TRANSFUSION TODAY

Transfusion Today | **Number 114, March 2018**

Quality Management

ISBT membership year 2018-19

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

Correction TT113: ISBT wishes to correct the In Focus article in the Transfusion Today Issue number 111, December 2017 – "Appropriate Use of Blood". The following author was accidently omitted: L. T. Goodnough, Professor of Pathology & Medicine, Stanford University Director, Transfusion Service, Stanford University Medical Center. ISBT wishes to extend their sincere apologies to all authors for this omission."

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Judith Chapman

Editorial

Quality; despite its very real importance I often think of it as unexciting and being rather dull and into detail. But that is what quality is about. It is about the detail and commitment to certain standards that ensure a good quality product or the quality of work performed.
The focus section for this issue is about quality.
It contains an article written by Tom Vuk, a committee member of the Quality Management Working Party on the ongoing survey on quality that the Working Party is conducting. There is also an article from Jenny White who is the manager of the UK National External Quality Assessment Scheme (NEQAS) for blood transfusion practice. In the article Jenny writes about the importance of EQA schemes for enhancing good practice in the laboratory and in the clinic and ward. From 1994 – 2002 I was chairperson of the Steering committee for the scheme. Its value was very clear to me as results demonstrated where errors could occur; the scheme was able to alert laboratories to incidences where poor practice led to these errors leading to changes in practice.

Here in the ISBT office we are really pleased with the way that the monthly webinars and the monthly live journal clubs have become part of the benefits that ISBT is offering at no charge to its members. The webinars are educational and an opportunity for enhancing knowledge and practice, the mission of ISBT. We hope that all members will take advantage of these free educational opportunities.

More opportunities for members come with the revised membership structure and the change from using the UNHDI index to the World Bank Index. Members in South America, India and Sri Lanka and other countries will find that their membership fee will reduce for the 2018-19 membership year. We are also very pleased to introduce a new low fee for Allied Health Professionals e.g. graduate scientists and Transfusion Practitioners.

We are looking forward to a great International congress in Toronto and hope to see you there.

Quality monitoring in Transfusion Medicine - the importance of quality indicators

Tomislav Vuk
Quality manager
Croatian Institute of Transfusion Medicine, Zagreb, Croatia

Blood transfusion services around the world are making significant efforts to ensure the quality and safety of transfusion therapy and to achieve continuous quality improvement of their products, services and processes. To what extent these goals are achieved can be objectively assessed by analyzing data obtained by monitoring.1 The purpose is not only to assess the achievement of quality objectives set within the organization, but also to compare the data with other establishments (benchmarking).

Quality indicators play an important role in quality monitoring. This valuable quality management tool enables continuous quality monitoring, including trend analysis, detection of deviations from set goals, defining priorities in resolving problems, etcetera. Defining quality objectives, quality indicators and their monitoring are all part of the organization's strategic planning. Quality monitoring and risk based thinking are closely related. Risk assessment affects the decision on the extent of quality monitoring activities.

Quality indicators are an indispensable tool in quality improvement. By using them, it is possible to compare the actual and expected quality level and evaluate the appropriateness of measures for achieving quality objectives. Monitoring the quality indicators is also important from an economic point of view. The data obtained by monitoring the quality indicators can direct transfusion institutions to initiatives and strategies that will result in savings, primarily due to decreased blood product wastage.

Consequently, the growing interest in quality indicators in recent years is not surprising. This is in line with ISBT's efforts to promote the importance of this quality tool.2 The interest in this topic is also reflected in the survey launched by the ISBT Working Party on Quality Management (WP QM) at international level. The aim of the survey was to determine the degree of implementation of quality indicators in blood establishments, and modalities of their monitoring. The questionnaire was answered by a total of 87 participants (status on June, 2017), but the number of responses to individual questions varied. From 64 participants answering the question, 57 (89%) consider quality indicators proposed by ISBT WP QM helpful for their institutions, while 67/74 (91%) participants expressed the interest of participating in the survey which aims to compare results of quality indicators monitoring.

There have also been several papers published on quality indicators in recent years. This is an important source of information on the effects of their implementation. The 2011 revision of Dutch Blood Transfusion Guideline for hospitals incorporates a set of seven quality indicators aimed at measuring the compliance with the guideline and the evaluation of hospital transfusion practice.3,4 Results of the national survey on their use in 100 Dutch hospitals were published in 2015.4 In 2017, Spanish authors published a study on the use of quality indicators in hospital transfusion services.5 This study showed that most hospitals had implemented quality indicators in their quality management systems. Despite significant variations in the number and characteristics of indicators, a set of indicators have been identified that could serve for benchmarking among hospitals. The importance of quality monitoring in achieving continuous quality improvement was discussed by Bhatnagar et al.6 In their paper, performance indicators were analysed in the blood bank for a period of 4 years and a positive trend was observed in achieving the set goals.

Based on the quality indicators proposed by ISBT WP QM, a national system for monitoring quality indicators in blood establishments has been established in Croatia since 2013. All the data presented in this short review show an increasing interest in quality indicators in transfusion medicine. ISBT and its Working Party on Quality Management will continue to promote this important quality monitoring tool in the future.

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The ISBT survey on quality management system requirements and inspection standards

Christian Seidl
Vice Medical Director, Institute of Transfusion Medicine and Immunohaematology, German Red Cross Blood Donor Service.

