 hour window. An IRDP search was carried out and approximately 550 donors were identified, 400 of those were living in England. Six donors were called and asked to donate for this patient and all had donated within just days of receiving the call. The fresh units were shipped from England to Cameroon and the surgery was able to go ahead successfully.

Case 2
A pregnant patient in England was found to have the very rare Hr− phenotype. Extensive testing revealed a complex mixture of antibodies present in her plasma (anti-D,-C,-Hr,-hrS). The only suitable donors available were those with the exceedingly rare Rhnull phenotype. Two units were required for the patient's planned caesarean section (CS). Colleagues in Japan and France were able to provide one unit each. The unit from Japan was shipped frozen, whereas the unit from France was thawed prior to shipping. Communication was important for coordinating the arrival of the units in time for the CS and within the shelf life of the thawed unit. The frozen unit was kept on standby but was not required. This was very useful because the patient presented pregnant again the following year. This time only one unit needed to be imported to provide the two units required. Once again colleagues from France answered the call for help by providing another thawed unit. This unit was transfused without incident. The frozen unit was not required and remains stored for clinical use.

Acknowledgements
Thank you to all the IRDP contributors and the many individuals involved in the logistics of international rare blood provision.
We are especially grateful to the rare donors around the world.



Mostafa Moghaddam
Director of Iranian National Rare
Donor Program

An international collaboration to save the life of a young patient with a Golden blood type

A 23-year-old female patient with a history of anaemia of unknown aetiology was transfused with two and half units of RBCs as her haemoglobin had dropped to 6 g/dL. Transfusion, instead of raising it, had the reverse effect: her haemoglobin dropped to 4.2 g/dL. As the hospital blood bank could not find compatible blood to reduce transfusion complications, the patient's attending haematologist in the Intensive Care Unit (ICU) decided to transfuse her with a small aliquot (100mL) of incompatible RBCs with longer infusion intervals. Her condition deteriorated and her haemoglobin dropped to 2.8 g/dL in less than 2 weeks. The central Immunohematology Reference Laboratory (IRL) of Iranian Blood Transfusion Organization (IBTO) was contacted for help to find suitable RBC units.
The IRL identified that the patient had one of the rarest blood types in the world called " Rhnull". In this blood type, all antigens of the RH blood group system are missing. The Rhnull blood type was first described in 1961, in an Aboriginal Australian woman. By 2010, only 43 Rhnull peoplel had been reported worldwide; because of its rarity it has been termed the "Golden Blood Type".

The Iranian National Rare Donor Program databank contains information for approximately 100 individuals with very rare blood types but no Rhnull donors. In the hope of finding a donor, 54 of the patient's first and second-degree relatives were phenotyped for Rh antigens; sadly, none of the relatives were Rhnull. Immediately, an e-mail was sent by the IBTO to the members of the ISBT Working Party (WP) on Rare Donors and to the International Rare Donor Panel (IRDP) (located at, and managed by, the International Blood Group Reference Laboratory in Bristol, UK) requesting help to locate suitable Rhnull blood donors and if possible to collect 2 precious RBC units. This turned out to be a challenging and difficult task.

From 23 ISBT WP member countries, 19 responded to the request. As shown in table 1, 6 out of 21 blood centres worldwide either had information on group O Rhnull donors or had stored blood in their frozen inventory.

Some members provided medical consultation on possible strategies (IVIG, EPO and corticosteroids) to help to raise the patient's haemoglobin level or to stimulate erythropoiesis, also the use of blood substitutes was recommended. The medical team tried many approaches. For a short time her haemoglobin increased to 4.3 g/dL but her doctors emphasized that she needed a blood transfusion.

Figure 1 shows the locations of countries that responded and the availability of donors and RBC units. The Brazilian donor had donated blood two weeks earlier and could not donate again. Age prevented the donor in Australia from donating; there was also concern that he would need the only two frozen stored units in the future. Another challenge was the difficult logistics of air transportation and temperature maintenance of the shipment on the journey to the IRL in Tehran, considering the long distance between Australia and Iran and that there was no direct flight between the two countries.

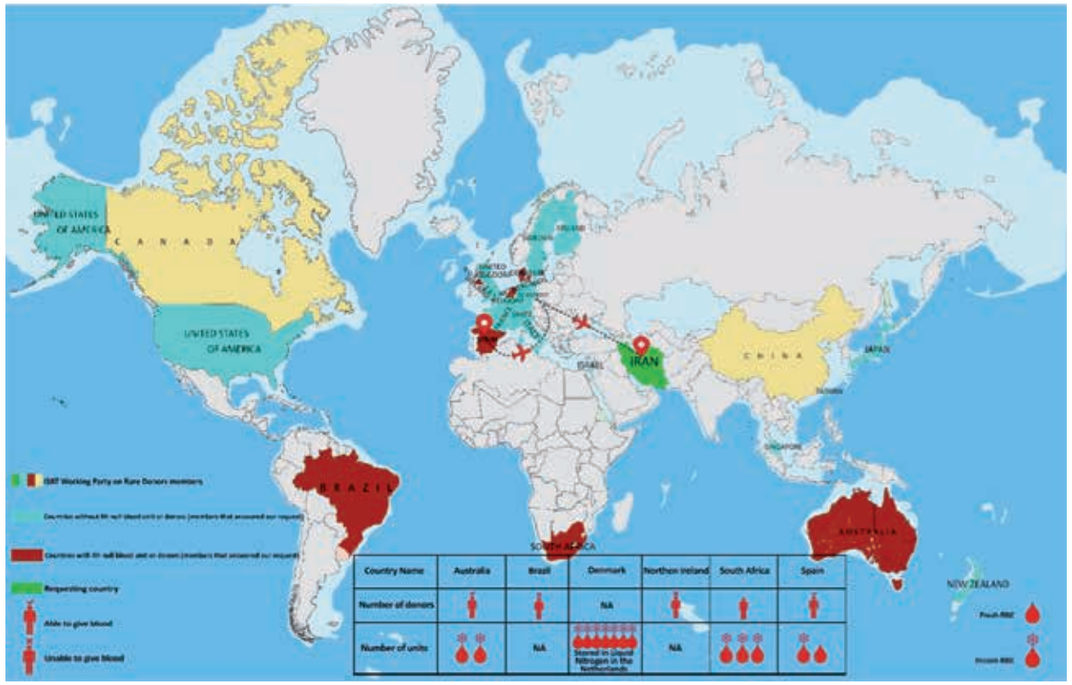
A search performed through the IRDP revealed two O Rhnull donors: one in South Africa and one in Northern Ireland. The Irish donor was unable to donate because of ill health and old age. South African National Blood Service rare donor program had 3 frozen units from a 67 years old donor that they offered. But shipping units from South Africa presented the same logistic challenges that existed with Australia. Due to time constraints a source closer geographically became a priority with regard to the locations offering help.

Continued on next page...

Country name	Number of RBC units	Number of Donors
Spain	1 Frozen/1 Fresh	One (donated one unit upon our request)
Denmark	7 Frozen (Stored in Liquid Nitrogen in the Netherlands)	Donor unreachable
Australia	2 Frozen	One (unable to donate, old age)
South Africa	3 Frozen	One (67 years old willing to donate)
UK (Northern Ireland)	NA*	One (unable to donate, old age, currently ill)
Brazil	NA*	One (unable to donate, recently donated)
Countries that responded but without Rhnull donors or stored units:		
Belgium, Finland, France, Germany (German Red Cross Baden-Baden and Ulm centers), Israel, Italy, Japan, New Zealand, Singapore, Sweden, Switzerland, Taiwan, USA		

*NA: Not Available

Figure -1 Geographic distribution of countries and availability of donors and RBC units responding to the request



The WP member from Denmark indicated that there were 7 frozen O Rhnull units stored in Liquid Nitrogen (-200 C) in Amsterdam, The Netherlands. These would need to be thawed and shipped. As thawed units expire 24 hours after thawing, it was suggested to re-freeze the thawed units by a high glycerol concentration method and transported frozen. Once received by the IRL in Tehran, the units could be deglycerolized by ACP215 Automated Cell Processor and transfused to the patient over longer intervals as needed to prevent volume overload. The drawback of this option was loss of RBCs due to the multiple thawing and freezing and possible breakage of frozen RBC bags stored for many years in Liquid Nitrogen.

