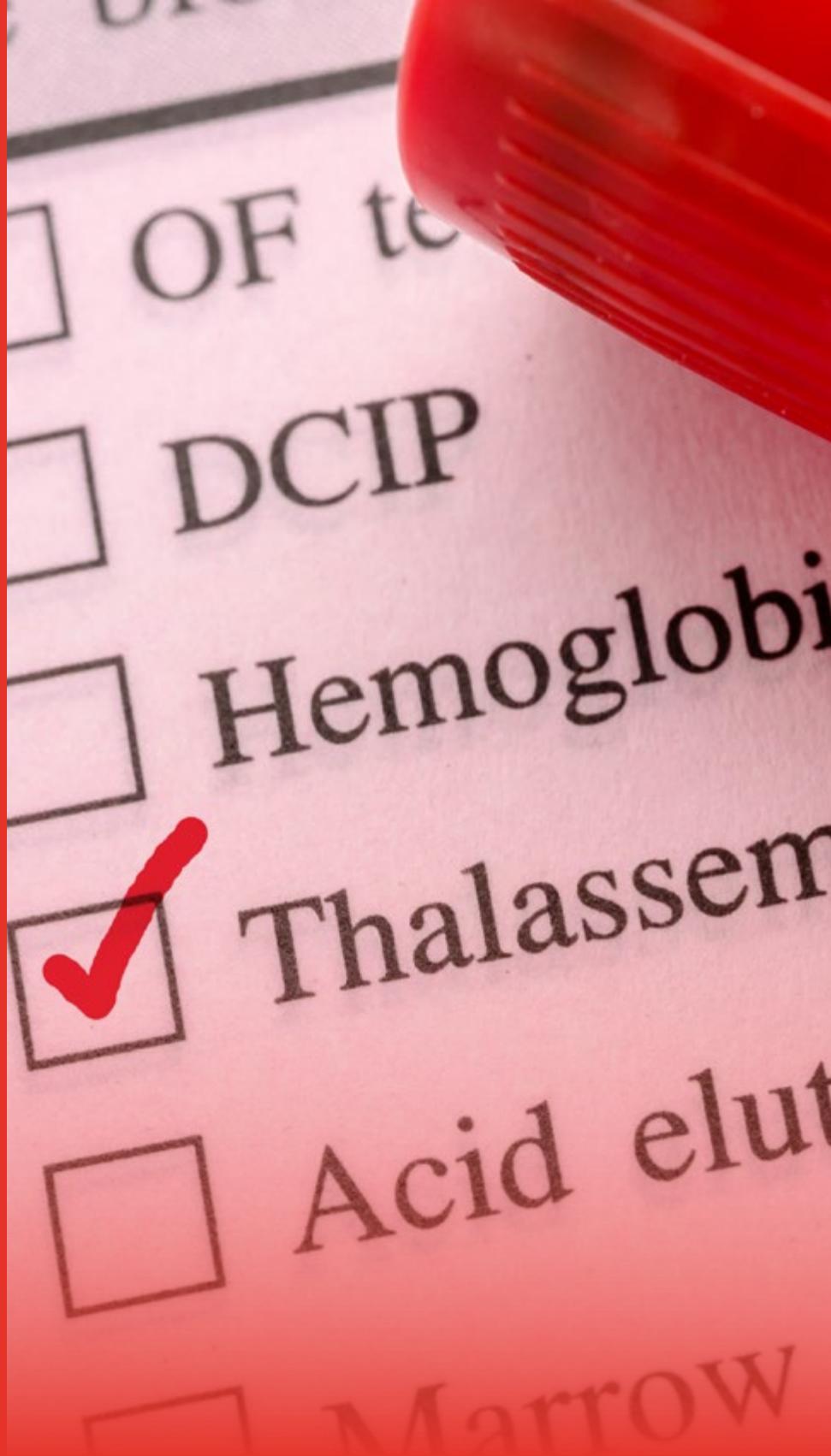


# TRANSFUSION TODAY

Transfusion Today | Number 120, September 2019



## Thalassemia

Basel Congress report

Report World Blood  
Donor Day

Member survey and  
strategic planning

Call for nominations for  
prizes and awards 2020

ISBT



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Judith Chapman

## Editorial

Great strides have been made in our knowledge of thalassaemia and this has led to many medical advances for thalassaemic patients. With new understanding of the clinical management of the disease many thalassaemic patients can now live a near normal life. The picture is different in resource poor countries where the majority of patients are children because without proper treatment patients die at a young age. The focus section of this issue of Transfusion Today is on thalassaemia with contributions from across the world, led by the Thalassaemia International Federation (TIF). This not for profit organisation does a fantastic job in championing the requirements of thalassaemic patients including access to a sufficient and safe supply of blood. Other articles include the molecular basis of thalassaemia, transfusion in thalassaemic patients, providing compatible blood for transfusion and complications of transfusion.

This issue also includes articles about the recent congress in Basel; a review of the congress from Rudolf Schwabe co-congress President, an article on the activities for Young Professionals at the congress and some inspirational stories from Harold Gunson Fellowship winners.

Before the congress the ISBT Board spent two days working on the ISBT strategic plan for 2019 – 2022. The Board had access to the membership survey conducted in May 2019. Results of the survey are given in an article on the strategic planning process. The new ISBT vision and revised ISBT mission statement are shared with you in the article.

At the office we are working hard on the upcoming congresses firstly in Bangkok in November and preparing for the 36th International congress in Barcelona next June. Look out for more information about Barcelona in October 2019.

Finally, if you are a member you can help us reach our target of 2000 members this year by encouraging your colleagues to join ISBT. Our society offers excellent value for money with all of our educational material including webcasts and webinars and the live journal club offered free to our members. Spread the word.



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President  
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Greece



**Michael Angastiniotis**  
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## Blood transfusion in the context of thalassaemia

**Thalassaemia refers to a group of conditions affecting production of the haemoglobin molecule. They are the most common monogenic disorders, affecting many thousands of patients globally. Endemic in subtropical malarial regions, they have now reached most of the world through migration. The primary pathology is ineffective erythropoiesis and the primary aim of blood transfusion is both to correct the anaemia and also to suppress endogenous erythropoiesis, avoiding complications such as skeletal deformities due to bone marrow expansion and extramedullary erythropoiesis as well as severe life-threatening anaemia.**

The most severe anaemia presents in beta-thalassaemia in which most patients are transfusion-dependent from infancy. Treatment may require transfusion of 1-2 units of RBCs every 2-4 weeks to maintain a pre-transfusion Hb 9.5 – 10 g/dl. But chronic transfusion exposes the patient to various risks, principally haemosiderosis, alloimmunisation, and transmission of bacterial and viral infectious agents. To avoid such risks, blood establishments follow international guidelines for the detection and elimination of transfusion-transmissible pathogens, for antigen-matching strategies to avoid alloimmunization against RBC antigens, and for applying stringent protective measures in blood processing, storage, and quality assurance programmes for laboratories. Emerging vector-borne infections pose an additional global burden for blood safety, accounting for 17% of all infectious diseases. Haemovigilance is a key component in maintaining blood safety, not to overlook voluntary, non-remunerated blood donation.

Fulfilment of these objectives varies considerably across the globe, mainly in association with social and economic conditions, health infrastructures and health priorities. For example, only 25-40% of countries with a high prevalence of haemoglobin disorders practice haemovigilance, compared to 77% of European countries. And only 1% of the world's blood supply is collected in low HDI countries, where most thalassaemia patients live (WHO data). A TIF survey of 38 treatment centres in 27 countries (2017, unpublished), found a mean HCV infection rate in thalassaemia patients of 9.5% (range 0 to 67%; the highest rates occurred in Iraq). The HBV infection rate was seven times higher in Asia than in Europe and the Middle East. These high infection rates in multitransfused patients reflect poor detection in many countries.

TIF is a non-profit, patient-driven organization founded in 1987 with 204 national thalassaemia associations in 62 countries around the globe. Its mission is to promote national control programmes for prevention and management. Since transfusion is the main pillar of clinical management, TIF is particularly sensitive to the issues of adequate supplies and safe blood. Through its educational programmes, TIF encourages and trains local associations in capacity building and advocacy skills, aiming to promote quality services and national policies. A panel of experts assists this patient-driven organisation in preparing guidelines on all aspects of care, as well as advising on policy development. These activities are promoted through delegation visits to countries, consultancies and writing position papers. One important position paper, "Safeguarding blood safety" - published in 2017 by TIF Executive Director, Dr Androulla Eleftheriou and Dr Constantina Politis, Associate Professor of Medicine, expert in blood transfusion and haemovigilance – stands as a strong indicator of TIF's level of commitment to blood safety.



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## Molecular basis of thalassemia and hemoglobinopathies

**Red cells contain adult hemoglobin which is made up of 2 pairs of alpha globin chain ( $\alpha 2$ ) and 2 pairs of beta globin chain ( $\beta 2$ ). Mutations affect the quantity or amount of alpha- or beta-globin production causing thalassemia. While mutations that affect hemoglobin structure and their functions cause abnormal hemoglobin. Up to now, more than 1,800 mutations causing hemoglobinopathies have been discovered<sup>1,2</sup>.**

### Alpha thalassemia

The Alpha globin genes cluster is located on chromosome 16 and comprises of 4 functional alpha globin genes ( $\alpha\alpha/\alpha\alpha$ ). Large deletion on alpha globin genes is the most common mutation that is found in alpha thalassemia. The loss of one alpha globin gene causes alpha thalassemia 2 or  $\alpha+$ -thalassemia ( $-\alpha/\alpha\alpha$ ) while both heterozygote ( $-\alpha/\alpha\alpha$ ) and homozygote ( $-\alpha/-\alpha$ ) have no clinical symptoms. A 3.7 kb deletion and 4.2 kb deletion are two common types for alpha thalassemia 2. The 3.7 kb deletion has higher frequency than the latter. The loss of two alpha globin genes in cis cause alpha thalassemia 1 or  $\alpha 0$ -thalassemia ( $---/\alpha\alpha$ ). The Southeast Asian deletion ( $--SEA$ ), the Filipino deletion ( $--FIL$ ) and the Mediterranean deletion ( $--MED$ ) are the common deletion types. Compound heterozygous for alpha thalassemia 2 and alpha thalassemia 1 leading to loss of 3 alpha globin genes called Hb H disease ( $---/\alpha$ ) which have mild to moderate symptoms. Homozygous alpha thalassemia 1 ( $---/---$ ) results in deletion or inactivation of all four alpha globin genes leading to a fatal type of thalassemia, hemoglobin Bart's hydrops fetalis syndrome. Non-deletional mutation alpha thalassemias are relatively rare but also present such as Hb Constant Spring (Hb CS), Hb Quong Sze (Hb QS) and Hb Queens Park<sup>3</sup>.