Blood transfusion therapy is of high ethical value to safeguard patient therapies. Besides blood and blood components there is also an increasing demand for cellular products. Optimal quality management system and regulatory requirements are essential to establish best governance in the 'vein to vein' chain. However, with respect to the blood components manufactured, regulatory requirements, as well as the level of quality management implemented, vary between countries worldwide.

The ISBT Working Party on Quality Management (WP-QM) has therefore decided to set up a quality management (QM) survey platform to define:

- the structure of quality management systems used by blood establishments
- activities in different areas of blood establishments that need improvement
- guidelines and regulatory requirements in place nationally or internationally
- training programmes or educational activities.

The WP-QM-Survey is conducted via the internet (Survey Monkey) covering the following topics

- Section I - Activities carried out by Blood Establishments / Blood transfusion services
- Section II - Quality systems in use, structure of self-inspections performed and assessment for the need to improve particular quality areas
- Section III – Criteria and standards used by competent authorities to carry out regulatory inspections against the national licensing requirements

The survey was sent out between 2015-2017 in two rounds to several institutions. Currently, the working party has collected information from 49 institutions either being members of the working party or cooperating with the ISBT worldwide.
Based on the extended number of survey participants, we have clearly confirmed the primary evidence for improvements of quality system by more than 2/3 of the institutions.

The areas most commonly identified for improvements were:

- job descriptions and qualification/training of staff,
- blood donor area, blood testing,
- documentation of change controls,
- process validation
- handling of non-conformances (deviations, complains and recall of products).

Regulatory inspections by competent authorities or governmental institutions are performed in most participating countries, however in some countries such inspection systems are still in the process of being developed.

These results have been used by the Working Party to define further focus for their academy training programme as well as to link their training activities to an ongoing format organised by the EuBIS Academy offering international training courses.[1] This training material (manual/guide) is developed to be used as a tool covering Good Manufacturing Practice (GMP), PIC/S, EU Directives as well as the Council of Europe (EDQM) standards with the Good Practice (GP) Guide in order to improve quality systems of blood transfusion services and to prepare for regulatory inspections by competent authorities.[2], [3]

The Working Party has used this training concept and material to perform a GMP-based workshop and seminar in cooperation with the National Blood Transfusion Service in Hanoi in March 2017 (see related article in this issue).

Access to the survey is available to all interested ISBT members who provide an indication to the Working Party Board (http://www.isbtweb.org/working-parties) from were you will receive the password to fill-in the survey (https://www.surveymonkey.com/s/isbt-wp-qm-survey).

Further information and references

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The challenges of quality management in resource-limited countries

Implementing and maintaining an effective, robust Quality Management System (QMS) presents a significant challenge in countries were resources are limited. In these countries, the QMS should be introduced in stages, beginning with basic, minimum requirements and implementing these thoroughly before gradually growing the system through continual improvement.

Resource-restricted countries often have limited human resources (especially with regard to trained and skilled personnel), poor infrastructure and logistics, lack of essential equipment and regular supplies, and inadequate government support.[1] There is a need to engage with governmental organisations to garner support and facilitate the development of a national regulatory framework.

In many instances the Quality Department is understaffed and unable to cope with its responsibilities. There may also be inadequate clerical support for the processing and control of quality documentation. Support for the Quality Department should be increased by developing quality 'ambassadors/ champions' in each department and regional zone. Allocate quality responsibilities to department heads for updating SOPs, addressing non-conformances within time limits, conducting validations, performing relevant monitoring and evaluation activities (M&E), carrying out mock-audits in preparation for internal and external audits etc. Hold training sessions for these ambassadors, make them accountable for their quality responsibilities (in annual performance appraisals) and recognise their valuable input.[2, 3]

In a survey conducted by the ISBT Quality Working Party, blood establishments in developing countries indicated a need to improve many aspects of their quality system. In this regard, the measurement of Quality Indicators will provide a useful tool for identifying problem areas, improving processes, reducing wastage, and increasing cost-efficiency.[4] Through a risk management process, blood establishments should identify potential risks and take steps to mitigate and reduce them.[5] These steps will enable the efficient use of available resources. Resource-limited countries are frequently reliant on donor-funding which presents certain limitations. Donors are often reluctant to commit to long-term obligations and problems are encountered when donor funds are withdrawn prior to completion of projects. Establishments are grateful to receive donated equipment but this often leads to a lack of standardisation and the inability of local personnel to maintain the equipment. Donor focus should not only be on infrastructure and equipment but also on host country leadership training and human capital development to ensure sustainability.

Achieving accreditation at an international level presents a challenge for resource-limited countries. The Africa Society for Blood Transfusion (AfSBT) has introduced a step-wise programme whereby blood establishments can choose whether to be certified at a basic or intermediate level before undergoing full accreditation in accordance with the AfSBT Standards which were developed in conjunction with the American Association of Blood Banks (AABB). A Chart of Compliance has been developed which indicates which aspects of the standards need to be complied with at Step 1 and Step 2. For accreditation at Step 3, full compliance is required.[6]

Although having limited resources presents challenges it also provides opportunities for innovation and creative solutions. For example, several blood establishments in Africa have developed in-house designed hampers for the transport of blood and components over large distances and in extreme temperatures. Another innovation is the use of drones for delivering blood to remote areas in Rwanda. The drones are faster and more cost effective than conventional road transport and have drastically reduced the incidence of expired blood and components.