It was decided to try to use the Spanish units because of the transportation route. Dr. Eduardo Muñiz Diaz, the Spanish member of the rare donor WP, was e-mailed with a request for help. He contacted Dr. Miguel A. Perez Vaquero and Dr. J. Monge Ruiz, the head of the Blood Center in the Basque country, who took responsibility for preparing two O, Rhnull RBC units for delivery to Tehran. One frozen unit was already in stock. The only rare donor with O Rhnull blood was contacted for donation. Although he lived about 100 kilometres away from Basque blood center, he kindly travelled the distance and donated one unit voluntarily and altruistically. The Iranian Embassy in Madrid volunteered to help to arrange the transport of the RBC units from Basque blood center to Madrid. Several commercial international airlines were contacted but, as blood is considered a biological hazard, direct delivery was declined. An international courier company located in Madrid specializing in shipping biological products agreed to ship the blood. But, as the company had closed its office in Tehran 3 years ago due to the sanctions, it was decided to deliver the package to a city where Iran Air flies. Shortest time and distances were considered with Rome, Dubai and Hamburg being the best options. After 48 hours, the courier delivered the package to Hamburg, Germany and a staff from the Iranian consulate was ready to accept the blood and transfer it to the Iran Air office for the next flight from Hamburg to Tehran few hours later.

Finally, the precious rare blood arrived at Tehran airport at 9:10 pm on December 8, 2016. Immediately, the package cleared customs and was quickly transported to the central IRL where staff was waiting for the RBC units to perform confirmation and compatibility testing. The rare units were stored in the IRL blood bank refrigerator until next morning for a 6:10 am flight to the city of Boushehr and there to be hand-delivered to the medical team for transfusion to the young patient waiting in ICU at Boushehr university medical center.

Very early morning on December 9 at 5 am an unexpected telephone call was received by the patient's doctor informing that she had suffered a cardiac arrest and died at midnight despite all efforts made to resuscitate her.

Even though the outcome of this event was a sad one, it demonstrated the strong human will of many people all over the world, to save a young patient's life. It was a voluntary altruistic effort, regardless of socio-political borders and boundaries and bureaucratic administrative complexity.

One can describe this event as a golden point in international collaboration, altruistically fulfilling a patient's need for a rare blood product.

Acknowledgements
The author acknowledges Sandy Nance and Christine Lomas-Francis for their helpful comments on the contents of the manuscript.

Dear ISBT member,

This year we celebrate the 200th anniversary of the first human to human blood transfusion and we will take the opportunity at the ISBT Congress in Toronto to celebrate this milestone, reflect on the past 200 years and look forward to the future. Over these two centuries exponential progress has been made in increasing access to blood products globally and ensuring quality assured and safe blood products. This is particularly important for those patients with inherited diseases such as Thalassaemia that are dependent on blood products on a regular basis throughout their lives. An unfortunate adverse effect is the development of multiple red cell antibodies which makes finding compatible blood very difficult for these patients. There are also a small group of patients that are negative for high frequency antigens such as Lan, hrS or Rh:34. They may develop antibodies to these high frequency antigens following transfusion and finding the rare antigen negative units for these patients is a major challenge. This is even more so for blood centres that do not have a Rare Donor programme.

The focus of this edition of Transfusion Today is on “Rare Donors”. Many years ago I worked in the Immunohaematology Reference Laboratory in South Africa and can relate first-hand to the challenges of performing extended serological and other tests and thawing many rare red cells in order to try and solve very difficult cases. Over the past two decades, significant advancement has been made with genotyping and this has proved to be a game changer in resolving difficult cases as well as genotyping of blood donors to identify those that are negative for high frequency antigens and thus increase the pool of rare donors globally. The ISBT Working Party on Rare Donors has done an excellent job in this area and a key focus going into the future will be to enhance and maintain global databases so that blood centres can add their rare donors and can also access the database when rare blood is required. The need for a well maintained and enlarged global database of rare donors is even more important now as we see increased migration of people.

ISBT is very cognizant of the need for access to education in many regions of the World and continues to increase its support for regional meetings through ISBT Academy Day events which includes some financial support. ISBT provided support to the 3rd Eurasian Congress of Transfusiology held in early April in Astana, Kazakhstan and I was privileged to attend this meeting and do a presentation. I was most impressed with the quality of the presentations and discussions at the meeting as well as the high level of development of the blood service in Astana. Despite language challenges, as a community of transfusion medicine professionals, we do need to continue engaging with and providing support to developing countries so that in this 200th year of blood transfusion we can ensure global access to sufficient, safe, quality blood products.

Many blood services face severe constraints due to limited resources especially as external funding has reduced over the past few years. ISBT is partnering with Global Blood Fund this year to see how we can assist in providing some support to these blood services. This project was launched during the ISBT Congress in Toronto in early June and your support of this initiative was greatly appreciated.

This is my final column for Transfusion Today as Martin Olsson took over as President at the General Assembly in Toronto. It has been a great two years and I would like to sincerely thank my Board members, ISBT staff and my colleagues for their support during my tenure as President of ISBT.

Ravi Reddy

Welcome to our new members

(March 2018 - May 2018)

Africa
- **KENYA:** Jacob Injere Afude
- **MOROCCO:** Nadia Nourichafi
- **SOUTH AFRICA:** Debbie McLinden

Americas
- **ARGENTINA:** Soledad Mainz, Romina Alba, Daniel Minoldi
- **BRAZIL:** Edna Harumi Goto, Roberta Maria Fachini, Jose Francisco C Marques Junior, Gabriela E S Felix, Debora Toshie Hamasaki
- **CANADA:** Michelle Wong, Colleen Chan, Neru Sahni,Jason Kwan, Audrey Laforce-Lavoie, Marc Cloutier, Tina Jacobucci, Melissa Boileau, Mary-Anne Moreau, Selena Cen, Daniel Marko, Sandy Johnston, Oksana Prokopchuk-Gauk, Lakshmi Rajappannair, Tracey Turner, Dilini Kumaran, Elizabeth Knight, Jacob Pendergrast, Jeannie Callum, Emma Bessette, Monique Chiam, Carla Osiowy, France Bernier, Anne Marie Long, Isra Levy
- **CHILE:** Jose Caamano
- **COLOMBIA:** Maria Isabel Bermudez Forero
- **ECUADOR:** Josa Ivan Acosta
- **MEXICO:** Karla Yasmin Guadalupe Ceballos Castillo, Josa Alberto Hernaindez Martanez
- **PERU:** Luis Alberto Sainchez Ramirez
- **TRINIDAD AND TOBAGO:** Edwin Mackoon
- **USA:** Kalamaushuka Vikna Theyagarajan, Leon Su, Jessica Drouilard, Melissa Von Goetz, Stacy Conway, Siddhartha Sen, Rachel Jug, Nidhi Patel, Hira Shaikh, Jennifer Woyat, Josephine Siregar, Jennifer Garrett, Angelo DÁlessandro, Dan Rumsey, Julien Dassau, Courtney Hopkins, Marty Moore, Tricia Sanders-Mcgann, Lindsey Wlosinski, Sarati Joshi, Suneeti Sapatneker, Nurjehan Quraishy, Marta Llende, Subramanian Yegneswaran, Laura Tonnetti, Elizabeth Crowe, Marc Stern, James Kelley, John Pitman, Jansen Seheult

Eastern Mediterranean
- **AFGHANISTAN:** Nadimah Rahmani
- **IRAN:** Nader Safirian
- **PAKISTAN:** Syed Sajid Hussain, Shoaib Ahmed, Amar Riaz, Mohammad Akhtar, Tasmia Abeer Billoo, Mustafa Minhas, Masood Ahmmed, Shijaat Hussain
- **SAUDI ARABIA:** Samy Marouf Attallah, Adel Abo Mansour, Omer Alsaweed