### Beta thalassemia

Beta globin genes cluster is located on chromosome 11 and has two beta globin alleles. Unlike alpha thalassemia, beta thalassemia mostly occurs from point mutation. There are two types of beta thalassemia i.e  $\beta+$  and  $\beta 0$ -thalassemia which reduce amount or absence of  $\beta$ -globin production, respectively. Homozygous  $\beta 0$ -thalassemia ( $\beta 0/\beta 0$ ) and some  $\beta+/\beta 0$  cases cause severe thalassemia while homozygous  $\beta+/\beta+$  thalassemia ( $\beta+/\beta+$ ) moderate severity. Abnormal hemoglobins caused by point mutation are also common such as hemoglobin S (Hb S) and hemoglobin E (Hb E). Mutations on other genes of  $\beta$ -globin cluster including  $\gamma G$ ,  $\gamma A$  or  $\delta$  globin also have an effect on hemoglobin productions.

These mutated alpha- and beta- globin genes in different combinations lead to over 60 thalassaemic diseases<sup>4</sup>. The degree of disease severity depends on the complexity of the interaction of the genes and even patients with apparently identical genotypes can have remarkably different levels of severity. This can lead to the difficulty in the identification of high-risk pregnancies and to give appropriate genetic counseling for both treatment and prenatal diagnosis.

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# A 10 year experience of thalassaemia at a tertiary care hospital



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**Thalassemia is one of the most common inherited hemoglobinopathies in the world. In Thailand, hemoglobin E- $\beta$ 0 thalassemia and homozygous  $\beta$ 0-thalassemia are the commonest forms of chronic transfusion-dependent thalassemia with more than 700 patient deaths per year.1 Alloimmunization can lead to serious clinical complications in transfusion-dependent patients. Some alloantibodies may cause hemolytic transfusion reactions which are clinically significant.2 In addition, RBC autoantibodies can result in hemolytic anemia and cause problems in cross-matching. Thus, presence of these antibodies is not only a laboratory problem but can also delay the availability of “compatible” blood for scheduled transfusion.**

Currently, there are guidelines in Thailand for prophylactic antigen-matching for Rh (C, c, E, e) and Mia antigens to prevent alloimmunization in thalassemia patients.3 In our hospital, the policy since 2008 has been to match RBC antigens for at least C, c, E, e and Mia antigens, in addition to the routine ABO and RhD matching. We retrospectively examined the transfusion request records of 383 thalassemia patients (178 males and 205 females) during a period of 10 years from 2008 to 2017. We demonstrated that the RBC alloimmunization rate in thalassemia patients was 19.3% in this cohort. Some patients tested positive for more than one antibody type. Autoantibodies were detected in 9 individuals. Anti-E (49, 39.5%), anti-Mia (24, 19.4%) and anti-c (19, 15.3%) were the most common antibodies detected. A high rate of alloimmunization was found in splenectomized patients. Risk of alloimmunization increased when more total units of blood had been transfused. A trend toward low alloimmunization rates (5/143 patients; 3.5%) was noted in the antigen-matched (C, c, E, e) RBC group, which agrees with reports by other groups (2.8-4.8%).2,4 Anti-E and anti-Mia were identified in this group which may be naturally occurring antibodies. However, other than these antibodies, immune RBC antibodies were not detected in the antigen-matched RBC group in the current cohort within the observation period of 10 years. In contrast, immune RBC antibodies were detected in 4 of 75 patients who had received Rh-antigen partially matched RBCs; 2 anti-E and 2 anti-c. In addition, 3 of 101 who exposures Mia alloantigen were detected anti-Mia alloantibodies.

In our cohort, however, many patients who received one or more antigenic exposures did not form detectable RBC alloantibodies.

At the present, it remains unclear whether “non-responders” who do not develop RBC alloantibodies are tolerant of all or some of the transfused antigens, or whether their immune systems are simply ignorant of the antigen exposures. Several studies of responder and non-responder patients have focused on general descriptions of immune cell subsets. Schonewille and colleagues5 proposed that some recipient HLAs such as HLA-DRB1\*15 may be markers of hyper-responder patients. In addition, a current study by Tian and colleagues6 revealed that HLA-DRB1\*09:01 is associated with anti-E immunization. In this regard, future study of non-responsiveness may be as useful as understanding responsiveness.

In conclusion, the alloimmunization rate in Thai thalassemia patients who are on repeated transfusion therapy is high. The most common alloantibodies were anti-E followed by anti-Mia and anti-c. Provision of at least Rh and Mia antigen-matched leukocyte-reduced RBC transfusion may minimize the risk of the formation of RBC alloantibodies and improve the efficiency of transfusion in thalassemia patients.

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# Complications of transfusion-dependent beta-thalassemia

**The thalassemias constitute a variable cluster of anemias characterized by a deficiency that affects the hemoglobin synthesis in one or more of its globin subunits. Besides an  $\alpha/\beta$ -globin chain ratio imbalance, the hallmarks of the disease include ineffective erythropoiesis, chronic hemolytic anemia, and iron overload. The thalassemia spectrum is clinically divided into two main categories based on the patient's need of blood transfusion: Transfusion Dependent Thalassemia (TDT) and Non-transfusion dependent thalassemia (NTDT). In patients with TDT, the culprit of disease process is secondary iron overload from regular transfusion therapy, which can lead to organ damage and failure especially in the heart, liver, and endocrine glands.**

Cardiac iron accumulation is the single greatest factor for cardiac dysfunction in TDT patients. This occurs due as a result of the production of NTBI which damages the cardiomyocytes, triggering cardiac dysfunctions, arrhythmias, and if not reversed, myocardial fibrosis. Iron overload in the liver is the major causative factor of liver disease in these patients. Chronic liver disease may lead to cirrhosis and hepatocellular carcinoma. Other possible hepatotoxic cofactors should be kept in mind. Endocrine abnormalities are the most common complications in patients with TDT. These include growth retardation, delayed puberty and hypogonadism, hypothyroidism, impaired glucose tolerance and diabetes mellitus, hypoparathyroidism, and adrenal insufficiency. Evidence of proximal tubular damage has also been observed in TDT patients. Many studies have reported increased urinary excretion of several markers of proximal tubular damage in TDT patients. Both IOL and chronic anemia explain tubular dysfunction in TDT patients. Chronic anemia and hypoxia are also associated with oxidative stress, lipid peroxidation, and functional abnormalities in tubular cells.

Advances in the management of thalassemia have prolonged the survival of patients but could not fully eradicate the underlying pathophysiology. As such, with advancing age, several morbidities kept on emerging at a higher incidence. This increase in life span has paved the way for the development and subsequent diagnosis of more cancers. We are therefore now seeing several cases of solid and hematological malignancies in our TDT patients. Different risk factors put these patients at greater risk of cancer development compared to the general population. These include iron overload induced oxidative damage and immunologic aberrancies, immunomodulation caused by transfusions, viral infections, hydroxyurea use, and bone marrow stimulation due to chronic anemia.

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## Blood transfusion therapy for $\beta$ -thalassemia major in China

**Thalassemia is a disorder with hereditary hemolytic anemia caused by partial or complete inhibition of globin peptide chain synthesis in hemoglobin (Hb), resulting in ineffective erythropoiesis. China is one of the countries with high prevalence of thalassaemia, especially in Guangdong and Guangxi provinces where the frequencies of  $\alpha$ + $\beta$  globin gene deficiency was reported as high as 12.78% and 24.14%, respectively. The number of thalassaemia cases in these two provinces accounted for more than 40% of cases all over the country. Thalassaemia is also one of the leading causes for birth defects and perinatal infant deaths in both provinces.**



A child with thalassemia is transfusing in hospital



A donor is donating her blood for the first time in Guangzhou Blood Center

Currently, the only available cure for  $\beta$ -thalassemia major is stem cell transplantation. However, it is not available for some of individuals with this disease due to high cost of the treatment, limitation on medical-technology and the lack of the HLA-matched stem cell donors. Therefore, regular blood transfusion is still a mainstay of therapy for patients with  $\beta$ -thalassaemia

major in China. Transfusion therapy is aimed at maintaining Hb level of the patients approximate to normal level, improving the oxygen carrying capacity and suppressing the production of defective red blood cells by the patient's own bone marrow. Generally transfusion should be given when Hb is below 90g/L using 0.5-1 unit red blood cells (1 unit red blood cells is defined as preparation by 200 ml whole blood)/10 kg once every 2 to 5 weekly with the goal of maintaining Hb of 90-140g/L as well as promoting growth and development of the children, ameliorating daily physical activities and minimizing the transfusion-related iron load in patients. Appropriate red blood cell components should be selected according to the antigenic characteristics of red blood cells with matched ABO and Rh (D) should be transfused to the patient and, if available, phenotypically matched C and E antigens or kell subtype is a better option to avoid the risk of alloimmunization. Treatment for iron chelation should be initiated when transfused after the first 10 times, patients with serum ferritin levels are above 1000ug/L or liver iron concentration(LIC) levels are 7 mg/g dw or higher. Serum ferritin or LIC of the patients should be monitored every 3-6 weeks after the initiation of iron chelation therapy. Iron chelators could be suspended when serum ferritin level is below 1000ug/L or LIC level is 7 mg/g dw or lower.



### Dear ISBT members,

Time seems to go particularly fast during this part of the year, but I guess it depends on where on our globe you are based. For those of us who just came back from relaxing summer holidays, the new energy gained will help kick-start our brains for a new season of service in the blood community. As it happens, there is a lot going on also at ISBT.

Most intensely, we are currently preparing for the upcoming regional ISBT congress in Bangkok, which promises to be an exciting one. Together with our Thai hosts, we are making sure that the scientific, educational and social programs are as good as you have come to expect from us. Either you were among those who submitted an abstract to the meeting, or not, we hope to see you at the meeting in November to continue learning about all the new things happening in this dynamic part of the world. I am looking forward to heated discussions and a good deal of chili factor in the Thai capital in a few months' time.

I also hope you took some time to give us feedback on the recently held regional congress in Basel, Switzerland, so that we and our partners can improve further. In my view, the meeting was a great success with a total of 2,865 attending participants from 105 countries. The venue was perfect for a congress of our size and the nicely air-conditioned session halls and showrooms kept delegates alert despite the European heatwave we experienced. Whilst a good way to remain cool, I am also convinced that the scientific program and our

exhibitors were the real focus of attention. In case delegates were still too hot after an intense day at the convention centre, many of us discovered that it was fully possible to take a chill pill by walking towards Germany, throwing ourselves in the river Rhein and subsequently float towards France while enjoying the sights of downtown Basel.