Lesley Bust
Quality Manager
Africa Society for Blood Transfusion (AfSBT)

Even with limited resources the achievement of an effective quality system is possible. Blood establishments should strive to develop a culture of quality and excellence that extends throughout the organisation with all personnel working towards the common goal of providing safe and effective blood products and services.

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Seminar and training workshop on GMP in Hanoi, March 2017

Quality management and continuous assessment by self-audits and regulatory inspection, against legislative framework of blood establishments, are a key-stone in achieving best practices, including risk management and guaranteeing the quality and safety of blood and blood components for transfusion of patients.

Certification of training participants by NIHBT, Dr. Pham Tuan Duong, and gifts given to the international trainer team of the ISBT WP-QM / EuBIS Academy.

The International Society of Blood Transfusion (ISBT) presented the 2016 Developing Country Award to the National Institute of Haematology and Blood Transfusion (NIHBT) during the 34th International ISBT conference in Dubai.[1,2] It was a great honour for the ISBT Working Party on Quality Management (WP-QM) to assist in organising a seminar and training workshop on the topic 'From Good practices to best practices' in blood components and medicinal products. The training focus was on GMP assuring 'Best Practices' in Quality Management System and Inspections for / Blood Establishments'.

The seminar was jointly organised and hosted by the NIHBT from the 8th - 10th of March 2017 in Hanoi. On invitation by Prof Dr. Nguyen Anh Tri (Director, NIHBT) forty-three trainees from blood establishments and hospital blood banks from all regions of Vietnam attended the seminar. The local organisers were Dr. Pham Tuan Duong (Deputy Director, NIHBT), Dr. Nguyen Trieu Van (Head of International Cooperation Department, NIHBT), Dr. Ngo Huy Minh (Deputy Director, Training Center, NIHBT) and Mr. Phan Huu Quang (Deputy Head, Quality Management Department, NIHBT). The international EuBIS expert team was Professor Christian Seidl (GRCBDS, ISBT chairman WP-QM, Coordinator EuBIS Academy), Dr. Paul Strengers (IPFA, WP-QM board), Dr. Omar Fewi Teskrat (EuBIS Academy), Ms. Lesley Bust (AfSBT, WP-QM board) assisted by the organisers.

The seminar comprised lectures and group work based on case studies and exercises covering several aspects of quality management system. It built on previous ISBT Academy training courses organised by the WP-QM with the scope of training on:

- The impact of Good Manufacturing Practice (GMP) and Good Practice Guidelines (GPG) regulations (Directive 2016/1214) for blood and blood components
- Standards for regulatory inspection of blood establishments and services involved in the procurement and processing of cells that are internationally recognised
- Standards to develop best practice and to ensure safety and effectivity of blood and blood components used for the treatment of patients.

The training material was provided by the EUBIS Academy based on its guide and manual covering all critical steps for a quality management system.[3]

Christian Seidl
Vice Medical Director, Institute of Transfusion Medicine and Immunohaematology, German Red Cross Blood Donor Service.

During the seminar and training, special attention was given to the following topics:

- General principles of quality management systems and inspections
- Regulations and regulatory frame-work
- Requirements for buildings, premises and storage facilities
- Validation and Qualification
- Staff training and evaluation
- Inspection / Internal Audit
- Change Control / Risk Management and risk assessment

Simultaneous translation was provided by NIHBT and the local organisers assisted the international trainers and experts during the working group sessions. Besides the lectures, the exercises performed in working groups used practical case work or examples of 'real-life scenarios' and greatly stimulated the discussion between the participants, thereby assisting the learning outcome.

Professor Tri noted in his words of welcome "It has been a great honour for NIHBT to have received the ISBT Award and organise such an valuable training course for Vietnam"; Professor Christian Seidl expressed his great thanks on behalf of ISBT and the trainer team to the successful organisation and hospitality by NIHBT, and noted during his closing words, "The responses and interest given by all trainees during the seminar and workshop was very much stimulating and we are looking forward to assisting in future educational activities".

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Jenny White
Chair of PAEC Committee,
British Blood Transfusion Society

The value of external quality assessment schemes in Transfusion Medicine

External Quality Assessment (EQA) involves provision of identical samples for testing by a group of laboratories at local, national, regional or international level. The EQA scheme's inter-laboratory comparison of all results provides objective assessment for individual laboratories and an insight into the overall level of performance. There is additional benefit where the EQA scheme has an educational focus and provides support to improve practice. EQA for blood transfusion laboratories can monitor qualitative tests such as blood grouping or antibody screening, quantitative tests, e.g. antibody titration, and other activities vital to the provision of safe blood transfusions, e.g. pre-analytical procedures, interpretation of results, selection of blood and reporting.

EQA is an essential part of a laboratory quality management system (QMS) complementing but not replacing other quality assurance measures such as IQC and competency assessment. Whilst IQC can give confidence that day to day results are consistent, EQA can identify areas where improvement can be made that may otherwise go undetected. For example, a laboratory may have acceptable antibody screening control results, but a weaker antibody (detectable by most other laboratories) may be missed in an EQA sample, revealing a potential lack of sensitivity in screening. EQA is primarily intended to identify problems with laboratory systems rather than individuals, and gives a 'snapshot' of a laboratory's performance at a given time.