Europe
- **ALBANIA:** Viola Shano, Edlira Borici
- **AUSTRIA:** Helmut Hanske, Eva Maria Matzhold
- **BELGIUM:** Aicha Bah, Philip Meuleman, Britt Van Aelst, Annemie Vanbrabant
- **DENMARK:** Randa Zo El-Gina, Pia Funch Poulsen, Susan Oestergaard, Nazia Lone Akhtar, Helle Sarnum, Merete Pedersen
- **ESTONIA:** Egeli Keldo, Rahel Reimal, Ruth Pulk
- **FRANCE:** Julien Herlem, Lucile Malard, Emilie Frisan, Gaelle Le Goff, Laziza Amnial, Laurent Soufflet, Pierre Cappy, Bonomar Djamel
- **GEORGIA:** Levan Avalishvilli
- **GERMANY:** Prabitha Paranikulangara, Susanne Mueller, Irina Guselnikova, Romy Kronstein-Wiedemann, Juergen Burkhart
- **GREECE:** Katherine Sfiridaki
- **POLAND:** Beata Wojciechowska, Wiktor Fedczyszyn
- **ITALY:** Marcello De Onofrio
- **LITHUANIA:** Auguste Jelinskaite
- **NETHERLANDS:** Barbera Veldhuisen, Iwan Ebbing, Margreet Zoodsma, Dae-Hyu Ko, Syeldy Langi Sasongko
- **NORWAY:** Marte Hvalryg, Sadaf Nabi Bhatti, Ruby Lill Skogheim, Kathrine Margrethe Neuman Johnsen, Maria Therese Ahlen, Lise Sofie H Nissen-Meyer
- **SERBIA:** Marija Perisic Bozic, Jasmina Rangelov Kulezic, Marija Vranes
- **SLOVENIA:** Katja Petrusa
- **SPAIN:** Maria del Monte Trujillo Perez
- **SWEDEN:** Cecilia Lepp, Viveka Stiller
- **SWITZERLAND:** Michel Prudent, Gabriella Rizzi, Frank Pieksma
- **TURKEY:** Mustafa Ulukanligil
- **UKRAINE:** Maryana Shkuropat
- **UNITED KINGDOM:** Sharon Baker, Heater Dawson, Denise Mckeown, Fateha Chowdhury, Amelia Fisher, Lawrance Nyoni, Faye McCleery, Lucy Studholme

South East Asia
- **BANGLADESH:** Mijanur Rahman, Kashfia Islam, Syeda Masooma Rahman, Mohammed Mejbahuddin Mia
- **CAMBODIA:** Bora Pheng
- **INDIA:** Sujitha Kannan, Vandutta Bakhtu, Amardeep Pathak, Joshua Jeyakumar, Maya PArihar Malhotra, Himanshu Sharma, Amrishkumar Pandya, Priyadarsini Jayachandran Mudaliar, Jitenra Vachnani, Archana Solanki, Dr. C Meril, Anupam Chhabra, Rati Ram Sharma, Prakashbhai Zaveri
- **INDONESIA:** Sallimar Salim Mustafa, Ni Kadek Mulyantari, Rini Astuti, Hasna Fadlilatul Bidayah
- **MONGOLIA:** Erdenebayar Namjil
- **MYANMAR:** Thein Tin Maung
- **SRI LANKA:** Trileeshiya Induni Withanawasam

Western Pacific
- **AUSTRALIA:** Dung Thuy Thuy, Ranjan Joshi, Leanna Pickles, Susan Kay, Grant Bush, Natalie Caldwell, Charles Risson, Nina Van Dyke
- **JAPAN:** Genki Yonamine, Mitsuo Okubo, Aiko Sakamoto
- **MALAYSIA:** Halimatun Radziah Binti Othman
- **NEW ZEALAND:** Amanda Suddes
- **PHILIPPINES:** Valerie Anne Tesoro, Frank Gray Sorromero, Liezel Sosito
- **SOUTH KOREA:** Saerom Choi, Chieeun Song, Myung Geun Shin, Eunyoung Oh, Yihyun Kim, Hyangsuk Kim, Soo Jung Cha, Jeong Su Park, A-Jin Lee, Sae Am Song, JungWon **Kang**
- **SINGAPORE:** Sim Leng Tien, Melanie Si Riu Lim, Desmond Cher, Ritchelle Tabao, Ramir Alcantara
- **TAIWAN:** Yuan-Ming Lee, Ching-Mei Yu, Chi-Te Lu, Lei Li
- **THAILAND:** Nampeung Anukul
- **VIETNAM:** Viet Nguyen, Son Nguyen, Oanh Le, Lien Nguyen, Dung Truong

Membership Renewal: Time is almost up!

Thank you for your ISBT membership during the year 2017/18. Your membership helps us to achieve our mission of sharing knowledge to enhance transfusion practice through providing opportunities for advancing knowledge and education. Renewing your membership means that you will continue to receive the benefits of an ISBT member, which includes:

- Access to ISBT Education (including congress webcasts and presentations)
- Receipt and access to Transfusion Today & Vox Sanguinis (paper + online)
- Access to the ISBT Forum
- Registration discount at ISBT congresses
- Online access to Working Party material
- Access to webinars & Live Journal Clubs
- 35 years and under discount membership fee (online access only for VOX Sanguinis and Transfusion Today)

For this year there are two new membership categories; Allied Health Professional and Transfusion Practitioner. An explanation of the new categories is available on the ISBT website with examples of job titles that fit into these categories. Please visit www.isbtweb.org to see details as they may apply to you.

Please renew your membership fee before June 30th 2018 to be able to continue your membership. After June 30, members who have not renewed will no longer be able to access or receive ISBT membership benefits.

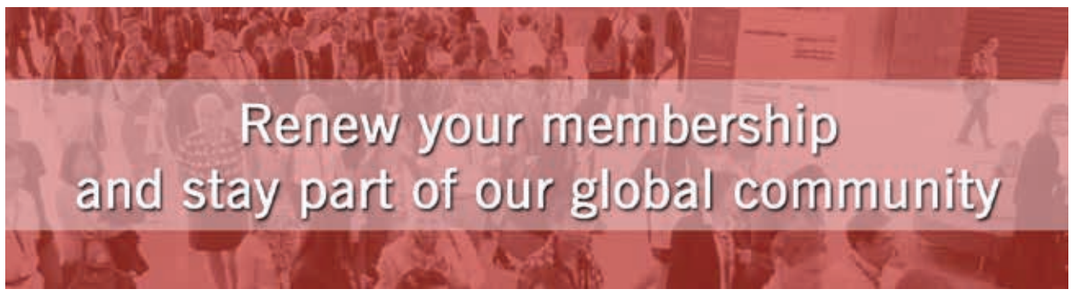
How to renew
Login with your current email address and password. Click on 'My Membership & Payments' to pay and renew your membership for 2018/19.

Payment methods
Online payments can be made using the following methods:
- Credit card (no 3D-secure)
- PayPal
- IDEAL (Netherlands only)
- Bank transfers (Contact membership@isbtweb.com)

Address up-to-date?
It is important that all your membership details are up to date so that you continue to receive Transfusion Today, Vox Sanguinis and the e-news. Please check that your membership details e.g. postal and email addresses are up-to-date and complete by using MyISBT. You can edit your details by logging in and by going to 'Edit Profile'. Make sure you click on "Update profile" on the bottom of the page to save the changes.

Questions?
For most answers to your questions please see our Frequently Asked Questions on the website. If you have any other questions, please contact membership@isbtweb.com.

We look forward to your continued membership in 2018/2019.



ISBT Forum

The ISBT Forum was launched in December 2016 as a next-step development from the Young Investigator and Transfusion Practitioner discussion groups on LinkedIn. With the launch of the new online Forum we also opened different topical subforums where members of ISBT could ask questions and help each other solve issues. This forum was based on a platform hosted by a different company, and we were unable to link existing membership accounts on the ISBT website to the external Forum provider. Because of this, we noticed many members of ISBT did not manage to create an account or did not visit the Forum as often as we had hoped for. As of April 16, 2018 we are happy to invite you to a new ISBT Forum, located on the MyISBT section of the ISBT website. Once you have logged in on the website you will be able to access the Forum. We expect the relocation of the Forum will stimulate more members to visit the Forum and eventually generate more posts and more interaction. Secondly, during the transition from the external Forum to the new MyISBT-based Forum we limited the range of topics for members to select. We hope this 'condensed' version of the ISBT Forum will provide more oversight for members and will in turn stimulate interaction.