During a two-day meeting prior to the congress, the ISBT Board met in the village of Bad Bubendorf outside Basel to develop the new strategic plan which will guide our society for the coming five years. This task was started already during the autumn of 2018 and is scheduled to be presented later in the year. Already now, there is an outline of the main features agreed, about which you can read in a separate article in this issue, including our new vision "A World of Safe Blood".

As you will see, the theme of this issue concerns one of our most delicate blood consumer groups, namely the thalassemia patients. As you know, there are many things to consider when transfusion therapy may be a life-long project, starting from a young age. In a series of articles, you will be able to read more about different aspects of this work, including clinical challenges, molecular basis of the disease(s), specific problems faced in developing countries, immunization risks, iron overload and other complications particularly in focus for this vulnerable category of patients. Let's help improving the transfusion care required for the well-being of numerous thalassemia patients worldwide by fulfilling ISBT's vision. Thanks for your support of ISBT!



Martin L. Olsson  
ISBT President

# Welcome to our new members

## (June 2019 - August 2019)

### Africa

- **CAMEROON:** Geukeng Dongmo Elvige, Yokyu Estel
- **CONGO:** Mussa Bashizi Fiz
- **KENYA:** Daxton Mwangi
- **NIGERIA:** Oreofe Lala, Chukwudi Aleke, John Onuche, Adeyanju Adeteju

### Americas

- **ARGENTINA:** Gabriela Celeste Marcarian
- **BRAZIL:** Aline Pimenta Ache
- **CANADA:** Lani Lieberman
- **CHILE:** Maria Nunez, Enrique Villagra
- **MEXICO:** Lucia Zamudio
- **USA:** Andrea Ott Vasconi, Uddyalok Banerjee
- **URUGUAY:** Ismael Jorge Rodríguez Grecco

### Eastern Mediterranean

- **BAHRAIN:** Sharifa Almannaei
- **EGYPT:** Ahmed Sami Elebshehy, Haitham El Ashry
- **IRAN:** Elahe Khodadi, Arezoo Darbandi
- **JORDAN:** Jamil Ibrahim Abuhammad, Asia Adwin
- **PAKISTAN:** Huma Mansoori, Bushra Moiz
- **SAUDI ARABIA:** Wasef M Shafiq Alhaj Yousef, Huda Hawsawi, Naelah Alghamdi
- **SUDAN:** Mohamed Idris
- **UAE:** Farheen Alam

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- **ALBANIA:** Zhaneta Abazaj
- **BELGIUM:** Emmanuel Lesaffre
- **CYPRUS:** Elena Novichenko, Christiana Fiakkou, Androulla Panagiotou
- **GEORGIA:** Leila Akhvediani
- **GERMANY:** Lukas Quidenus, Peter Ascher, Joachim Mandler, Christian Schulz-Huotari, Jana Höckner

- **GREECE:** Georgios Kaltsounis, Ioanna Stergiou
- **ICELAND:** Anna Margret Halldorsdottir
- **ITALY:** Silvia Delodovici, Maurizio Angeleri
- **KAZAKHSTAN:** Yerbol Kuanyshev, Bizada Syzdykova
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- **NETHERLANDS:** Daniyar Aznabekov, Laxman Edirisinghe, Arlinke Bokhorst, Nieke Halma
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- **UKRAINE:** Oleksandr Serhiilenko
- **UNITED KINGDOM:** Evelin V Chiroma, Aadil Bachh

### South East Asia

- **INDIA:** Sumit Gupta, Suvro Sankha Datta, Athira Sasidharan, Saravanan Srinivasan, Vipul Bhriagu, Neelima More, Pranita Sontakke
- **INDONESIA:** Lilis Wijaya
- **MYANMAR:** Khatta Wintshein, Thant Zin
- **NEPAL:** Gopi Aryal

### Western Pacific

- **AUSTRALIA:** Susan Dalkie, Qin Yao, Jacoba Von Wielligh
- **CHINA:** Bin Li
- **JAPAN:** Fumie Nakazawa
- **MALAYSIA:** Saliz Mazrina, Nor Amiza
- **PHILIPPINES:** Jonnah Chu, Anner Rodavia, Kenneth Aristotle
- **SINGAPORE:** Pei Huey Shu
- **SOUTH KOREA:** Soyoun Kim
- **TAIWAN:** Josephine Cheng

# ISBT Awards and Prizes 2020

## Your opportunity to apply or nominate

### ISBT Presidential Award

All ISBT members are invited to propose candidates for the ISBT Presidential Award which will be granted in 2020 at the 36th International Congress of the ISBT in Barcelona, Spain. The Foundation Transfusion Medicine grants this Award to a senior person who has made eminent contributions to transfusion medicine or a related field through original basic or applied research, the practice of transfusion therapy or through significant educational and/or service contribution to the field. A short curriculum vitae of the proposed candidate and a description of his/her contribution in transfusion medicine, accompanied with three signatures of ISBT members who support the nomination, should be sent to the Secretary-General of the Foundation, Henk Reesink, email hwreesink@gmail.com. The Nomination Committee (consisting of the ISBT President, the ISBT President-Elect, the Scientific Officer of the ISBT, the Chairman, and a member of Board of the Foundation Transfusion Medicine) will decide which candidate will be nominated.

*The deadline for proposing candidates is October 27, 2019.*

### Jean Julliard Prize

The Jean Julliard Prize recognises clinicians or scientists who are less than 40 years of age and have a noteworthy portfolio of recently published work contributing to advances in transfusion medicine. The prize of € 5,000 is open to members and non-members of the Society under the age of 40. Normally the Prize will be awarded to one individual. However, in special cases, the Prize may be shared. The Prize will be awarded during the 36th International Congress of the ISBT in Barcelona, Spain. The successful candidate will be required to give a presentation on their submission during the Congress. Travel, registration, and accommodation costs for the congress will be covered by ISBT. Candidates should forward a copy of their submission to the ISBT Office (office@isbtweb.org) with Jean Julliard Prize as the subject heading. Regulations for the format of submissions are provided on the ISBT website.

*The closing date for submission is December 14, 2019.*

*“Receiving the Jean Julliard Prize has been a tremendous honor which has boosted my career as a young investigator. Furthermore, it has validated the importance of the scientific work and strengthened the relations with the international scientific blood transfusion community.” Rick Kapur (Amsterdam, the Netherlands)*

### ISBT Developing Country Award

Applications are invited from Blood Services/Centres from a qualifying developing country for the ISBT Award for Developing Countries. Applications should be from a Blood Service/ Centre from a developing country that has made a significant contribution in strengthening Blood Transfusion Practice within the country. Qualifying developing countries will be those that are considered low or lower middle income according to the World Bank index. The Award will be in the form of full sponsorship for two delegates from the Blood Centre to attend the 36th International Congress of the ISBT in Barcelona, Spain (airfares, registration, accommodation and per diem). The award also includes sponsorship of an education symposium in the country of the winning applicant (value €10,000). The Award winner will be presented with a certificate at the Opening Ceremony of the 36th International Congress and will be expected to give a presentation in one of the scientific sessions. Applicants should forward a copy of their submission to the ISBT Office (office@isbtweb.org) with Developing Country award and the name of the country as the subject heading. The Award regulations, the procedure for applying, and the application form can be found on the ISBT website.

*The closing date for submission is December 14, 2019.*

*“The award is a landmark achievement for our department. It is a great honour for us to get international recognition for our concerted efforts to improve blood safety in the region. It would serve as an inspiration to further strengthen the quality of our blood transfusion services. Our heartfelt gratitude to the ISBT for its support and encouragement to the developing countries.” Neelam Marwaha (Chandigarh, India)*





**Rudolf Schwabe**  
Congress President Basel, Switzerland

## Basel congress report

**I had the idea of bringing the ISBT congress back to Switzerland after so many years quite early on. The first exploratory talks with a small group of people resulted in by all means positive, keen feedback. Shortly afterwards, it was decided to prepare an application dossier and present this in Dubai.**



The local authorities in Basel were very supportive in helping us realise the event: finding conference venues, hotel rooms, catering and a worthy social programme for nearly 2900 (!) participants from around the globe is quite a challenge in a small country like Switzerland. Everything went perfectly and things had been organised around one year ahead of the congress. The scientific programme, on the other hand, wasn't completed until shortly before the actual congress.

For my co-congress president Behrouz Mansouri and myself, the scientific programme was something special this time round: a number of speakers "thought outside the box", as it were, widening horizons and perspectives so that the discussions were much broader than before. The topics themselves also helped people think about the future, especially the aspect of technology transfer in countries with few resources in "Bridging the Gap", or discussions of the opportunities offered by and risks involved with "Big Data". As a scientist, I was of course very interested in these debates and for me they were the key sessions of the programme.



Unlike Toronto, we had exceptionally good weather and all of the participants enjoyed the warm summer air in the compact city of Basel: many of them were surprised by how small our congress venue was – all of the locations and sites for the social programme were within walking distance of each other! Obviously, quite a few congress participants were amazed by the numerous swimmers in the Rhine, and one or two of them even took the plunge themselves into the cool, clean water and let the city of Basel glide by.

I have to admit that one of my personal highlights at the end of the congress was the unscheduled send-off for Behrouz and myself. Behrouz will soon be leaving the Inselspital in Bern following his retirement and last summer I stepped down from my post as the Director of Swiss Transfusion SRC. This meant that "Basel 2019" was a farewell from the international transfusion stage for us both, a world in which we were at home for many years and that has bestowed a number of valuable encounters and inputs upon us. Which is why it was very important for us both to say goodbye to our international friends as hosts of the ISBT congress in our home country. Looking back over these eventful, exciting and enjoyable days in Basel, all that remains for me to say is thank you to everyone who helped us make Basel the success we always hoped it would be. Special mention should be made of Judith Chapman and her crew, of John Semple, of MCI for the perfect organisation, and a very special thank you to Anka Stark and the entire organising committee.



Thanks to their help, the city of Basel – which is my home town – will now be inextricably linked with the 2019 ISBT congress in my memories!