For individual participating laboratories, EQA can identify both procedural and technical issues, enabling implementation of corrective and preventive actions to improve testing and systems of working. Where EQA reports provide an anonymous commentary on all errors and associated learning points, laboratories can review at their own procedures to see whether similar errors could occur locally under different circumstances, leading to an improvement overall.

Participation in EQA is necessary to achieve accreditation standards, e.g. ISO 15189, where there is focus on the resolution of problems identified through EQA, rather than an expectation that errors will never be made. Most benefit is gained from EQA where laboratories process the samples, as far as possible, in the same way as clinical samples, ensuring that EQA errors reflect those that could occur with clinical testing in each laboratory, and overall data collected by the scheme is reliable and representative of clinical practice.

Collated EQA data can provide an insight into the effectiveness of reagents, kits and specific technologies and may identify inherent problems or limitations. This can be useful both to individual laboratories making decisions on selection of methods, and to manufacturers of blood bank technologies and reagents. By linking results with laboratory techniques and procedures, specific strengths and weaknesses can be identified, driving positive change.

EQA schemes operating in environments where there are other transfusion quality initiatives can contribute to raising standards by working in co-operation with organisations such as haemovigilance schemes and professional societies producing evidence based good practice guidelines. Reviewing data from EQA exercises or questionnaire that have been designed to investigate laboratory errors highlighted by haemovigilance can help to pinpoint the underlying causes and give an indication of level of risk of these errors occurring elsewhere. Areas of practice that could be improved with clear guidance can be identified and, as EQA schemes provide a supportive network where information can be exchanged, there is the opportunity to collect data on current practice and to monitor the effectiveness of guidance and the extent to which is followed. Where subsequent EQA exercises demonstrate correlation between performance and implementation of guidelines, this can create a cycle of improved practice. In settings where there is no such 'quality framework', even a basic EQA scheme for transfusion laboratories can provide valuable evidence to advocate for resources to improve standards of testing and patient safety.

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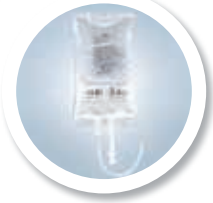

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Dear ISBT member,

I can identify with the often used quote that "time flies so quickly". It seems like it was just a few months ago that the new ISBT Board members assumed our roles in Dubai and it is hard to believe that 18 months have passed by and we are currently in the process of electing new Board members for positions that will become vacant in Toronto. The Board members play a key role in guiding the strategy and governance of our society and we look forward to welcoming new members to the Board.

It is always important to reflect on the successes and challenges of the past year and to ensure that the strategy, objectives and plans going forward are in sync and address any emerging opportunities and challenges for the society. When the Board met early in 2017, some of the key strategic objectives were to increase membership, launch the revised affiliate membership category with additional benefits to partner organizations, further enhance our educational offerings using digital platforms, review the membership fees based on a more relevant global index and further increase stakeholder relations with our partners. The ISBT staff in Amsterdam and Board sub committees have worked hard over the past year to ensure that we achieve these ambitious goals.

I am very happy to report that significant progress has been made and:

- At the end of 2017, individual membership was at 1865 which represents a 12% increase on the previous year.
- We have approved that the World Bank index will be used to determine membership fees. In addition, a new membership category for Allied Health Professionals and Transfusion Practitioners was approved and will be introduced from April 2018.
- We have 17 Affiliate members and interest has been expressed by a number of partners
- There are monthly webinars and a live journal club was also introduced in September 2017. In addition, we have a number of interactive forums.
- A large amount of new material is placed on the ePortal on an ongoing basis.
- From a governance perspective, the role of the Regional Directors has been strengthened to ensure greater visibility of ISBT globally.
- We held two very successful congresses in Copenhagen and Guangzhou. Feedback from delegates, sponsors and exhibitors was very positive.
- In addition to the above, the ISBT staff has been involved with a number of other initiatives and collaboration with partner organizations and societies.

A challenge is low uptake of the educational offerings by members and it will be really great if all members participated in the various educational sessions and forums.

The theme of this issue of Transfusion Today is Quality Management. This topic may seem old news to most developed countries that have established Standards, Quality Systems and independent Accreditation Systems. The reality however is that this is not the case in a majority of Blood Services that are still in the infancy of implementing Quality Systems and Accreditation. The Quality Management Working Party have been active in developing Minimum Quality Standards and Quality indicators which I believe will be of great value to Blood Services.

Ravi Reddy

Welcome to our new members
(January 2017 - March 2017)

Americas
- **CANADA:** Christine Lotoski
- **USA:** Waseem Anani

Eastern Mediterranean
- **PAKISTAN:** Saima Iram

Europe
- **LUXEMBOURG:** Lekshmi Padmavathy
- **CROATIA:** Jasmna Simonic medica
- **LITHUANIA:** Migle Vantens

South East Asia
- **INDIA:** Saptarshi Mandal

Western Pacific
- **CHINA:** Xingyu Wu
- **AUSTRALIA:** Nicholas Collier
- **SOUTH KOREA:** ChoungHwan Kim, Youngjin Chung
- **JAPAN:** Takahasi Kazuya

ISBT membership renewal

We would like to introduce you to the changes ISBT has made to the ISBT Membership System.