Special subgroups for Transfusion Practitioners and Young Investigators are still available and we would like to encourage every member of ISBT to take a look on the new Forum. We hope you will allow it to be your go-to place when you have a transfusion medicine-related question and that you will take advantage of the benefits provided through being a part of a large, international society.

You can find the new ISBT Forum at forum.isbtweb.org, or log in on the ISBT website to access it.

Privacy regulations

As of May 25, 2018 new regulations on data privacy have been enforced by the European Union. The General Data Protection Regulation (GDPR) regulates the way organisations handle (from collection to storage to protect) personal data. Personal data is any data that can lead to the identification of a natural (existing) person. Since ISBT works with a lot of personal data from our members, partners, and congress delegates we feel it is important to update you on the ways ISBT has been working to be GDPR compliant.

As of May 22, 2018 we have uploaded a privacy policy on our website and circulated this among our members. We urge all members to review the ISBT privacy policy. An important part of the GDPR is the active consent people should give to parties using their data. By being a member of ISBT you receive certain benefits in return for your payment. Thus, ISBT uses your personal data so you can receive Transfusion Today, access Vox Sanguinis and the Science Series, access ISBT Education, receive the monthly eNews, etc. This means ISBT has to share your personal data with third parties who manage ISBT Education, print and mail Transfusion Today, or our online mailing provider. This communication of personal data is done in a secure format according to strict EU guidelines. All of this information can also be found in our Privacy Policy, which you can find on the ISBT website.

ISBT strategy 2015 - 2019

At the Board of Directors meeting in February 2017, the Board reviewed its 2015-2019 strategy under the guidance of its strategy facilitator, Professor Rene Olie.

The existing strategy consists of six domains; two first order domains and four second order domains. The second order domains are the platforms through which the first order goals are realised. Each domain has its own vision explaining what ISBT is striving for in this particular field.

At the February meeting the Board recognised that good progress was being made in relation to the strategy and many of the strategic objectives in place for each of the six domains had been met. The Board identified some gaps in the goals and domains.

At its meeting in Copenhagen in June 2017, the Board discussed adding more strategic objectives to three of the domains; advancing knowledge and education, publications and working parties and adding two more domains with a vision and set of strategic objectives for each. These two new domains were established in recognition that more work needs to take place to support ISBT's role of advocacy in the mission statement. The additional domains and their associated objectives and the new objectives for the existing domains were signed off by the Board at its November 2017 meeting in Guangzhou.

The Domains and their associated vision are shown below.

Domain	Vision
Advancing Knowledge and Education	Be the global "go to" organisation for transfusion medicine education, training and knowledge sharing
International Outreach and Coverage	Engage individuals and institutions in the field of transfusion medicine all around the world in a truly accessible and effective global network.
Congress	Be the international congress of choice for transfusion professionals
Publications	Generate a high quality series of publications which cover transfusion medicine and fields of related interests
Digital Resources	Be an authoritative go-to source for information and a preferred platform for networking on transfusion science and practice
Working Parties	Leverage the activities and outputs of the Working Parties and ensure alignment with the strategic direction of the Society
Governance	Enhance the role of the Regional Directors and reinforce financial policy making and risk management
Advocacy	A set of actions for advocacy of blood donors and transfusion recipients

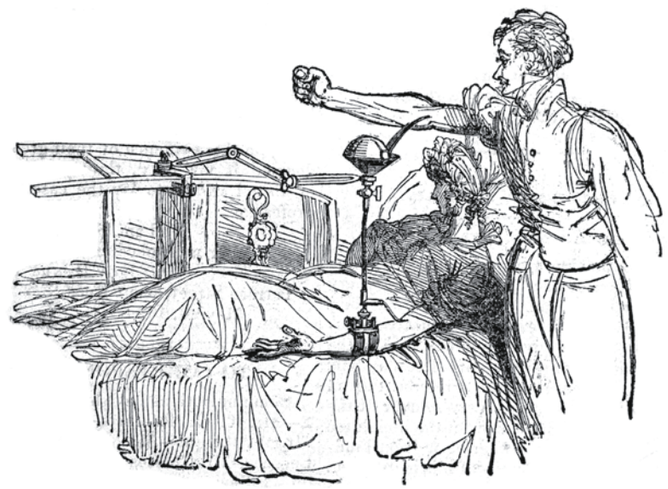
Two hundred years ago, in 1818, the British obstetrician James Blundell performed the first successful human-to-human blood transfusion at Guy's and St. Thomas' Hospitals in London.

In order to celebrate this anniversary, Transfusion Today will dedicate one short article in every issue in 2018 to this topic In the previous issue we elaborated on how it all began with the first animal-to-human blood transfusion. This article is about the early history of human-to-human blood transfusions.

In 1670 the procedure of blood transfusion was banned as it was considered to be too dangerous. During the next 150 years blood transfusion fell into oblivion, until James Blundell performed the very first successful human-to-human blood transfusion in 1818. Blundell undertook a series of experiments with animals, where he would drain them of blood until the point of "apparent death", and then revived them by blood transfusion. After these experiments Blundell came to the conclusion that the blood of humans and animals were not interchangeable; usually it led to death within few days. This is why Blundell throughout his work in transfusion advocated that "in… transfusion on the human body, the human blood alone should be employed" (Blundell, Researches 92).

James Blundell performed the first successful human-to-human blood transfusion in 1818 to treat postpartum haemorrhage by transfusing human blood using a syringe. The blood donor was the patient's husband. Blundell extracted approximately four ounces of blood from the husband's arm to transfuse into his wife. That is how James Blundell became the pioneer of blood transfusion as we know it today.

During the following years, Blundell performed 10 transfusions of which 5 were successful. He also invented several instruments for the transfusion of blood. In 1840, at St George's Hospital Medical School in London, Samuel Armstrong Lane, aided by James Blundell, performed the first successful whole blood transfusion to treat haemophilia. Blood transfusion however, was still regarded as very risky procedures as it often resulted in the death of the patient. Therefore it was largely shunned by the medical establishment.



Picture: J.H. Aveling, Immediate transfusion in England, Obstetrics Journal, 1873073, 1, 303

World Blood Donor Day June 14, 2018

“Be there for someone else. Give blood. Share life”

The WHO together with IFRC, ISBT and FIODS established World Blood Donor day to recognise and thank voluntary, unpaid blood donors for their life-saving gift of blood and to raise awareness of the need for regular blood donations to ensure the quality, safety and availability of blood and blood products for patients in need.

The theme of this year’s campaign is blood donation as an action of solidarity. It highlights the fundamental human values of altruism, respect, empathy and kindness which underline and sustain voluntary unpaid blood donation systems.

The slogan, **“Be there for someone else. Give blood. Share life”,** was created to draw attention to the roles that voluntary donation systems play in encouraging people to care for one another and generate social ties and a united community.

The campaign aims to highlight stories of people whose lives have been saved through blood donation, as a way of motivating regular blood donors to continue giving blood, and to motivate people in good health who have never given blood to begin doing so, particularly young people.

The objectives of this year’s campaign are:

- to celebrate and thank individuals who donate blood and to encourage those who have not yet donated blood to start donating;
- to raise wider awareness that blood donation is an altruistic action that benefits all of society and that an adequate supply can only be ensured through regular donations by voluntary, unpaid blood donors;
- to highlight the need for committed, year-round blood donation, in order to maintain adequate supplies and achieve national self-sufficiency of blood;
- to focus attention on blood donation as an expression of community participation in the health system, and the importance of community participation in maintaining sufficient, safe and sustainable blood supplies;
- to promote the community values of blood donation in enhancing community solidarity and social cohesion and in in encouraging people to care for one another and build a caring community;
- to promote international collaboration and ensure worldwide dissemination of and consensus on the principles of voluntary non-remunerated donation, while increasing blood safety and availability.

From ISBT Central Office

New Board of Directors

ISBT Elections 2018

Elections for vacant positions on the ISBT Board of Directors took place from March 13 to May 5, 2018. 602 (33%) of members eligible to vote exercised their right to do so.

The results of the voting are as follows:-

President Elect	Erica Wood
Secretary General	Gwen Clarke
Regional Director Eastern Mediterranean Region	May Raouf
Regional Director Europe	Birgit Gathof
Regional Director North Americas (USA & Canada)	Mindy Goldman
Regional Director South Americas (excluding USA & Canada	Lilian Castilho
Regional Director Western Pacific	Veera Sekaran Nadarajan

We thank all those members who were willing to stand as candidates in the election.