## Harold Gunson Fellowship reports from Basel

**The Harold Gunson Fellowship gives doctors and scientists an opportunity to attend ISBT congresses. The fellowship is available for everyone, who is 40 years of age or under at the date of the first day of the congress and is the first, submitting and presenting author of an abstract which has been accepted for the scientific programme. For each congress, a selection is made based on the abstract scores, the motivation letters and a fair geographic distribution.**

**Here is a selection of the impressions of some Harold Gunson Fellowship winners of the most recent 29<sup>th</sup> Regional Congress of the ISBT in Basel, 2019.**



**Carolina Trucco Boggione**  
IDICER-CONICET  
Laboratory of Immunohematology,  
National University of Rosario, Argentina

*"I have been doing research about blood group genomics. Many times I had to correlate pheno- and genotype to identify a donor or a recipient correctly and, as the speakers said during the Interactive session: "Immunobiology-Blood Group Genomics: A Debate", there are two sides of a coin to get to a safe and effective transfusion therapy. I found these presentations and the cases exposed really interesting and valuable. Having the chance to listen to these great scientists experiences, was very useful for daily practice and to evaluate the way we approach particular cases in our laboratory. I also would like to highlight that I met amazing people during the congress and that I had the chance to connect for future collaborations.*



**Parinaz Zarghamian**  
Iranian Blood Transfusion Organization, Tehran, Iran

*"I really enjoyed the various subjects addressed at the congress including basic science research with relevance to transfusion medicine, clinical and epidemiological studies, as well as blood supply management. During the congress, I had attended mainly sessions on cell therapy and genome editing technologies. I found the advances in gene manipulation for different haemoglobinopathies like thalassemia and sickle cell disease very interesting. A great social activity during the congress was the breakfast for young investigators to meet with transfusion medicine experts. In addition, the lunch to welcome the Harold Gunson Fellowship winners allowed me to meet other young scientist, the ISBT board and to feel welcome at ISBT from the first moment. "*



**Pierre Cappy**  
Institut National de la Transfusion Sanguine (INTS), Paris, France

*"Regarding the global conference programme, I found it diverse and covering the whole transfusion medicine area. I really appreciated sessions including feedback from field experiences, namely in low-income countries, e.g. 'Applying drones to supply blood to remote areas, South Africa's experience' and 'Ending AIDS in Africa, vision or illusion', for which I really want to congratulate the speakers. In addition, I found interactive sessions extremely useful to evaluate one's knowledge; In particular, I attended the 'Management of Transfusion-transmitted Infections' held on Sunday, 23, and found it very interesting."*



**Yan Quan Lee**  
Department of Laboratory Medicine, Lund University, Lund, Sweden

*"The wide range of talks provided a bird's eye view of the diverse needs and innovations in the field - truly, from the laboratory bench to the patient's bedside and much further beyond (by drone!). As a basic researcher in transfusion medicine, I particularly appreciated the academy day. Each topic was explored in detail by several experts, giving me the opportunity to acquire a solid foundation of knowledge. Cutting-edge research such as using machine learning to predict and treat hypotension before it occurs underlined how fast the medical practice is changing."*



**Rizwan Javed**  
TATA Medical Center, Kolkata, India

*ISBT 2019 in Basel was memorable because it was my first ISBT Congress and I was immensely happy to be awarded the Harold Gunson Fellowship. I was privileged to meet scientists, doctors and technologist from all over the world. The scientific talks were very enlightening, as I was introduced to innovative ideas in Cellular therapy, Megakaryocyte cultures and Invisible Organs. I was inspired by the humility of the ISBT President and his non-stop encouragement of Young investigators. I was excited to attend events like Pitch a research idea, speed dating and Breakfast with your mentor. Overall, the Harold Gunson Fellowship was instrumental in connecting me with the diverse and big global family of Transfusion Medicine.*

# Young Professional activities at the 29<sup>th</sup> regional congress of the ISBT Basel, Switzerland 22-26 June 2019



**Satyam Arora**  
Chairperson Young Professional Council (South-East Asia Representative)

The 29th Regional Congress of the ISBT in Basel provided yet another opportunity for young professionals to share their research experience, advance their knowledge and network with other participants from all around the world. The ISBT Young Professionals Council (YPC) has been busy preparing for dedicated young professional activities for the congress and presented its report of achievements (since its establishment in 2018) as well as plans for the future to the ISBT Board. The congress featured many activities tailored for young professionals aiming at enhancing their experience during the congress. The congress program had information about the young professional activities on a dedicated page on the congress book as well as on the website. Professional development



This year, 137 (18.9%) of total 724 submitted abstracts were from young professionals. Out of these, 27 were awarded with an oral presentation, 94 were selected for poster presentation and 16 were rejected. These figures are similar to last year's Toronto congress where a total of 215 (22%) abstracts were submitted by young professionals. The Basel abstracts are published as a special issue of journal Vox Sanguinis (volume 114, Issue S1, 2019). Members of the ISBT Board and the Young Professionals Council had the opportunity to meet and congratulate this year's 13 Harold Gunson fellowship winners during the Harold Gunson lunch. During the congress, there were three workshops on topics relevant to young attendees: the "Fundamentals of Good Grant Writing" by Imelda Bates, "How to Improve Your Scientific Writing" by Bob van der Laaken and "Pitch your research idea" by Henrik Ullum, Ellen van der Schoot and Jill Storry.

### Networking and Social Activities

The congress venue featured a "Young Professional Space" for the Young Professionals Council members to enable them to meet

and interact with young professionals attending the congress. The council members made themselves available at this dedicated booth during lunch and coffee breaks throughout the congress. Specially designed pins were also given to the young professionals. During the opening of the Exhibition on Sunday, the Young Professionals reception was held with drinks and snacks.

Also, it was the very time that "Young Investigator Speed-Dating" event was organized, where young attendees could sign up to have a short talk (speed date) with a representatives of the ISBT Board, Young Professionals Council, the ISBT Academy, the ISBT Working Parties and the Vox Sanguinis Editorial Board. The aim of this session was to increase the awareness of different ISBT activities. The attendees had discussions on the functions of each representative within ISBT, and the different opportunities for YPs within the society.

In line with previous congresses, the young investigators had a networking breakfast to enable them to meet and network with mentors and different transfusion medicine experts. The Council members also participated at the early morning ISBT run alongside the Rhine River, which made the Basel congress unforgettable. In addition, live updates on the various activities during the congress were given on diverse social media utilizing the hashtag #ISBTYoungBlood.

Follow the Council's hashtag #ISBTYoungBlood on Facebook, Twitter, Instagram and LinkedIn for updates on the council activities. Your participation and engagement matters!

*"Sometimes the most ordinary things could be made extraordinary, simply by doing them with the right people" - Nickolas Sparks*



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## Basel congress webcast schedule

A selection of congress webcasts that were recorded at the 29<sup>th</sup> Regional Congress of the ISBT in Basel will be available soon on ISBT Education.

Please find the full schedule of the release dates below:

Sessions	Speakers	Available on
Academy Day: Immunohaematology / Transfusion challenges in patients with sickle cell disease	Vincent Thornier Claudia Folman Sara Trompeter	22/07/19
Academy Day: Artificial Intelligence & Ethics	Bart Geerts Peter Flanagan	05/08/19
Academy Day: TTID / Management of Transfusion-transmitted infections	Evan Bloch Tanya Vollmer Miquel Lozano	19/08/19
Academy Day: IT and Novel Technologies / Novel Technologies for Transfusion Medicine	Henrik Gaedt Jensen Jonathan Louw Linda Lodge	02/09/19
Plenary Session: Bridging the Gap	Kathryn Maitland Samia Hurst Majno Andreas Greinacher	16/09/19
Young Investigators - Excellence in Transfusion	Syeldy Langi Sasongko Joseph Dowsett Junpeng Zhao Sanne de Bruin Georgios Kaltsounis Loann Raud	30/09/19
Plenary: Big Data	Willem Ouwehand Andre Franke Nareg Roubinian	14/10/19
Plenary: A glimpse of the Future	Rainer Blasczyk Daniel E. Bauer Franck Zal	28/10/19



## ISBT strategic planning 2019 and the results of the member survey 2019

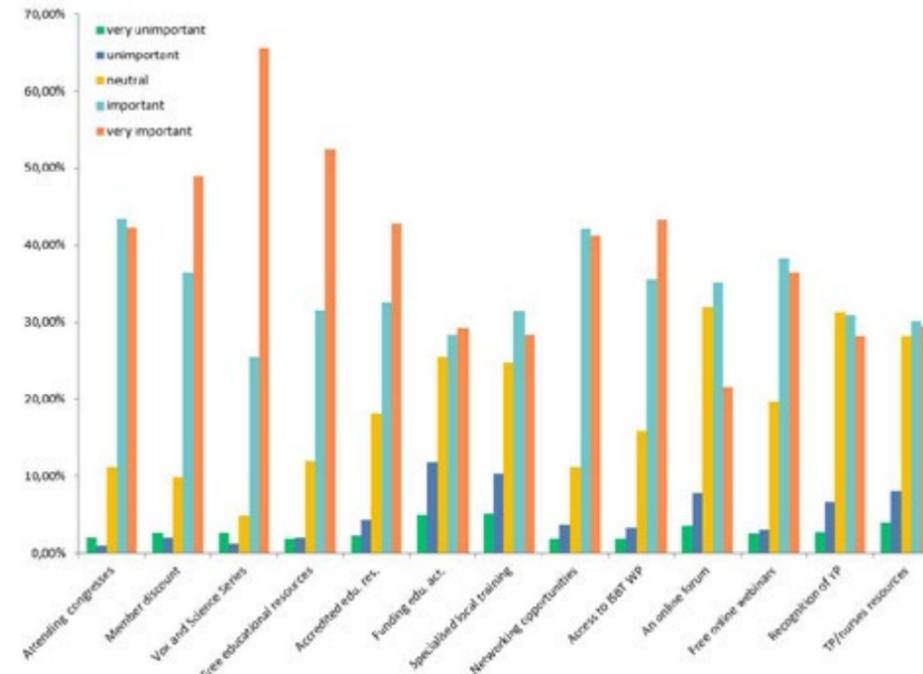


Fig 1

receive final agreement by the Board at its meeting in November in Bangkok, but ISBT President Martin Olsson announced at the opening of the Basel congress that the Board had agreed a vision statement and a revised mission statement.

### Vision

Promoting a world of safe blood.

### Mission

ISBT is the global community of professionals promoting evidence-based transfusion medicine

- providing an arena for advancing science and sharing knowledge
- transforming theory into practice by facilitating education and training
- advocating for the welfare of blood donors and safe patient outcomes

More information will be included in the December issue of Transfusion Today.