The General Assembly 2017 voted for two new individual membership categories and a new fee structure. The new fee structure is based on the World Bank Index. The use of the World Bank Index means that members from some countries will see a reduction in the membership fee.

There are two new membership categories; Allied Health Professional and Transfusion Practitioner. ISBT has introduced these new categories to encourage health professionals from these groups to join the Society.

We hope that these changes will make ISBT membership more accessible and affordable to all professionals working in transfusion medicine in all disciplines and countries across the world.

An explanation of the new categories will be available on the website with examples of job titles that fit into these categories. Please see the details on the website when you renew or join as a member..

We believe many people will be happy with this new structure. Membership will be open for renewal and joining from the 1st of March 2018 and the membership year will run from 1 April 2018 to 31 March 2019.

Prize and award winners 2018

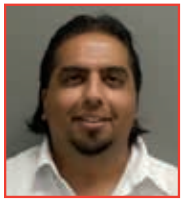
ISBT Presidential Award: Mike Busch

Mike is co Director of the Blood Systems Research Institute, USA. He publishes prolifically, and is well-known for his innovative and productive research. He is an acknowledged national leader in laboratory issues as they apply to transfusion-transmitted diseases. He has advanced the general knowledge of viral dynamics and virus-host interactions, and has been instrumental in bringing nucleic acid technology (NAT) to practical application. His research interests include:

- Understanding transfusion-transmitted viral infections; including the risks of established and emerging agents and the consequences of infections in donors and recipients.
- The development and implementation of improved laboratory methods for detection, evaluation, management and prevention of blood-borne infections.
- Understanding the body's immune response to transfusion, organ transplant and pregnancy, including the mechanisms of tolerance and graft-vs.-host disease, donor white blood cell (leukocyte) proliferation and microchimerism.

The Presidential Award is given by the Foundation Transfusion Medicine. The Presidential Award symposium will be held on Tuesday June 5, 2018 at the 35th International Congress of the ISBT, Toronto.

The Jean Julliard Prize for young scientists 40 years and under: Rick Kapur



Rick is a postdoctoral fellow at Lund University in the laboratory of John Semple. The title of his submission was Transfusion-related acute lung injury (TRALI): Identification of novel risk factors and potential therapies. Prior to moving to Lund in 2017 Rick was a postdoctoral fellow with Canadian Blood Services, Toronto in the Platelet Immunobiology Group at the Keenan Research Centre for Biomedical Sciences, St Michaels Hospital. Rick gained his PhD whilst working at the Department of Experimental Immunohaematology at Sanquin Research Laboratory, Amsterdam Medical Centre.
The Jean Julliard Prize session will take place on Tuesday June 5, 2018 at the 35th International Congress of the ISBT, Toronto

The ISBT Developing Country Award 2018: Department of Transfusion Medicine, Postgraduate Institute of Medical Education & Research, Chandigarh, India.

Dr Neelam Marwaha is the Professor and Head of Department. The facility collected just under 61,000 units of blood in 2016/17. The certificate will be awarded during the opening ceremony of the Toronto congress on Sunday June 3, 2018. A presentation will be given in a session yet to be determined.
There were two highly commended entries; The Paediatric Blood Center of the Philippine Children's Medical Center and the Rwanda National Centre for Blood Transfusion.

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, starting with how it all began with the first animal-to-human blood transfusion.

According to the Royal Society the physician Richard Lower in the 1660's selected one dog of medium size, opened its jugular vein and drew off blood until its strength was nearly gone. He then introduced blood from a fairly large mastiff, to the medium sized dog. The animal recovered with no sign of discomfort or displeasure. This was the first recorded account of an animal to animal transfusion.

The first animal to human intravenous blood transfusion, also known as a xenotransfusion (from Greek xenos- strange or foreign), was performed in 1667. The transfusion was carried out by Jean-Baptiste Denis, a French physician, and Paul Emmerez, a surgeon on June 15, 1667. The transfusion occurred between a lamb and a 15-year-old boy. Carotid artery blood from the lamb was introduced to a vein in the patient's inner elbow, and the procedure ultimately resulted in a successful recovery. Denys performed another transfusion into a labourer, who also survived. Survival was probably due to the small amount of blood that was actually transfused into these people. This allowed them to withstand the allergic reaction.

Denys and Emmerez third patient to undergo a blood transfusion was a Swedish nobleman Baron Gustaf Bonde. When they arrived, the patient had already lost his ability to speak and was practically unconscious. Shortly after the transfusion began, the patient was able to speak again. His health improved however his condition grew progressively worse. A second transfusion took place, but it was unsuccessful, and the patient died. Denis and Emmerez are recorded as performing multiple xenotransfusions together.

Richard Lower, the English physician who performed the first successful animal to animal transfusion performed an animal to human procedure on November 23, 1667. He successfully transfused the blood of a lamb to a 22-year-old man. The whole blood of the lamb was directly introduced into the vein of the patient.

Transfusion gathered some popularity in France and Italy, but provoked medical and theological controversies. In 1668, the Royal Society and the French government both banned the procedure. Experimental blood transfusion only resumed in the 1820s, and human-to-human blood transfusion did not become accepted medical practice until after the discovery of blood types in the early twentieth century.