ISBT Award 2018

ISBT has a long tradition to grant the ISBT Award to persons who have contributed significantly to transfusion medicine and science, mainly in educational aspects. The decision to grant the ISBT Award is the privilege of the ISBT Executive Committee.

Three Awards will be presented at the 35th International Congress of the ISBT in Toronto, Canada.

Peter Flanagan, National Medical Director, New Zealand Blood Service and honorary associate clinical professor in the Department of Molecular Medicine and Pathology, Auckland University
For initiating and completing the review and revision of the ISBT Code of Ethics with its subsequent acceptance by the ISBT General Assembly in 2017 and for his further work related to increasing awareness of the revised code internationally.

Pierre Robillard Medical Director, Hema Quebec, Canada
For his leadership in haemovigilance and transfusion medicine in Canada and internationally and the development of international standard definitions of adverse transfusion reactions and adverse donation events.

Diana Teo, Chairman of the Professional Board at the Singapore Health Sciences Authority and Senior Consultant at the Blood Services Group at Health Sciences Authority
For her leadership of the ISBT Academy from 2012 – 2016 and especially related to the initiation and launch of the ISBT Academy ePortal. The ePortal has a rich variety of educational material and is the recognized learning platform of the Society.

In Memorium

Pim van Aken

On March 6, 2018, Pim van Aken - former member of the ISBT Council, former member of the Editorial Board of Vox Sanguinis, former ISBT President and Honorary Member of ISBT - passed away at the age of 81. Pim, a man with many talents, has devoted his time and work to hemostasis and coagulation, blood transfusion and transfusion science, the combination of vascular medicine and internal medicine, and initiatives for safe blood and plasma in LMIC.

After his thesis on 'Platelets aggregation and RES function' and his specialization in internal medicine, he worked as a Research Fellow of the Ontario Heart Foundation at the McMaster University in Hamilton, Canada. In 1976, he became in Amsterdam Head of the Department of Cardiology and Internal Medicine of the Academic Medical Center (AMC) and staff member of the Central Laboratory of the Netherlands Red Cross Blood Transfusion Service (CLB) with the focus on clinical and experimental research of thrombosis and atherosclerosis. Later, he became Medical Director of CLB and Professor of Internal Medicine at the Technical University of The Netherlands, two functions which he combined with his clinical practice in internal medicine at the AMC. His main interest in CLB was coagulation and molecular biology. By being professionally active in internal medicine and his great commitment to patients who were dependent on blood and plasma products, he contributed to the best possible solutions, also in difficult periods. He played an important role in the AIDS-HIV period in the 1980's and due to his openness and transparent attitude, the Dutch hemophilia community was quite happy with his approach. For new and emerging risks in the blood supply, he investigated, together with others, the medical risks and potential methods to address these serious problems.

He was the initiator of the first Dutch Blood Transfusion Consensus Conference, which was the first in the world, with the objective to set rules for an evidence-based patient-directed clinical blood transfusion policy. Together with Dr. Jussi Leikola, he was the founder of the European Plasma Fractionation Association in 1990 and the European Blood Alliance in 1998, both effective in binding and helping European stakeholders on the drafting of regulations and declining the risks of emerging infections. He defended strongly the principle of the not-for-profit blood supply and the voluntary non-remunerated blood donation. The Council of Europe and World Health Organization, in particular the WHO-Expert Committee on Biological Standardization, had the benefit from his knowledge and expertise. Both in the Netherlands as abroad he was a member of a great number of councils and advisory boards such as the Dutch National Health Council and the UK National Blood Service's Research Review Committee.

In 1994, he was the President of the International ISBT Congress in Amsterdam, and after the congress he became the Chairman of the Foundation Transfusion Medicine which is responsible for the bi-annual ISBT Presidential Award for a scientist who has made a significant contribution to blood transfusion science or a related field.

Pim had the peculiar talent to give his opinion clearly, compact and direct without evoking polarization and without excluding compromises at a later stage. He had a sound feeling for quality of people who he could help or with whom he could reach the best results. His mark was his energy and purpose, not for personal gain or recognition, but for improving the human condition. And always with a smile and a kind word.

Pim was as Peter Flanagan said and I quote: "a giant in his field and always a gentleman".
We will miss him dearly.

Written by: Paul Strengers

EDUCATION

ISBT Education

Accreditation
It is our pleasure to inform you that the Dubai, Copenhagen and Guangzhou congress webcasts received accreditation from the European Board for Accreditation in Hematology (EBAH). You will be able to earn accreditation points by watching webcasts and completing the associated quizzes.

Webinars 2018
The speakers of the 2018 webinars are known. ISBT members will receive email invitations to register for these. If you missed one or would you like to re-watch it, please visit education.isbtweb.com and find the webinars within the Home menu.

Please see the table below for the webinars 2018 schedule until September.

ISBT Education: website and app
You might have noticed that the name of the e-learning portal changed from ISBT Academy ePortal to ISBT Education, which is why a new logo appeared on the website. The name modification will be reflected in the new URL: from now on, please use education.isbtweb.org. Furthermore, there will be an ISBT Education app released soon, which allows ISBT members to watch congress webcasts and webinars on their mobile phones or tablets.

Speaker	Title	Date
Ruchika Goel	Pediatric Transfusion Medicine: From the fetus to the young adult, One size does NOT fit all	January 10
Barbara Masser	If you're happy and you know it, will you return?	February 7
Eldad Hod	Current issues relating to the red cell storage lesion	March 7
Peter Flanagan	Code of Ethics	April 11
David Roberts	INTERVAL Study	May 2
Miguel Lozano	Contaminación bacteriana de los concentrados de plaquetas: ¿un reto pendiente?	June 27
Alexander Vlaar	TACO	July 18
Linley and Rachel	The role of Transfusion Practitioners in TM	August 1
Veera Sakarajan	Immunohaematology	September 5

ISBT ACADEMY

Immunohaematology workshop Kuala Lumpur 2018

Veera Sekaran Nadarajan
Head and Consultant Haematologist
University Malaya Medical Centre
Kuala Lumpur,
Malaysia

The Malaysian Blood Transfusion Society and the Department of Transfusion Medicine, University Malaya Medical Centre (UMMC) had collaborated to organise a training workshop on basic and intermediate immunohaematology theory and practice, held at the premises of University of Malaya, Kuala Lumpur. This workshop was conducted as a post-congress event in conjunction with the 8th Malaysian National Transfusion Medicine Conference.

The speakers and facilitators of the workshop included Professor Dr. Robert Flower (Red Cross Service, Australia), Associate Professor David Roxby (Flinders Medical Centre, Australia), Associate Professor Dr. Veera Sekaran Nadarajan (University Malaya, Malaysia), Ms Helen Haysom (Monash University, Australia), Ms Kelly Burns (Monash University, Australia) and Ms Rosnizah Awaluddin (UMMC, Malaysia). Medical and technical personnel from the National Blood Centre, Kuala Lumpur and UMMC were also actively involved in organizing and conducting the practical training sessions.

Sixty-two participants coming from various regions of Malaysia, as well as from Vietnam and Saudi Arabia made this a truly enjoyable and interactive workshop with abundant exchange of experience and ideas. The participants represented a wide range of professions, including laboratory and clinical haematologists, transfusion medicine specialists, medical officers, scientists and medical laboratory technologists.

Over the two and half days of workshop proceedings, participants were exposed to lectures delivered in the morning followed by hands-on laboratory practical training afterwards. The first day lecture and laboratory practical sessions focused on basic immunohaematology aspects, whereas the second and third days delved into slightly more advanced immunohaematology methods. The topics for lectures included: Red cell antigens and antibodies in the Asian region, factors effecting red cell antigen-antibody reaction, choosing appropriate reagents for red cell typing and antibody screening, preparation of in-house reagent cells, the antiglobulin test – direct and indirect, red cell immunization, persistence and evanescence, enhancement techniques for red cell antibody identification, antibody identification in DAT positive patients, use of adsorption and elution techniques, red cell phenotyping and genotyping, haemolytic transfusion reactions and haemolytic disease of foetus and new-born. Laboratory practicals included resolving ABO and RhD discrepancies, performing anti-globulin and compatibility testing, resolving basic and complex antibody screen positive samples as well as resolving DAT positive samples and investigation of potential haemolytic transfusion reactions.