### Member survey 2019

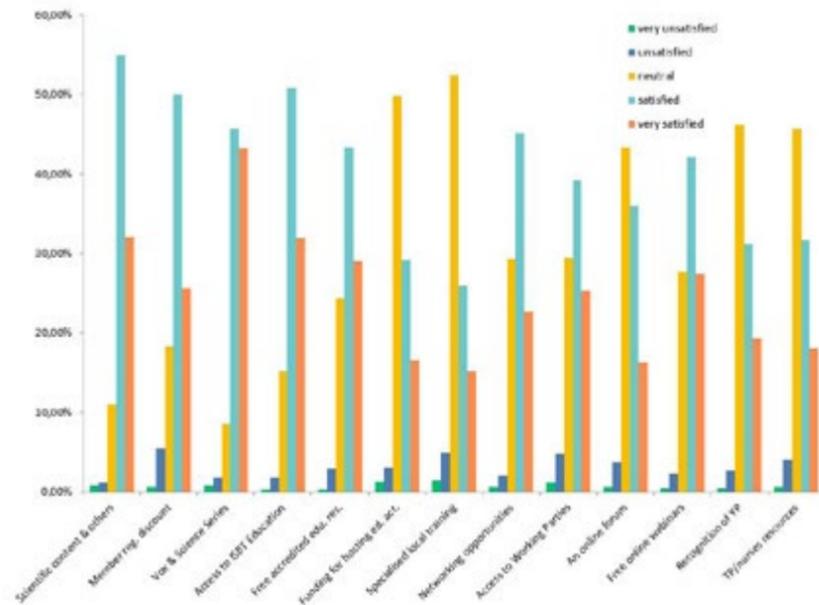
During its discussion the Board took into account the feedback from the survey of ISBT members. The purpose of the survey was to gain an insight into members opinions on the importance of various aspects of the current strategy and their satisfaction with ISBT's performance. The survey was sent to 2,133 members, 682 (32%) responded.

The first question focused on how important various aspects of ISBT's activities were to the member. The results are presented in figure 1.

### Strategic planning

The ISBT Board and a representative from the Young Professionals council met on retreat for two days just before the congress in Basel to work on the ISBT strategic plan for the period 2019 – 2024. The word retreat means to go away to a place where you can be alone or to get away from it all. The Board stayed in a hotel on the outskirts of a village about 20 kms from Basel and completely focused on strategic planning for 8 hours each day and discussions of course continued over breakfast and the evening meals. Work on the plan started on Tuesday evening and finished on Thursday evening. The sessions were facilitated by an external expert. The strategic plan together with the implementation plan will

Fig 2



The results indicated that access to ISBT's journals, access to free and accredited educational resources, access to working parties, attending congresses, networking opportunities and access to free webinars were the top 8 activities offered by ISBT. The second question asked how satisfied members were with the way ISBT offers its current activities. The results are presented in figure 2.

The results showed that members were satisfied with the scientific content of our congresses, the member discount, ISBT's scientific journals, access to free and accredited education resources, networking opportunities and free online webinars.

Question 3 gave respondents the opportunity to indicate how important it was to them for ISBT to offer various services. The results are shown in Fig 3.

The results showed that the top 3 most important resources that ISBT can offer in the future are educational courses, certified educational material and the provision of guidelines.

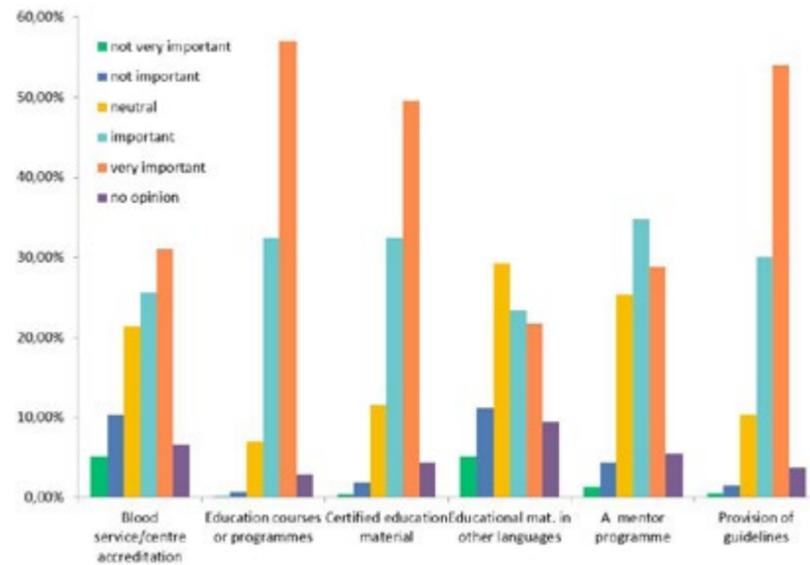
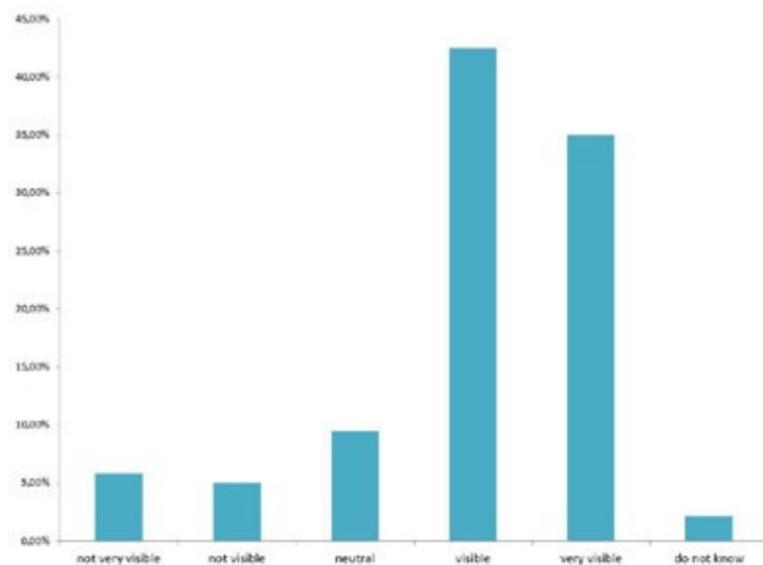


Fig 3

Fig 4



The final question asked how visible ISBT is considered compared to other national societies. The results are shown in fig 4 and indicate that the respondents were of the opinion that ISBT was visible or very visible compared to other national societies.

# ISBT signs Memorandum of Understanding (MoU) with the Chinese Society of Blood Transfusion

ISBT has MoU's in place with two blood transfusion societies; AABB and the Africa Society of Blood Transfusion and a third MoU was signed during the 29th regional congress of ISBT in Basel. Since ISBT's 28th regional congress held in Guangzhou, China, in conjunction with the Chinese Society of Blood Transfusion (CSBT) the two societies have been working together on preparing an MoU. The MoU was signed at the 29th congress of the ISBT in Basel during a meeting between the two societies.

The MoU will be in place for five years and recognises that each organisations mission, aims and activities have common elements that provide a potential for synergy. Outcomes of the MoU include observer status on relevant working parties, a scientific session at the CSBT biannual congress and the exchange of educational materials where appropriate. ISBT and CSBT look forward to a fruitful cooperation over the next five years.



President CSBT YongMing Zhu and President of ISBT Martin Olsson with representatives from CSBT and ISBT.



**David Roxby**  
SA Pathology, Australia

## Transfusion workshop Johor, Malaysia 2019



**The transfusion medicine workshop conducted in Johor Bahru, Malaysia was a collaborative effort by Associate Professor David Roxby (Flinders Medical Centre), Dr Lydia Singaraveloo Haematology registrar (Flinders Medical Centre), and Transfusion Medicine Advisor Dato. Dr Singaraveloo Muthusamy, internal medicine physician (Johor Specialist Hospital). The aim of this workshop was to promote a better understanding of basic transfusion medicine and improve transfusion practice in the region and Johor Specialist Hospital.**

The general transfusion quiz at the start of the workshop was well received and both clinicians and laboratory scientists were able to clarify doubts in immunohaematology. Participants actively involved in case discussions and contributed to the discussion by providing relevant input on problem solving. In addition, participants were able to build a professional network to improve collaboration between the blood transfusion service and the clinical team.

A total of 35 participants including transfusion laboratory scientist and technologist, medical officers, nursing staffs and medical students attended the 2 day workshop on June 15 – 16, 2019. The workshop covered a range of topics including introduction to clinical and laboratory transfusion practice, patient blood management, effects of storage on red cells, the direct and indirect Anti-globulin test, blood group anomalies and antibody investigations, red cell genotyping, transfusion in elderly and neonates, clinical and laboratory management of transfusion reactions, antenatal blood group serology and haemolytic disease of the newborn, autoimmune haemolytic anaemia and case studies.



30th Regional Congress of the ISBT  
In conjunction with the National Blood Centre, Thai Red Cross Society  
Bangkok, Thailand, November 16 – 19, 2019



### Upcoming key dates

- Deadline Early Registration Fee: October 10, 2019
- Deadline Late Registration Fee: November 7, 2019
- Onsite fee applies as of November 8, 2019

### Key Features Scientific Programme

#### Plenary sessions

- New insights in immunohaematology
- Perspectives on Hepatitis, Zika and Dengue
- An update on stem cells and cellular therapy
- The hidden world of platelets and megakaryocytes

#### Parallel sessions scientific

- Apheresis, TTI and emerging diseases, donor management, best young investigators abstracts, pediatric and perinatal transfusion, immunohaematology and molecular testing, blood cell immunology, haemoglobinopathies, adverse events and haemovigilance, the hidden world of platelets and megakaryocytes.

#### Academy (educational sessions)

- Thalassemia, quality management, Immunohaematology MNS, Haemovigilance, Patient Blood Management, TTI, Ethics

#### Workshops

##### Molecular typing of human neutrophil antigens workshop

This workshop is organised by the ISBT Working Party on Granulocyte Immunobiology. The molecular characterization of neutrophil antigens by genotyping techniques has expanded our diagnostic tools. Moreover, the typing of human neutrophil antigens is important to identify allele frequencies and to facilitate the prevention and management strategies of allo- and autoimmune neutropenia. This workshop aims to educate the participant in the field of granulocyte immunology, serology and HNA genotyping. The workshop is scheduled to take place on November 14-15 at the Faculty of Allied Health Sciences, Thammasat University, Rangsit Campus.

##### Workshop on GMP/GP standards and their implication for the safety of blood and blood components

The workshop is organised by the ISBT Working Party on Quality Management, together with the EuBIS Academy and IPFA. The seminar will comprise lectures and group work in a face-to-face

fashion based on cases covering several aspects of GP and GMP such as: GP Guidelines, Inspection/Audit, Validation, Change Control, Corrective actions, Risk Assessment. The workshop will be held on November 18.

#### Career development in transfusion medicine for young professionals

The workshop will be hosted by Veera Sekaran Nadarajan. Veera currently holds the positions of Associate Professor at the Department of Pathology, University of Malaya as well as the Head of the Department of Transfusion Medicine at the University Malaya Medical Centre. He has more than 20 years of experience, with diverse research interests that include blood group serology, blood donor care and molecular haematology. The workshop will be held on November 17.