Experience the ISBT App
Have you installed the new ISBT app? Find it for free in the Google PlayStore and App Store. In 2017 we introduced the new ISBT Society App, in which you find the Congress Apps we present for each ISBT Congress.

Toronto Congress App
Make sure to install the Toronto Congress app for a fuller congress experience. Find the app by searching 'ISBT', and looking for the red-and-white ISBT logo.

Within the app you can download the Toronto Congress event (available in April). The congress app offers the scientific programme, maps of the congress venue, a speaker directory, all abstracts, and access to the interactive sessions. You can also take notes within the app and link them to the corresponding abstract, and export them to your phone with the touch of a button.

Interactive sessions
At the Regional Congress in Copenhagen we first introduced Interactive Sessions, where delegates from the audience could submit questions or answer live polls during selected parallel sessions. In Toronto we will once again incorporate this during specific sessions. More information will be available in due course.

We also invite delegates to use the congress app to rate sessions they attended. We use these reviews when creating the scientific programme for future ISBT congresses.

If you have any comments on the app please contact wingerden@isbtweb.org.

Early registration deadline:
April 19, 2018 at 23.59 CET

The 28th Regional Congress of the ISBT in Guangzhou, China

Fu Yong Shui
The Chairperson of the Local Organizing Committee
Vice President, CSBT
Director, GZBC

The 28th Regional Congress of the ISBT took place from November 25 to 28, 2017 in Guangzhou, a famous cultural city in Southern China with great tourist attractions.

This congress, one of the top events in Transfusion Medicine and service, was again a great success. The excellent presentations and posters from China, the Asian Pacific region and other parts of the world provided knowledge and experiences of new insights and developments. The scientific sessions were organized into eight topics: Management and Organization, Blood Donation Blood Products Transfusion Transmissible Infections Immunohematology Clinical Transfusion Cellular Therapies and Clinical Immunogenetics. The assembly of elites of blood Transfusion Medicine from around the world has further promoted the international exchange and cooperation among participants. The industry exhibition has bridged the gap between cutting edge innovations and practical services.

The key highlights were:
- 1472 delegates attended from 50 countries and regions
- 784 abstracts were submitted, of which 696 were accepted; 51 for oral presentation
- 645 posters were presented
- 31 talks were delivered by invited speakers
- 56 exhibition stands were taken up

As a tradition of ISBT congress, the event commenced with a local day on November 25. Selected from 350 abstracts submitted in Chinese, 36 oral presentations demonstrated the notable progresses made in Chinese blood programs in recent years. Ten winners were granted “2017 Quality Management Award of CSBT” during the opening of the local day. There was a plenary session in the morning, focused on Management and Education at the Blood Center, and three parallel sessions in the afternoon focused on Donor Management and Blood Products, Transfusion Reaction, TTD and Immunohematological Serology and Clinical Transfusion, Cellular Therapies and Immunohaematological Molecular respectively.

Strong support by the Chinese Government to the congress impressed every delegate. The Deputy Minister of the National Health and Family Planning Commission of China, the Directors of Health and Family planning commission of Guangdong Province and Guangzhou city and the Deputy Mayor of Guangzhou municipal government attended the opening ceremony of the ISBT Congress and gave a warm welcome to all participants. Prof. Zhu Yong Ming, the President of CSBT and Dr. Ravi Reddy, the President of ISBT, expressed their appreciations and good wishes to all delegates. During the opening ceremony the ISBT Awards were also presented. The winners are Dr. Kenji Tadokoro from Japan, and Prof. Zhu Yong Ming from China.

The scientific program began with the Plenary Session TRALI Update, and was followed by an academy session on Young Donors, a parallel session on Haemovigilance-Towards Safe Blood Transfusion and the workshop How to Write A Scientific Paper/ Abstract and Get it Accepted In the next congress days, two plenary sessions, five academy sessions accompanied with eight parallel sessions summarized the achievement and development of international Transfusion Medicine.

In addition to the informative scientific program, the delegates also enjoyed the Chinese culture and cheerful social events, from the lion dance show at the opening ceremony, the class of Tai Chi at dawn, to the wide variety of Chinese cuisines, and dances and karaoke at the congress dinner.

On November 29, the day after the congress, around 60 delegates from different countries visited the Guangzhou Blood Centre (GZBC), which is one of the top three biggest blood centres in China and a non-profit institute committed to clinical blood supply, scientific research and education related to Transfusion Medicine.

Finally, thanks to all delegates, speakers, sponsors and exhibitors for their support to ensure it was one of the most successful congresses in the field of Transfusion Medicine in China. We also would like to thank ISBT and the organizing committee for their efforts to make sure all the participants enjoyed hospitality from our hosts.

EDUCATION

ISBT Education

In 2017, the Central Office of ISBT introduced a new scientific social media plan to promote Transfusion Medicine research. Relevant scientific findings with links to the original publications are posted several times a week. There are three categories that are used to label the scientific content of these posts:

#RecentStudy new and relevant findings

#ScienceSeries Original articles or Congress reviews that have been published in ISBT Science Series.

#Didyouknow fun facts, basic knowledge or interesting information.

A *hashtag(#)* is a keyword that labels the content of social media posts making it easier for people with similar interests to find it.