Participants were divided into eight groups consisting of doctors and technical personnel. During the laboratory practical sessions, technical personnel conducted hands-on laboratory work while the clinicians observed to understand the procedures. During case study discussions, both clinicians and technical personnel contributed to the discussion, providing relevant input on how to solve immunohaematology problems.

Throughout the workshop, participants were actively involved in questions and answer sessions and were able to clarify their doubts in various areas of immunohaematology. Participants were also able to share and discuss case experiences with speakers and facilitators and learned different management practice in various hospitals. In addition, participants were able to build professional and technical networks among colleagues for better collaboration in the blood transfusion service.

On behalf of the organizing committee of Immunohaematology Workshop KL 2018, we would like to thank all the invited and local speakers, facilitators and participants for making this immunohaematology workshop a success. The constructive and encouraging feedback given by participants is much appreciated. We would like to take this opportunity to thank the ISBT Academy, Malaysian Society of Haematology and Ortho Clinical Diagnostics for funding the workshop. This workshop would hopefully be among the many to come, fostering greater collaboration among stakeholders in the Ministry of Health, Ministry of Education as well as local and international professional societies with the common objective of cooperatively improving the blood transfusion service within the region.

ISBT ACADEMY

IIIrd Eurasian congress “Topical issues of gratuitous blood donation development”

The III Eurasian Congress “Topical issues of gratuitous blood donation development” took place in Astana, Kazakhstan on April 4-6, 2018 in which representatives from 19 countries took part.

The congress was held with the support of the Ministry of Health of the Republic of Kazakhstan, the republican society of Tranfusiologists and the International Society of Blood Transfusion.

The congress was opened by the Minister of Health of the Republic of Kazakhstan Yelzhan Birtanov, who noted in his speech that the priority attention of the state is paid to the issues of the blood service in Kazakhstan. As a result of the systemic reform of the blood service in Kazakhstan, 18 modernized blood centres function in the country today, two-stage screening of donor blood for markers of transfusion infections was adopted. Kazakhstan is the first country in the CIS where 100% inactivation of pathogens of platelet concentrates is mandatory at the legislative level.

Within the framework of the plenary session of the Congress, there were several main reports on the state of blood service in Kazakhstan, Russia, Belarus, Japan, the USA, South Africa and other countries. The freelance transfusiologist of Kazakhstan, Burkitbayev Zhandos, presented a report on the experience of reforming the blood service of Kazakhstan. The President of ISBT, Ravi Reddy (South Africa), devoted his speech to the theme “Strategies in Transfusion Medicine. Management of blood supplies”. Jed Gorlin (USA) addressed the topic “New International Standards of the American Association of Blood Banks”. Michael Schmidt (Germany) had a presentation on the automation of blood donor screening and Eichler Olga and Karpenko Fedor spoke about the success of the blood service in Russia and Belarus.

The second part of the Congress was continued at the round table titled “Common international and national characteristics of the blood service of different countries” during which leading experts in the field of transfusion medicine Ravi Reddy, Miguel Lozano, Zhiburt Eugene, Toshio Mazda, Jed Gorlin, Michael Schmidt, Richard Benjamin and other specialists from different countries discussed topical issues of the blood service and answered the questions of the participants of the congress. The meeting of leading experts in the field of blood transfusion was held in the format of interesting and active discussions.

ISBT ACADEMY

Zhandos Burkitbayev
Director of the Scientific and Production Center of Transfusiology
Astana, Kazakhstan

In the following days, the work of the congress continued in the following areas: clinical use of components of donor blood, topical issues of immunological and infectious safety of blood components, problems of hematopoietic stem cell transplantation in oncological diseases of the blood system, development of registries of HSC donor, creation of amotosalen treated lyophilized plasma.

During the congress on 2, 3 and 6 April 2018, master classes were held by leading experts in the field of transfusion medicine and immunogenetics, who shared their skills and experience in the following areas: “Plasma enriched with soluble platelet factors and its derivatives: receiving medical application”, “Accreditation of immunological typing laboratories for compliance with the standards of the European Federation of immunogenetics”. Trainings and poster presentations were presented by specialists from different countries.

Interested participants of the congress got acquainted with the structure and activity of the blood service of Kazakhstan on the example of the Scientific and Production Center of Transfusiology during a tour through its departments and laboratories.

At the end of the congress the draft resolution was discussed, whose main provisions are aimed at further improving the quality and safety of transfusion medicine in the territory of the Eurasian Economic Community and neighbouring countries participated in the congress.

ISBT ACADEMY

MEDLAB congress 2018: A focus on global blood transfusion medicine

Inga Stevens
Communications consultant, Informa Life Sciences Exhibitions

The successful 2nd standalone edition of the MEDLAB Congress recently took place from February 5 -8, 2018 at the Dubai International Convention & Exhibition Centre in Dubai, United Arab Emirates. Playing an important role in raising the standard of practice and service delivery in medical laboratories across the Middle East region, the MEDLAB Congress welcomed 6,726 delegates who were able to discover innovations in medical laboratory testing as well as earn CME-accreditation from 17 distinct conference tracks.

For the first time, five new clinical conference tracks were introduced alongside the laboratory-focused conferences to enhance collaboration between laboratory professionals and clinicians and aid in accurate interpretation, quick reporting and diagnosis, therefore strengthening the laboratory's ability to provide clinical decisions and improve the overall quality of service and care in the region. While the laboratory-focused tracks saw the return of firm favourites such as laboratory management, molecular diagnostics, diabetes testing and management, haematology, laboratory informatics, point of care testing, tumour markers, clinical microbiology, clinical chemistry, cardiac markers and histopathology, the new clinical tracks for 2018 were oncology, obs-gyne, endocrinology, cardiology, as well as antibiotic use and misuse.

One of the most eagerly awaited laboratory conferences for 2018 was the Blood Transfusion Medicine conference centred around the global challenges in transfusion transmitted infections and effective tools for improving these practices in the hospital setting. According to the American Society of Haematology, transfusion medicine today is using lessons learned from the past to dramatically improve outcomes in the future. Areas of study include technologies that will more precisely identify blood components to increase patient safety and simplify blood inventory; improved automation to increase efficiency and decrease error; and screening methods that will help reduce the risk of infection.

The World Health Organisation (WHO) has reported that around 112,5 million units of donated blood are collected globally every year, with nearly 47% of these blood donations collected from high-income countries, home to less than 19% of the world's population. Many patients requiring transfusion, however, do not have timely access to safe blood and blood products. The WHO also emphasises that all donated blood should always be screened for HIV, hepatitis B, hepatitis C and syphilis prior to transfusion, yet 35 countries are not able to screen all donated blood for one or more of these infections due to irregular supply kits, staff shortages, poor quality test kits or lack of basic quality in laboratories.

Chaired by Dr May Yassin Raouf, who is the Head & Medical Director of the Dubai Blood Donation Center, which is run by the Dubai Health Authority, the one-day Blood Transfusion Medicine conference at MEDLAB 2018 began with a morning session focused on updates on transfusion transmitted infection (TTI) such as the Zika virus and Malaria. This was followed by a session on the clinical aspect of transfusion including transfusion reactions to blood product, blood transfusion programmes for Thalassemia and the safe transfusion practice in patients with Haemoglopinopathies.

The afternoon's discussions opened with an in-depth look at new technologies in blood transfusion practice such as red cell genotyping and future pre-transfusion testing, updates on pathogen inactivation and the use of smart applications to improve blood donors recruitment and retention.

The final session of the day focused on management and quality in blood transfusion medicine where key speakers such as Rachel Moss, who is a transfusion practitioner at the Great Ormond Street Children's Hospital in London, United Kingdom, spoke about the role of the transfusion nurse or transfusion practitioner in patient transfusion safety. Other topics included Haemovigilance and compliance.

The 2019 edition of MEDLAB Middle East Congress will take place from February 4 to 7 at the Dubai International Convention & Exhibition Centre in Dubai, UAE. Visit www.medlabme.com for more information.