#### Writing successful transfusion research grant applications

How do you write a good research grant proposal? A successful grant proposal is more than an excellent scientific research idea. The idea needs to be written in a clear and compelling manner with realistic objectives, state-of-the-art methodology and a well-structured work plan and budget. Moreover, the proposal needs to be tailored to each funding organization. The workshop will be hosted by Erica Wood and will be held on November 19.

For more information on the workshops, please visit <http://www.isbtweb.org/bangkok/scientific-programme/workshops/>

#### Young Investigators Breakfast

The Young Investigators breakfasts have become a feature of ISBT congresses. The breakfast gives the opportunity for young professionals to share their research practice, ideas, challenges and successes with expert international mentors. The breakfast will take place on Monday November 18.

For more information please visit <https://www.isbtweb.org/bangkok/scientific-programme/breakfast-sessions/>

**Join us in Bangkok:**  
[www.isbtweb.org/bangkok](http://www.isbtweb.org/bangkok)

**Early Registration: October 10, 2019**



**Clarence Lam**  
Chairman of the Hong Kong  
Association of Blood Transfusion  
and Haematology

## Regional haemovigilance workshop in Asia

**A Haemovigilance Workshop for the Asia region was held on May 18, 2019 in Hong Kong Special Administrative Region (SAR), China. The Workshop was organized by the Hong Kong Association of Blood Transfusion and Haematology (HKABTH) under the auspices of the International Society of Blood Transfusion (ISBT), collaborating with International Haemovigilance Network (IHN). The objectives were to promote the understanding of the importance and benefits of a haemovigilance programme, to facilitate the establishment and maintenance of a haemovigilance programme and to share the experiences in implementation of a haemovigilance programme.**

A total of 19 overseas and 44 local participants, including doctors, nurses and technologists from hospitals and blood centres, quality and safety practitioners and hospital accreditation surveyors, attended the Workshop. Overseas participants were from China, Indonesia, Malaysia, Taiwan and Macau SAR.

Participants found the Workshop very informative and useful. The programme started with the lecture of Professor Erica Wood on the global perspective of haemovigilance, which was followed by Professor Albert Lie's talk on the development of haemovigilance framework in Hong Kong SAR. To facilitate the participants' understanding of the operation of haemovigilance system, Dr Ching-Wa Lau from the Hong Kong Red Cross Blood Transfusion Service described the blood centre perspectives, while Dr Rock Leung introduced the haemovigilance system of a regional acute hospital in Hong Kong SAR.

We were honoured to have the participants sharing with the audience the haemovigilance system in their own countries or regions. Dr Wen-biao Liang, Dr Teguh Triyono, Dr Chiew-ping Ong, Dr Fang-yeh Chu and Dr Lap-cheng Wong, introduced the haemovigilance systems of the Province of Jiangsu in China, Indonesia, Malaysia, Taiwan and Macau SAR, respectively. It was noted that the organization of the haemovigilance systems and practices among countries or regions varied with the extent of involvement of the regulatory bodies, the size of hospital networks served, the volume

of transfusion activities and the reporting platforms, e.g., paper forms, simple IT or cloud-based system. Nonetheless, all the systems had been designed to achieve some improvement in transfusion safety.

The afternoon session commenced with some interesting interactive sharing on the application of the haemovigilance system in Hong Kong SAR. Drs Kate Leung, Natalie Chan, Wai-shan Wong and Rosalina Ip, all local haematologists, presented incidents illustrating the positive impacts of haemovigilance: 'patient identification problem during emergency surgery', 'blood component storage problem during transportation', 'respiratory complications related to transfusion' and 'the use of temperature logger in cold chain management'. Participants highly rated the sharing and engaged themselves actively in the discussions. The incidents showed the issues encountered in the transfusion process common to various countries or regions. Some participants shared similar experiences and debated the learning points to prevent recurrence of the issues.

The programme concluded with Professor Wood's lecture on 'Critical Elements in the Haemovigilance Framework' and another interactive session on 'Towards an Ideal Haemovigilance Framework'. The participants identified gaps and opportunities for improvement. Review of the reported incidents and adverse reactions by an expert panel would be highly desirable. Provision of a convenient and user-friendly on-line reporting platform would highly facilitate reporting, communication and data analysis. Participants generally agreed that it would be important to motivate and involve people to report, review the reported cases and data, coordinate and implement the improvement exercises. Professor Wood suggested inviting contributions through acknowledgement in the reports. With enhanced awareness and better understanding of haemovigilance, implementation of a haemovigilance programme in hospitals, public or private, would be seen as a sign of commitment to continuous quality improvement.

Evaluation responses are very favourable and future workshops and conferences, as suggested by many participants from overseas, will be planned.



**Frederik Banch Clausen**  
Copenhagen University Hospital,  
Denmark

## Conference Report of the 4<sup>th</sup> International Meeting on Cell-Free DNA, cfDNA2019

The 4<sup>th</sup> International Meeting on Cell-Free DNA, cfDNA2019, was held in Copenhagen, Denmark, May 23-24. The scientific topics were clinical applications of cell-free DNA.

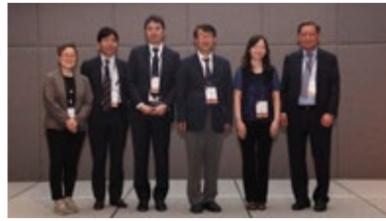
In the rapidly growing field of cell-free DNA testing, the cfDNA2019 meeting once again attracted excellent speakers who presented the audience with new insights into cell-free DNA testing and its clinical applications across several fields. These fields included transfusion medicine, cancer diagnostics, prenatal diagnosis, and transplantation. Topics included noninvasive prenatal testing of fetal antigens in clinical immunology, noninvasive prenatal testing of fetal aneuploidies, noninvasive monitoring of transplant rejection, and monitoring of cancer. And furthermore, aspects of the biological properties of cell-free DNA were covered. There were 14 invited talks, 10 short oral presentations from the audience, and 23 posters. Three scientists were given a travel grant, and a poster winner was found by a jury. The meeting was attended by 155 people from 26 different countries.

Day one of the cfDNA2019 meeting opened with the topic of noninvasive fetal antigen testing covered by Prof. Ellen van der Schoot, Ass. Prof. Catherine Hyland, and Dr. Agnieszka Orzinska. Prof. Tobias Legler initiated a discussion of new EU regulations concerning CE-marking. Following this, three scientists from France, USA, and England presented the newest progress in cancer diagnosis and monitoring, followed by oral presentations. Different biological properties were then covered, including a presentation from Dr. Peiyong Jiang from Prof. Dennis Lo's group in Hong Kong. First half of day two was focused on non-invasive prenatal diagnosis and testing in the field of prenatal care. Following the poster session, the second half of day two covered new findings from the transplantation field. We thank all participants for their excellent contribution to the meeting.

In addition to the 2-day conference, we held a discussion workshop the day before the meeting on the topic of fetal RHD genotyping, arranged by Dr. Åsa Hellberg, where approximately 50 scientists met to discuss methodologies and clinical issues. This workshop was highly appreciated by the participants.

The cfDNA2019 meeting was sponsored by Illumina, Qiagen, BioRad, and Roche, with four additional exhibitors. The meeting was further supported by The Center of Diagnosis at the Copenhagen University Hospital, The Danish Society of Clinical Immunology, The Danish Society of Medical Genetics, The Danish Society of Fetal Medicine, The Danish Cancer Society, IVF tech, as well as the ISBT.

We sincerely hope that all attendees had a great and educational meeting and found opportunity to discuss science with their international colleagues. We will meet again for the cfDNA2021 meeting.



## 38<sup>th</sup> Annual Congress of the Korean Society of Blood Transfusion (KSBT), 2019

**This year the annual congress of the Korean Society of Blood Transfusion (KSBT) was held in Daegu from May 31 to June 1, attracting 375 participants involved in blood services and transfusion medicine in Korea.**

This year the KSBT was fortunate to have five international experts from Hong Kong, United Kingdom, Singapore and Japan sharing their latest scientific works.

The congress opened with the plenary session in which Professor Wai-Kay Seto of the University of Hong Kong discussed the implications of occult hepatitis B and C on blood safety. His talk was followed by a lecture of Dr Ashley M Toye of the University of Bristol on enhancement of red blood cell transfusion compatibility using CRISPR-mediated erythroblast gene editing.



Since 2017, to initiate collaboration and knowledge sharing among neighboring countries, an Asian session dealing with various topics in transfusion medicine was organized. In Korea, research about platelets is still not very active. To raise more awareness about human platelet antigens, anti-platelet antibodies and quality of platelet components, this year's Asian session dealt with issues around platelet transfusion. Dr Aileen Ang of the Blood Services Group of Health Sciences Authority, Singapore explained the clinical significance of HPA antibodies such as fetal and neonatal alloimmune thrombocytopenia (FNAIT), post-transfusion purpura (PTP) and platelet refractoriness. Dr Nelson Hirokazu Tsuno of the Japanese Red Cross Kanto-Koshinetsu Block Blood Center gave a review on the advantages and disadvantages of currently



**So-Yong Kwon**  
Korean Red Cross Blood Services,  
Korea

available methodologies to screen for anti-platelet antibodies such as monoclonal antibody-specific immobilization of platelet antigen (MAIPA), mixed-passive hemagglutination assay (MPHA) and the immunocomplex capture fluorescence analysis (ICFA) which is based on the Luminex technology. He also introduced the recent initiatives of the ISBT platelet immunobiology Working Party to enhance laboratory performance regarding anti-platelet antibodies and also stimulate research activities in this field in Asian countries and encouraged participants to take part in the workshops and other activities organized by the Working Party. Professor Yonggon Cho of the Cheonbuk National University, Korea gave an in-depth overview of platelet storage lesions and also discussed novel technologies to prolong the shelf life of platelets. Professor Shinichiro Fujiwara of Jichi Medical University, Japan shared his experience of using washed platelets for patients with a history of transfusion reactions. This topic was of particular interest, since in Korea, Korean Red Cross blood centers are in the phase of getting approval for washed platelets by the Korean Ministry of Food and Drug Safety.

The Asian Session was held concurrently with two other parallel sessions and was attended by 68 participants. Majority of the participants gave a positive feedback and found that the session was highly valuable in staying updated regarding issues around platelet transfusion.

The KSBT would like to thank ISBT for their continued support.