Congress webcasts

All webcasts of the 27th Regional Congress of the ISBT in Copenhagen are uploaded to the ISBT ePortal. From the 27 recordings there are 12 Academy Day talks on Blood supply management, Organisation and quality/clinical governance, Patient Blood Management and TTID. Furthermore, 5 Plenary session talks were recorded on Major Bleeding and on TTID (New developments). The Parallel sessions covered various subjects including Metabolomics in blood banking and Transfusion Medicine, Challenges of Terrorism and catastrophes, Immunobiology of platelets. The session on Blood Supply Management was broadcast live and followed by people from 5 continents.

The first Guangzhou Congress webcasts are released. If you were not able to attend the congress in November, this is your chance to watch great presentations online on the Academy ePortal.

Academy Applications

In 2017 the ISBT Academy supported various trainings, meetings or workshops that were organised around the globe. There are three forms of ISBT Academy support: the use of the ISBT logo, financial support of a maximum of 5000 euros and the endorsement of educational courses.
There are two application deadlines a year, April 1 for events to be held in June-November and October 1 for events to be held in December-May. To submit an application, please go to http://www.isbtweb.org/knowledge-education/.

Endorsement of educational courses

Education of healthcare staff, who are involved in the transfusion process is a crucial to ensure safe blood donation. Therefore, ISBT recently introduced a new form of academy support, the endorsement of educational courses. Two courses have been successful with their application and have been endorsed with use of the ISBT logo. The endorsement is now open for new applications, please submit yours if you are an organiser of an online or offline course. For more information, please go to http://isbtweb.org/knowledge-education/

Interviews

During the 27th regional Congress of the ISBT in Copenhagen several interviews were recorded at the ISBT booth. These Personal Reflections are accessible from the Events menu.

Speaker(s)	Title	Release date
John Semple	Passonate about platelets	9-11-2017
Reinhard Heinschler	Mesenchymal Stem Cells	23-11-2017
Mindy Goldman and Jo Wiersum	Donor health	7-12-2017
Jenny White and Christof Weinstock	Immunohaematology	21-12-2017
Lin Fung and Ulrich Sachs	Granulocytes and Transfusion Medicine	4-1-2018
Anne van Dongen	The emotions of a blood donor	18-1-2018
Yetmgeta Eyayou Abdella and Claude Tayou Tandy	Blood donation in resource-limited regions	1-2-2018
Bernhard Palsson and Olafur Sigurjonsson	Blood storage and metabolism	15-2-2018

ISBT academy launches donor fainting tutorials in Toronto

Peter van den Burg
Chair ISBT working
Donors & Donation

EDUCATION

Fainting of blood donors is one of the most frequent complications. Although donor fainting is innocent in general, it can have great impact on donors, their return for further donations and thereby donor fainting is an important issue for blood establishments.
In general donor fainting is a vaso-vagal reaction. It is a misunderstanding that donor fainting is the direct result of the loss of blood, this is very rare! The differential diagnosis of collapse, mostly fainting caused by vaso-vagal reactions related to blood donation is important. Understanding the mechanisms of vaso-vagal reactions helps us to recognize, treat and advise donors who experience fainting. Mindful that fainting is innocent but consequences, such as injuries or unsafe participation in traffic, can be more serious.

The ISBT is an associate partner in the European granted Donor Health Care (DoHeCa) project. Because of this project I came again in contact with Dr Wouter Wieling who was my supervisor while I was a trainee in 1996. Wouter is an internist and has done much work with respect to syncope and vaso-vagal reactions. Within the DoHeCa project, Wouter initiated an international collaboration with several experts and with this team an e-learning of donor fainting tutorials was developed.

The tutorials are developed and are freely available on the Syncopedia.org website. The working party Donors & Donations of the ISBT and the European Blood Alliance (EBA) have adopted these tutorials and these tutorials are now being implemented on the e-portal of the ISBT academy. The donor fainting tutorials will be public which is made possible by the DoHeCa project and a grant from the ISBT, EBA and the Dutch association of donor assistants. Interested professionals in donor care can register for free and successful participation which will result in a certificate.

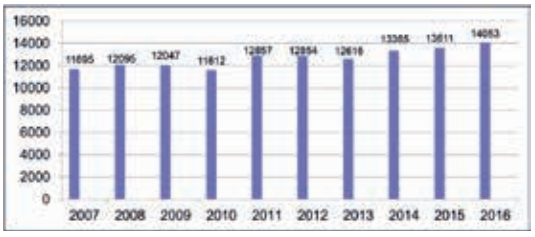
The tutorials via the ISBT e-portal will be ready and launched during the ISBT in Toronto this year.
We are very grateful for all the help and materials that were given by Wouter Wieling.

ISBT ACADEMY

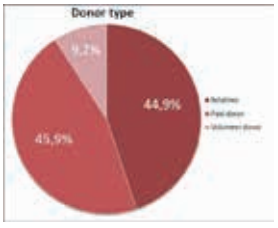
Transfusion service in Armenia

S.S. Daghbashyan
Prof, Director of Haematology Centre after R. H. Yeolyan, President of Armenian Haematology Association

Blood collection in Armenia is realized by 21 blood collecting establishments: 5 regional blood collecting stations, 6 regional blood collecting departments, 10 blood collecting departments in Yerevan and blood bank situated in the Haematology Centre after Prof. R. Yeolyan. In Armenia the average number of blood donations is 15000 per year with a population of 2.986.100. According to the WHO recommendations 2% of the population has to be blood donor to ensure the blood provision of the country including blood components and plasma derived products supply. However, only 0.3% of population donates blood in Armenia, meanwhile the required number of blood donation is 25.000 yearly. According to the last 10 years' data the number of blood donations in Armenia has been increased from 11.695 in 2007 to 14.053 in 2016 (table 1).