EUROPE

Granulocytes for transfusion? Still waiting for evidence

Granulocyte transfusions are considered by some clinicians to be an effective adjunct to treat patients with severe defects in neutrophil quantity or function, but evidence of effectiveness is very limited. Most clinical studies have focused on adults and children with profound neutropenia due to haematological malignancy or aplastic anaemia, and much of the existing literature has been dominated by typically retrospective observational studies. There have been two recent randomized controlled trials1,2 assessing therapeutic use of granulocytes in patients with chemotherapy-induced neutropenia and infection refractory to antimicrobial treatment. Investigators in both studies reported difficulty recruiting patients and neither study met the key objectives. Incorporation of data from the most recent published trials in a meta analyses were unable to report consistent evidence of significant benefits of granulocyte transfusion in patients with profound neutropenia.3 Many authors suspect efficacy is closely related to dose, but sufficient doses can be difficult to achieve with current methods of granulocyte production.

Granulocytes for transfusion can be prepared by two methods. Apheresis granulocytes can be collected following donor stimulation with granulocyte colony-stimulating factor (G-CSF), corticosteroids or both. A sedimenting agent is added during the apheresis collection in order to assure optimal collection yields. Several agents can be used; hydroxyethyl starch (HES), low molecular weight dextran or modified fluid gelatin. The most efficient and most used for many years has been HES. However in January 2018, the European Medicines Agency issued a recommendation to suspend the marketing authorization of HES solutions for infusion across the European Union due to the risk of kidney injury and death when the solution is used in critically ill patients and patients with sepsis.4 Alternatives to HES such as modified fluid gelatin have shown a significant reduced efficiency in granulocyte collection.5 A concern with apheresis collection is that the stimulatory agents administered before the apheresis and the sedimenting agent utilized during the apheresis collection are not exempt from potential side effects;6 if these matters are taken into consideration with the lack of clear evidence for the clinical efficacy of the products, this may pose an ethical conflict.

In recent years, another method has been proposed for preparing granulocyte concentrates for transfusion which prevents the need for exposing donors to drugs with potential side effects: the pooling and centrifugation of buffy coats. After pooling 10, ABO identical buffy coats the bag is centrifuged, the supernatant plasma and the red blood cells are discarded and the buffy coat is suspended in a mixture of plasma and platelet additive solution. The usual content of granulocytes in the pool is around 1 x1010 with the standard dose being 2 granulocyte pools per day. A recently published International Forum on provision of granulocytes for transfusion7 showed that apheresis granulocytes were the predominant method of collection in most of the countries with buffy coat-derived products available in United Kingdom and Australia.
In front of the lack of evidence, it is clear that further research is needed. An initiative of Biomedical Excellence for Safer Transfusion (BEST) Collaborative (www.bestcollaborative.org) of an international registry of granulocyte transfusions (omc.ohri.ca/ProGrES) will try to gain more insight into the role of granulocyte transfusion in current medical practice.

Miguel Lozano
University Clínic Hospital, University of Barcelona, Barcelona, Spain

Suzy Morton
University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom

Simon Stanworth
NHSBT/Oxford University Hospital NHS Foundation Trust, Oxford, United Kingdom

Regional Europe

EUROPE

REFERENCES

1. Seidel MG, Peters C, Wacker A, Northoff H, Moog R, Boehme A, et al. Randomized phase III study of granulocyte transfusions in neutropenic patients. Bone Marrow Transplant 2008;42: 679-84.

2. Price TH, Boeckh M, Harrison RW, McCullough J, Ness PM, Strauss RG, et al. Efficacy of transfusion with granulocytes from G-CSF/dexamethasone-treated donors in neutropenic patients with infection. Blood 2015;126: 2153-61.

3. Estcourt LJ, Stanworth SJ, Hopewell S, Doree C, Trivella M, Massey E. Granulocyte transfusions for treating infections in people with neutropenia or neutrophil dysfunction. Cochrane Database Syst Rev 2016;4: CD005339.

4. Hydroxyethyl-starch solutions for infusion to be suspended- CMDh endorses Pharmacovigilance Risk Assessment Committee (PRAC). http://www.ema.europa.eu/ema/index.jsp?curl=pages/news _ and _ events/news/2018/01/news _ detail _ 002882.jsp&mid=WC0b01ac058004d5c1 Last accessed April 3rd, 2018.

5. Dullinger K, Pamler I, Brosig A, Mohrez M, Hahnel V, Offner R, et al. Granulocytapheresis with modified fluid gelatin versus high-molecular-weight hydroxyethyl starch: a matched-pair analysis. Transfusion 2017;57: 397-403.

6. Guide to the preparation, use, and quality assurance of blood components. 19th ed. Strasburg: Directorate for the Quality of Medicines & HealthCare of the Council of Europe (EDQM). 2017.

7. NHS Blood and Transplant, NHSBT Portfolio of Blood Components and Guidance for their Clinical Use. http://hospital.blood.co.uk/media/28748/spn223.pdf Last accessed April 4th, 2018

7. Morton S, Stanworth S, Lozano M, Harrison SJ, Hong FS, Dennington P, et al. Vox Sanguinis International Forum on provision of granulocytes for transfusion and their clinical use: summary. Vox Sang 2017;112: 680-3.

The 8th Malaysian national transfusion medicine conference

Thane Moze Darumalinggam
Transfusion Medicine Specialist,
National Blood Centre,
Kuala Lumpur, Malaysia.

Embarking 20 years establishment of Malaysian Blood Transfusion Society, the 8th National Transfusion Medicine Conference was organised for 2 days from March 23 to 24, 2018 at Berjaya Times Square Hotel, Kuala Lumpur. The theme for the conference was "Transfusion Beyond Tomorrow" taking transfusion to the next level.

The speakers for this conference were renowned and well known in their respective fields from Australia, Egypt, Germany, India, Japan, Singapore, Spain, Thailand & Malaysia. In total, three plenaries and nine symposia were conducted. Topics covered global safety, donor recruitment and retention, component therapy and new technology, role of transfusion in cellular therapy, patient blood management, massive transfusion, frozen platelet, haemovigilance and finally transfusion medicine and beyond.

The conference was attended by 450 participants including participants from Sri Lanka and Indonesia and 18 exhibitors. This conference received an overwhelming response for abstract and poster presentations; as many as 78 abstracts were from various categories.

The first day of the conference started with a plenary session given by Dr Diana Teo on update on Global safety based on the 2016 global report covering emerging and re-emerging infectious status challenges. This was followed by the first symposium by Dr Tan Hwee Huang on the range of available interventions to manage blood safety by improving recruitment and retention strategies. Concluding the session Ms Wendy Wan addressed the current challenges of the decline in young blood donors and steps taken to revive this state.

Professor Dr Harshal N delivered an extensive lecture for the second plenary which consisted of new direct anticoagulants in bleeding management. Symposium two began with a lecture from Associate professor Dr Miguel Lozano on granulocytes usage as prophylaxis in certain conditions. This symposium ended with a lecture by Associate Prof Dr David Roxby on usage of red cells. Usage less than 10 days is acceptable in neonates however, red cell transfusion for intra uterine transfusion remains unchanged at less than 5 days of storage.

Symposia 3 and 4 covered topics on transfusion and technology with speakers covering diverse topics, such as critical control points and quality in clinical transfusion by Dr Nelson Tsuno. Followed by an intriguing lecture by Professor Dr Robert Flower on expansion of computer cross match in transfusion taking clinical transfusion into the next level. In addition to this, he also shared information related to genomic era related to detection of immunogenic polymorphisms associated to change in transfusion management. New value was added by Dr Magdy from Egypt as he shared his experience in the role of mini pool cryoprecipitate technology usage as a cost saving with guaranteed clotting factor coverage.

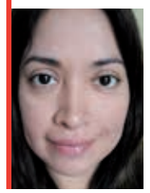
Highlight of the day was a glorious dinner with red carpet theme in conjunction with the 20th year of MBTS establishment. It was an event which will always be remembered by everyone who attended the night. The night was lavishly celebrated with idols who have been the pillar of growth and expansion of transfusion service in Malaysia. It was a truly enjoyable night as generous lucky draws were given and amazing entertainment and an unbeatable master of ceremony to captivate everyone. A splendid night and excellent execution of the 20th year celebrations.