**Zahida Qasim**  
DHQ Teaching Hospital, Pakistan

## Blood donor management training workshop in Mirpur, AJK, Pakistan



**A workshop on Blood Donor Management was conducted in Mirpur, Azad Jammu & Kashmir (AJK), Pakistan. The workshop was conducted by District Headquarters Teaching Hospital Mirpur in collaboration with the International Society of Blood Transfusion (ISBT). The workshop was organized to strengthen blood donor management which is identified as a critical need of the AJK region. The meeting participants included stakeholders working as blood donor managers, medical technologists, trainee haematologists and transfusion specialists.**

The training provided current information on the essential components of blood donor management including infrastructure requirement for blood donor management, establishing and maintaining blood donor base, donor recruitment and retention strategies, safe blood collection techniques, blood donor counselling, referral and care,

human resources management, information technology, and ethical considerations in blood donor management. The participants also deliberated on recommendations and future plans to improve blood donor management systems and practices in the AJK region especially in the DHQ Teaching Hospital Blood Bank which will be upgraded as Regional Blood Centre in Phase II of the National Blood Transfusion Programme. The WHO training material was adapted and made suitable for local needs especially to address specific issues.

The workshop was evaluated through a structured questionnaire (evaluation form) which was filled in by all the participant anonymously. Generally, the participants appreciated the workshop topics and the facilitators' delivery of knowledge and requested for longer and regular capacity building workshops. Pre and post course assessment was done to have a systematic collection and analysis of information to improve participants' learning. The participants were provided a questionnaire with 25 multiple-choice questions at the beginning and at the end of training. Overall, the knowledge after the post-course assessment was raised from 32% to 72.5%.

Dr. Farooq Ahmed Noor, Medical Superintendent, DHQ Teaching Hospital, Mirpur in his concluding remarks appreciated the ISBT support to conduct the subject training workshop. He emphasized the participants to implement the donor management skills and knowledge, in their respective blood banks.



**Edson William Mollel**  
Northern Zone Blood Transfusion  
Center, Tanzania

## A training programme in Tanzania for strengthening blood collection

### Background

This training program was intended to improve, blood collection and other blood related activities through strengthening of local government blood collection teams. Northern Zone Blood Transfusion Centre (NZBTC) located in the Northern part of Tanzania, has the responsibility of testing all blood samples of blood units, and ensure that all councils of the four regions of Kilimanjaro, Arusha, Tanga and Manyara adhere to national and international standards for the whole chain of blood collection: from blood donor recruitment and mobilization to blood utilization and haemovigilance.

It was important to conduct this training to Regional Medical Officers (RMOs), District Medical Officers (DMOs) and Regional Blood Safety Coordinators (RBSCs) to improve their understanding and increase awareness on issues related to blood collection activities. Also to strengthen blood collection teams, improving adherence to Quality Management Systems (throughout the chain of blood collection to blood utilization) and improve teams' sustainability.

### Implementation strategies

#### Sessions conducted

Sessions were conducted through lectures and presentations followed by questions, recommendations, comments and discussion after the lecture sessions. Thereafter, all participants had the chance to visit NZBTC, and get the opportunity to observe what and how NZBTC is doing including visiting the Zonal Laboratory which had just received the automation machines (for testing TTIs and BGS) that were concurrently being installed.

Distribution of guidelines, SOPs and other materials  
The following materials were distributed to each council (soft copies and hard copies):

1. Clinical Guideline for Appropriate Use of Blood and Blood Products
2. Haemovigilance Guidelines
3. Blood Donor Assessment and Selection Guidelines
4. Guidelines for Blood Donors Notification and Referral to HIV Services.

5. Blood Donor Recruitment, Retention, Advocacy and Communication Strategies Guideline
6. All SOPs for all activities and procedures related to blood collection, storage and utilization
7. All presentations that were conducted (sent through their email addresses)

### RESULTS/OUTPUTS

#### Action plan

Eight action items were accepted for the action plan summary. They included the establishment of strong and coordinated collection teams, setting a budget for blood collection, and mobilising Rh negative individuals by forming Whats App groups and donor clubs.

#### Evaluation

The evaluation forms were distributed to the participants at the end of day two as required by the International Society of Blood Transfusion (ISBT), who were the funder of the event. The overall performance of the training was 5.

### ACKNOWLEDGEMENT

NZBTC, is indebted to the support provided by ISBT through its ISBT Academy which enabled the implementation of this training activity. We hope they may see a need for another phase of support to a similar kind of training to improve blood transfusion services in Tanzania. We also thank all facilitators and all participants.



**Gatare Swaibu**  
Division Manager of Rwanda  
National Center for Blood Trans-  
fusion, Africa

## Celebrating the World Blood Donor Day 2019

Blood transfusion saves lives and improves health. Donated blood can be lifesaving for individuals who have lost blood because of accidents or surgery, as well as for people who have become severely anemic or have dangerously low platelet counts because of certain medical conditions and/or treatments. At the 58th World Health Assembly, the WHO designated the World Blood Donor Day (WBDD) as an annual event to be held each year on June 14 to inspire people to express gratitude for those who donate blood voluntarily and to encourage both voluntary donors and others who give blood regularly. The World Blood Donor Day (WBDD) 2019 Global Event was celebrated in Rwanda at the Kigali Convention Center (KCC) for the 2nd time in Africa after 15 years. The event was preceded by an academy day on 13th June and 100 delegates attended whereas 350 delegates attended the main event the day after. The theme for this year, "Safe Blood for All" implies universal access to safe blood, as a component of achieving universal health coverage. Discussions at the Academy day focused on Blood Donor Mobilization, Recruitment and Retention strategies, with much emphasis on measures to circumvent the challenge of blood shortage. Prof. Dora Mbanya, President of Africa Society for Blood Transfusion (AfsBT) highlighted the role of AfsBT in promoting the safety, availability and accessibility of blood for transfusion on the African continent through supporting development of quality systems, education and training of staff from national blood programs.

Mrs. Judith CHAPMAN, the Executive Director of the International Society of Blood Transfusion (ISBT); stressed the role of ISBT in ensuring access to knowledge on transfusion through financial support of education programs, trainings and conferences around the world mostly in resource limited countries. Dr Tedros, the Director General of World Health Organization (WHO), in his recorded video message, called on governments to ensure access to safe blood and blood products for all and pledged WHO's continued support to countries to develop national blood systems. The Guest of Honor was Rwanda's State Minister for Health. In his remarks, Dr. NDIMUBANZI Patrick highlighted that Rwanda is continuously putting

efforts in ensuring and improving safety in blood donation and transfusion, and in ensuring equitable access to health care involving the use of unmanned drones to deliver blood to remote hospitals. Delegates also used this as an opportunity to tour different parts of the country such as the drone port and the Kigali Genocide Memorial site. A gala dinner was organized the night of 13th for delegates to network and exchange experiences.

The event was concluded by awarding 15 blood donors with the highest donations and 18 institutions for their continued support to Rwanda's national blood program.

L-R : YU JUNPING (WHO/ Geneva), MASSARO Gianfranco (FIODS) Mrs. Judith CHAPMAN (ISBT), Dr. Andre LOUA (WHO/AFRO), Prof. Dora Mbanya (AfsBT), Mr. Arjun Prasad MAINALI (World Blood Donor), Dr. NDIMUBANZI Patrick (Hon. Minister of State), Dr. Kasonde Mwinga (WHO/Rwanda), Dr. GATARE Swaibu (NCBT/Rwanda), Dr Jean Baptiste MAZARATI (RBC/ Rwanda), Dr.Giancarlo Maria Liumbruno (NBC/Italy).



## A story of UK-Ghanaian collaboration to improve transfusion services



Amelia Fisher

### Amelia's Story

I travelled to Ghana in 2014 to work as a volunteer intern at Volta Regional Hospital (VRH), a tertiary referral hospital for the Volta region, where I undertook a survey of sickle cell disease care. The challenges of providing safe and timely

transfusion became apparent, when I met Professor Bates in Liverpool whilst doing a Diploma in Tropical Medicine and Hygiene (DTMH), an ideal opportunity for collaboration with VRH to audit their blood transfusion practice arose.

Professor Adzaku, Physician and Dean of the University of Health and Allied Sciences (UHAS), put me in touch with Emmanuel Allotey, Lecturer in Haematology, UHAS. Through Professor Bates I contacted Dr Lucy Asamoah-Akuoko, head of Research and Development at National Blood Service Ghana (NSBG). During this time, Ankush had developed an interest in tropical haematology via the DTMH, and Professor Bates put him in contact with myself. We distilled the NBSG clinical guidelines into a succinct summary, which could be used to determine whether potential blood transfusions were in keeping with the national guidelines and indicated clinically.



Ankush Dhariwal

### Ankush's Story

With the approval of VRH, and remote supervision from Professor Bates, I travelled to Ghana to undertake this project alongside Mr Allotey. We found 49% of transfusions in a 3-month period

were not compliant with the national guidelines, and that reasons for this included lack of awareness of the guidelines/ appropriate indications for transfusion, as well as distrust of laboratory haemoglobin values.

The results of the study were also communicated to Dr Asamoah-Akuoko and NSBG. We highlighted the significant potential of educating clinicians in reducing inappropriate blood use, and NSBG plans to incorporate the study findings and key messages in its annual

clinician education programme. NBSG are in the process of revising their guidelines and will incorporate the results of the study into the guidelines.

Thanks to the support of Dr Shubha Allard, consultant haematologist at NHS Blood and Transplant (NHSBT), I obtained funding for the study through ISBT, without which ongoing work would not have been possible.



Matthew Wells

### Matthew's Story

Along with my wife, Dr Sarah Chitty, we had a dual role at VRH as service providers and clinical lecturers, arranged by Prof Bates and UHAS. Building on the study by Amelia and then Ankush, I undertook a quality improvement project. With support

from laboratory staff, including Ruth Gyere, and advice from Dr Tom Latham (NHSBT) I introduced a revised blood product request form (based on NBSG guidelines). Concordance to national guidelines improved from 51% to 68% in a prospective audit and blood use was reduced by 33%.

With help from Dr Dennis Okine at VRH the Sickle cell clinic was re-established, primarily seeking to identify candidates for Hydroxycarbamide therapy, which, apart from improving patient quality of life and reducing complications, should reduce blood usage.

Previously, blood donors were not routinely informed of reactive viral serology in pre-donation blood samples. An ongoing joint project between the laboratory and clinical teams, initiated by Dr Chitty, aims to link patients with potential viral infections to appropriate counselling and treatment.

It will be important for the newly established Transfusion Committee at VRH to help to sustain these and other changes to improve blood management and donor care, as the VRH transitions to teaching hospital status.



Mahrukh Getshen  
national referral hospital,  
Bhutan

## An audit of clinical transfusion practices at JDW, national referral hospital in Bhutan

### Introduction

As per ISO 9000 (2000) an audit is defined as a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled. Hence, audit is a useful tool for monitoring and improvement of quality.