Following the extravaganza celebration, the second day of the conference started with plenary 3 with a talk by Dr Miguel on the role of physicians in supporting cellular therapies in various areas of treatment. Subsequently, symposium 5 covered PBM in Hospital Serdang by Dr Intan Iliana. This was followed by a lecture by Dr Carol in summing up systemic approach of massive transfusion. In symposium 6 topics such as frozen platelet, effects of platelet storage and mitigation of alloimmunized and pathogen inactivation in red cell were discussed. As for symposium 7 and 8, various topics associated to latest development in transfusion field were discussed.

Two full days of knowledge, experience sharing and aim for betterment in transfusion service beyond tomorrow leading to an achievable direction. On behalf of the organizing committee we would like to thank all our speakers for their valuable contribution to make the 8th National Transfusion Medicine Conference an abundant success. All encouraging feedbacks by participants are most appreciated. We are already looking forward to the 9th National Transfusion Medicine Conference.

SOUTHERN AMERICAS

The transfusion committee and the dynamics of management in hemotherapy



Ina Pérez Huaynalaya
Clinical Pathologist
Head of Blood Bank - Clinica Delgado (AUNA)

A patient arrives with a trauma accident, Accident and Emergency (A&E) notify the blood bank service 30 minutes before arrival that they have a patient requiring a massive transfusion, the A&E team enter the emergency ambulance and the shock trauma team prepares to resuscitate the patient with 6 people in addition to the box of massive bleeding and point of care ready devices. A blood bank technician, a transfusion nurse and a hemotherapy doctor are present working quietly and collecting the necessary data. At the end the nurse is working with an infusion pump and informing the resuscitation team, the technician rescues laboratory analysis and the doctor returns to the service with an idea of the necessary reassessment that has to be executed and the pending coagulation monitoring.

How many times have I received the same question: How do I make the transfusion committee work the same as this in my hospital? How do they agree and have the resources?

The answer should be easy: continuous drills, continuous training and investigation. The multidisciplinary training theme designed from the transfusion committee should be addressed the same as organizational culture and quality and is as important as the academic curriculum. An anaesthesiologist, for example, is trained in massive haemorrhage, maternal collapse and shock management. However, he will not be able to treat unless he has the chain where other professionals add much to the correct development and monitoring of adverse events.

The application of the Patient Safety Doctrine in Peru dates back to 1998 and the management regulation of the transfusion committee and the initial terms for the definition of haemovigilance were approved. Having an active committee with double-blind auditors is the best opportunity to analyse sentinel event chains and incidents, as well as near-misses.

The management of the transfusion committee has allowed us initially to:

1. Stop perceiving ourselves only as a health centre that serves people but that is institutionalized that belongs to a national network and that the needs other people outside the network.
2. Contribute to creating bridges and specialized multidisciplinary teams of high complexity.
3. Integrate nurses throughout their plans to Transfusion Practice training programs with nurses from our service. In Peru there is no specialty of hemotherapy for nurses.
4. Create proposals for a postgraduate educational model for all physicians that needs to be transferred, a mandatory path before starting their practice.
5. Collect experiences of what other colleagues consider attractive of our service, as well as opportunities for improvement.
6. Increase the standard of work progressively.

The transfusion committee should meet at least once a month and within weeks to address specific problems with other specialties, address problems using a moderator and make the participation in each event more sincere. The Canadian accreditation requires more spaced meetings but together with the Medical Directorate it was agreed that given the reality that medical education has outstanding training in the undergraduate program, it merited more frequent meetings.

Committee achievements:

In Nursing include:

- Reinforcement program at 10 minutes - prior to the beginning of the nursing shift - where the correct ones are reinforced and a brief examination is taken.
- Custom training induction in the blood bank to each nurse who enters.
- Participation in the National Nursing Congresses of the Organization.
- 24x7 mapping of hospital bleeding risks and surgical programming.
- In Medical Technology.
- Analysis and annual report of Serological Internal Quality Control program.
- Analysis of the causes of exclusion of donors due to serological causes.

In Medicine include:

- Adverse Event Reporting Improvement Opportunities.
- Case analysis of High Blood Consumption for services.
- Causes of Adverse Reactions in Patients.
- Causes of Adverse Reactions from Donors

2018

June 14, 2018
World Blood Donor Day
Athens, Greece

June 19 - 22, 2018
9th International Congress of AfSBT
Arusha, Tanzania

July 10 - 11, 2018
International Haemovigilance Seminars
Manchester, UK

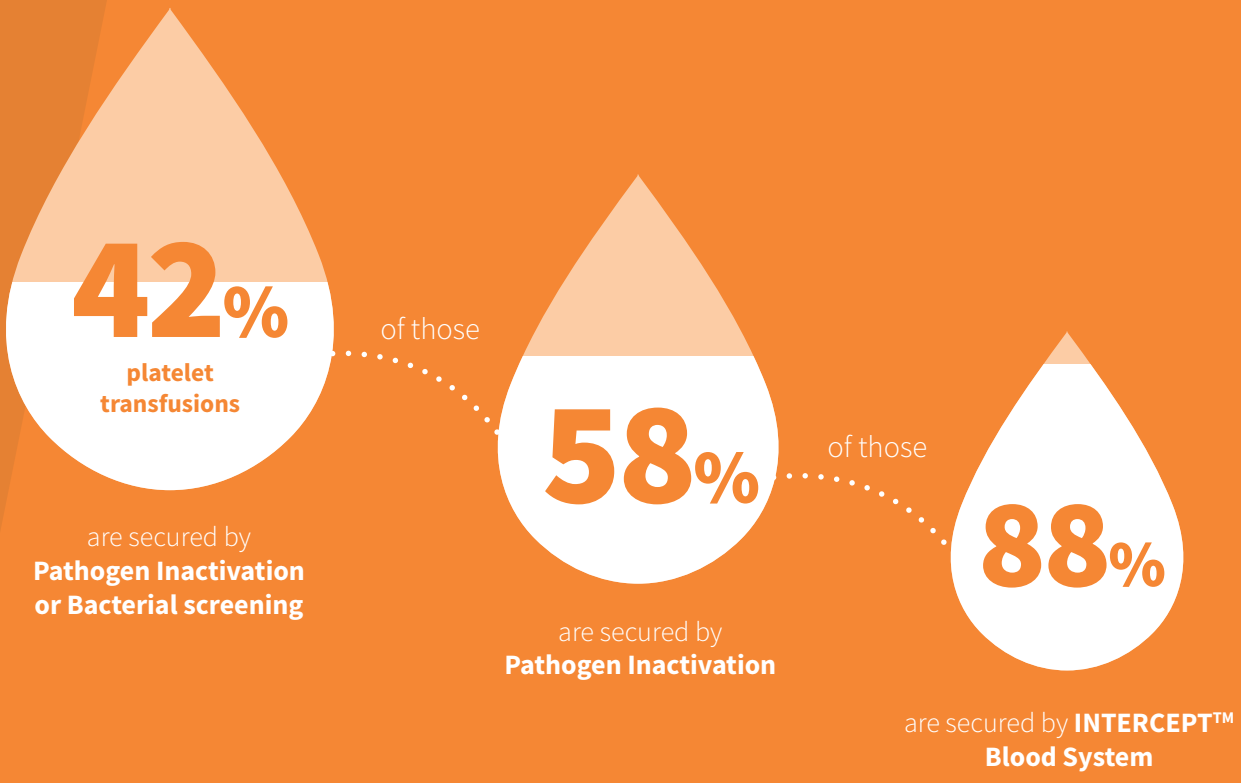
September 5 - 7, 2018
3rd European Conference on Donor Health & Management (ECDHM)
Copenhagen, Denmark

Future ISBT Congresses

Basel
Bangkok
Barcelona

29th Regional Congress of the ISBT, Basel, Switzerland, June 22-26, 2019
30th Regional Congress of the ISBT, Bangkok, Thailand, November 16-19, 2019
36th International Congress of the ISBT, Barcelona, Spain, June 6-10, 2020

What have you done to **protect your patients?**



EU Platelet Safety Today

More at **interceptbloodsystem.com**

References

Represents EU and Switzerland December 2017 market size data provided by national, regional and individual blood centres. Data on file.

INTERCEPT BLOOD SYSTEM

CERUS