### Background

The National Blood Center in the capital city of Thimphu, Bhutan caters to blood needs of approximately 380 bedded JDW, National Referral hospital (NRH) where it is based and also to the district hospitals in the western region of the country. Various national documents such as national standards, guidelines for clinical use of blood, blood donor selection and retention criteria have been developed since 2009. In 2017, standard operating procedures (SOPs) on safe bed side clinical transfusion practices (CTP) were developed through a technical working group involving blood service personnel, nurses, nursing tutors and blood safety program. These SOPs were implemented at 4 major hospitals and 6 months later an audit was planned. Since bed side ward nurses are in the forefront of clinical management and care, compliance by the nurses to good CTP is crucial for better patient outcome. This article covers only the audit details conducted at clinical areas of NRH.

### Activities

Assessors included 1 clinical nurse and 1 blood service technologist of another hospital who were trained to conduct the audit. An audit checklist was developed and used which had a total of thirty-three questions that covered pre-transfusion, transfusion and post-transfusion phases. Inpatient departments with high transfusions rates namely general medicine, emergency, obstetrics and gynecology, surgery and the day care blood transfusion unit of the hospital were chosen. The audit took place for 3 days from 5th to 7th October 2017, during which the auditors conducted a prospective audit and retrospective check of transfused patients' records. They also checked availability at the work stations of guidance documents such as SOPs on CTP, relevant registers, nurse's handing-taking notes, and CTP related forms. The auditors marked a 'Yes' or 'No' response against each question including any observations made

at time of assessment. Post audit, all the auditors reconvened for data compilation, analysis, report generation and to exchange individual experiences.

### Results

A total of twelve prospective audits, and thirty retrospective audits were carried out at NRH. The non-compliances during the prospective audit were mainly noted in IPD of general medicine and blood transfusion unit. Whereas, non-conformities by all 4 IPDs were observed when reviewing medical records of patients transfused in previous 3 months as part of retrospective audit.

### The non-conformities identified were mostly:

- incomplete or incorrectly filled blood requisition forms, blood transfusion consent forms, transfusion records, and transfusion reaction reporting forms;
- missing patient identifiers on the tubes containing pre-transfusion blood samples;
- inadequate checks for correct patient identification before blood administration;
- crosschecks not made to confirm patient's ABO and Rh blood group and that right blood unit is being transfused to right patient.

All 4 clinical areas demonstrated availability of SOPs, but a uniform procedure of handing- taking by nurses was lacking and hence important patient information transfer was missed out between shifts.

### Recommendations

All bed side blood transfusion practices to be strictly monitored by nurse in-charges, clinicians to fill blood requisition forms instead of nurses; proper orientation of new health staffs on SOPs for safe transfusions; standardization of incident reporting mechanisms and introducing root cause analysis for corrective actions and preventive measures. Auditors also suggested assessing compliance by clinicians, residents and interns during subsequent audits and periodic CMEs for all health care providers involved in CTP.

### Acknowledgements

1. Ms.Tshering Yangdon, Sr. Laboratory Officer, NBC, NRH
2. Ms. Kencho Wangmo, Chief Nurse, NRH
3. Ms. Lhamo Wangmo, Clinical Nurse, NRH



**Rachel Moss**  
Great Ormond Street Hospital  
for Children NHS Foundation Trust,  
United Kingdom

## Making transfusion education happen for nursing staff

**In March 2019, a 2-day transfusion education workshop for 40 nursing staff from 5 Dubai hospitals was undertaken. This was a new and exciting initiative led by Dr May Raouf, Head & Medical Director at Dubai Blood Donation Center and ISBT Regional Director for Eastern Mediterranean Region and provided the delegates with expert speakers on a wide range of transfusion related topics and group activities to further their transfusion knowledge.**

Education of nursing staff is vitally important as nursing staff are (usually) the final part in the transfusion process in ensuring the patient receives a safe blood transfusion. Many nurses administer blood to patients, and although they are very aware of the process required such as recording vital signs, or undertaking verification of the unit, they are not always aware of the science and theory that underpins this.

The first day of the 2-day transfusion education workshop for nursing staff, was opened by H.E. Dr. Younis Kazim, Executive Director, Dubai Health Corporation, Dubai Health Authority. His opening remarks were followed by a series of talks that ensured the nurses attending were given comprehensive information on crucial parts of the transfusion practice. All the talks were designed to provide the delegates with the theory underpinning their current practice. These talks included blood & components specification and clinical usage; blood component labelling and TACO, TRALI and GVHD. This talk generated a large amount of discussion with delegates encouraged to report all TRALI and TACO events to the Transfusion Laboratory.

Rachel Moss, Transfusion Practitioner, gave 2 talks; one on blood administration, roles & responsibilities of Transfusion Nurse and one on transfusion adverse events, reactions and complications.

The talk on ICT innovation applied to Transfusion Medicine prompted discussions with representatives in the room to consider some of the suggestions made by the speaker. Finally the whole group worked through

the blood transfusion procedure including the required IT processes.

The second day was a series of workshops, with many of the previous day's speakers acting as facilitators. Case scenarios were discussed and worked through, questions and discussions were encouraged and opportunities were given to consolidate the theory delivered the previous day. Finally each hospital were asked to set a plan for how they will take back the information they have learnt in the 2-day workshop to their own organisations to promote the safe transfusion message to their nursing staff.

To measure the success of the 2 days, delegates undertook a pre and post test to see if their level of understanding had improved and completed an evaluation form. Initial reviews showed that knowledge had improved, and the evaluation forms were all very positive. The final results will be fed back to the delegates local Transfusion Committees to show how beneficial to the nursing staff and ultimately the patients this workshop had been.

It is hoped that this exciting initiative can be replicated within the healthcare organisations in Dubai, with support from the local Transfusion Committees, so that all nurses who administer blood to patients are given the opportunity to learn the science and theory that underpins this activity, and so ensure patients receive a safe and appropriate transfusion.

More information on the role of the TP can be found on the ISBT website <http://www.isbtweb.org/working-parties/clinical-transfusion/>



# 2019

October 16-19  
**5th Congress of Macedonian Society for Transfusion Medicine with International Participants**  
Skopje, Macedonia

October 19-22  
**AABB annual meeting**  
San Antonio, USA

October 20-23  
**Blood 2019**  
Perth, Australia

October 25  
**ISBT Academy Day Implementing a Rare Donor Program, XI Congreso GCIAMT 2019**  
Punta del Este, Uruguay

November 6-9  
**ABHH meeting**  
Rio de Janeiro, Brazil

November 10-15  
**International course on Clinical Epidemiology**  
Schiernmonnikoog, the Netherlands

November 21-22  
**Days of innovation in biology**  
Paris, France

November 28-30  
**Vigilance in Transfusion**  
Tanger, Morocco

December 11-13  
**27th Conference of the Russian Transfusiologists Association (RTA)**  
Moscow, Russia

November 16 - 19  
**30th Regional Congress of ISBT**  
Bangkok, Thailand

**Get through the mosquito season** without incremental donor deferrals, additional NAT-testing and risk of supply disruption.\*



# The INTERCEPT™ Blood System is ready.

## ARE YOU?

- ⊕ 2007 Paul-Ehrlich-Institut issues a guidance<sup>1</sup> that specifies pathogen inactivation as equivalent to donor deferral and testing for Chikungunya (CHIKV).
- ⊕ 2014 Paul-Ehrlich-Institut issues a guidance<sup>2</sup> that specifies pathogen inactivation as equivalent to donor deferral and testing for West Nile Virus (WNV).
- ⊕ 2016 WHO<sup>3</sup>, US FDA<sup>4</sup> and Paul-Ehrlich-Institut guidances<sup>5</sup> offer pathogen inactivation as one option to mitigate risks related to Zika Virus (ZIKV) outbreaks.
- ⊕ 2017 INTERCEPT™ Blood System for pathogen inactivation helps to maintain supply continuity during Chikungunya (CHIKV) outbreak in Italy<sup>6</sup>.
- ⊕ 2018 First recorded cluster of locally acquired Dengue Virus (DENV) cases in Spain<sup>7</sup>. Various studies demonstrated<sup>8,9</sup> that the INTERCEPT™ Blood System has robust pathogen inactivation for various strains of DENV.
- ⊕ 2018 Number of West Nile Virus (WNV) infections in Europe exceeds the total number in the last 5 years<sup>10</sup>. The INTERCEPT™ Blood System enabled earlier release of apheresis platelets in France.



**WNV**



**DENV**



**CHIKV**



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\* Valid for apheresis platelet concentrates only, subject to local requirements.

<sup>1</sup>Paul-Ehrlich-Institut. Verminderung des Risikos von Chikungunya - Infektionen durch zelluläre Blutprodukte und gefrorenes Frischplasma, Anordnung der Spenderrückstellung von Personen, die sich in den letzten zwei Wochen in einem Chikungunya-Endemiegebiet aufgehalten haben (24. Jan 2007).  
<sup>2</sup>Paul-Ehrlich-Institut. Stufenplan Stufe 2: Anordnung des Ausschluss von Blutspendern zur Verhinderung einer möglichen Übertragung des West-Nil-Virus durch nicht pathogen-inaktivierte Blutkomponenten (22. Jan 2014).  
<sup>3</sup>WHO Interim guidance WHO/ZIKV/HS/16.1 February 2016.  
<sup>4</sup>FDA Guidance for Industry February 2016.  
<sup>5</sup>Paul-Ehrlich-Institut. Bekanntmachung über die Zulassung von Arzneimitteln - Abwehr von Arzneimittelrisiken Stufe 2 - Verminderung des Risikos von Zika-Infektionen durch nicht pathogen-inaktivierte Blutkomponenten und gefrorenes Frischplasma (10. Mar 2016).  
<sup>6</sup>Luca Pierelli et al; Emergency response of four transfusion centers during the last Chikungunya outbreak in Italy; Transfusion 2018;9999:1-4.  
<sup>7</sup>European Centre for Disease Prevention and Control. Local transmission of dengue fever in France and Spain - 2018 - 22 October 2018. Stockholm: ECDC; 2018.  
<sup>8</sup>K. Dupuis, High Titers of Dengue Virus in Platelet Concentrates are Inactivated by Amotosalen and UVA Light, Transfusion 2012-Vol. 52 Supplement.  
<sup>9</sup>Li Kiang Tan, Evaluation of Pathogen Reduction Systems to Inactivate Dengue and Chikungunya Viruses in Apheresis Platelets Suspended in Plasma, Advances in Infectious Diseases, 2013, 3, 1-9  
<sup>10</sup>European Centre for Disease Prevention and Control. West Nile fever in Europe - Number of infections so far exceeds the total number in the previous five years - 2018 - 24 Sep 2018. Stockholm: ECDC; 2018.

No pathogen inactivation system has been shown to inactivate all pathogens.