The remunerated/paid donors are considered to be the dominant part in Armenia with 45.9%, family donors make up the 44.9% and non-remunerated volunteer donors come to 9.2% respectively (graphic 1). The percentage of volunteer donors has increased over the last 5 years (3.4% to 9.2%, graphic 2).



Graphic 1
Donor percentages in 2016

Blood components produced by blood collection establishments are red blood cells (RBC), fresh frozen plasma (FFP) and platelets. Blood components are produced by the whole blood separation (recover) procedure with centrifuge in Armenia. Apheresis is applied only for the production of platelet concentrates.

Graphic 2
Volunteer donors percent per year (overview of last 5 years

Trombocytopheresis is performed only in Blood bank of Haematology Centre after Prof. R. H. Yeolyan.
The number of released Red blood cells (RBCs), fresh frozen plasma and platelets (including apheresis) was 12.865, 12.228 and 2.956 units respectively in the course of 2016. The percentage of storage data associated with the waste of blood components is usually high in Region (785) in comparison with the index in Yerevan (385). The main reason for such a situation is the absence of the logistics between the blood collection establishments in regions and Yerevan. Adopted lists of analysis for blood screening in Armenia includes: HBV, HCV, HIV1/2, Syphilis and Brucellosis. An additional test for ALAT is obligatory in Armenia. HBV markers are dominant in the list of infections' positive results. HBcor has the highest index in the spectrum of infection markers. The incidence of HBsAg was high in 2015 (42) in comparison to 2016 (19) in Yerevan. The number of HCV cases was 58 and 60 respectively during 2015 and 2016. Blood is tested by immune assay method in Armenia.

Activities of transfusion medicine in Armenia are regulated by:

- "Human Blood and Blood Components Donation and Transfusion Medical Care" Law,
- National Blood Program
- Standards/Legislative Acts on Blood Collection, Processing, Storage and Release.

Armenia is considered to be a CD-P-TS observer. EU Directives on blood and blood components (2002/98/EC, 2004/33/EC, 2005/61/EC, 2005/62/EC) are presented and translated, but haven't been yet adopted in the Republic of Armenia. Good practice guidelines (GPG) are also not implemented in Armenia.

ISBT Science Series

An official publication of ISBT and an affiliated publication of Vox Sanguinis.

The ISBT Science Series:

- Publishes original articles, reviews, workshop reports and rapid communications;
- Is the Society's platform for ISBT congress State of the Science papers;
- Encourages the submission of papers containing data that may be of interest to a particular geographical area;
- Uses a standard peer-review process for all submissions and accepts or rejects manuscripts based on scientific merit and their unique contribution to the field;
- Is an online only publication;
- Is currently not medline indexed but it is the intention of ISBT to apply for indexing in the near future;

Interested in submitting an article to the ISBT Science Series? More information is available on the ISBT Science Series home page and articles may be submitted via manuscript central **https://mc.manuscriptcentral.com/isbt**

ISBT International Society of Blood Transfusion

ISBT ACADEMY

R N Makroo
President,
Indian Society of Transfusion Medicine

The 6th national conference of the Indian society of Transfusion Medicine

ISTM, TRANSMEDCON 2017 was organized in Lucknow, Uttar Pradesh, India from November 3-5, 2017

Five preconference workshops were held on research methodology and biostatistics; therapeutic plasma exchange: procedure, clinical scope and recent advance; recent advance in Transfusion Medicine-Nucleic acid testing, pathogen reduction techniques, buffy coat pooling; advanced immunohematology and quality control and transplant immunology. Live demonstrations and hands on experience were included wherever possible. This year the number of delegates attending the 6th Annual ISTM Congress themed on 'Striving for Quality: Vein to vein in blood transfusion chain' were 752. There were 150 invited guest speakers who covered different aspects of Transfusion Medicine. There were 27 scientific sessions and 3 panel discussions on Donor Deferrals: let us contemplate and work in unison; Types of leucodepletion - What terminology to use? How to explain; what more do we expect from administration? There were interesting discussions between the panellists and the exciting audience. A good number of oral and poster presentations were included.

Continuing the association between ISTM and ISBT for the 6th consecutive year and taking it to newer heights, two plenary session on "Hematopoietic Progenitor Cell Harvest, Banking and Transplants" and "Regulatory and Ethical Issues in Cellular Therapy" were organised by the support of the ISBT Academy on the second day of conference. Dr Mickey Koh, Director-Stem Cell Transplantation, St George's Hospital and Medical School, London educated the audience on Hematopoietic Progenitor Cell Harvest, Banking and Transplants and Dr Doug Sipp, Head of the Science Policy and Ethics Study Unit at the RIKEN Centre, Japan enlightened the audience on Regulatory and Ethical Issues in Cellular Therapy very well. Both sessions aroused tremendous interest among the delegates.

A stimulating and thrilling quiz on Transfusion Medicine was hosted in which 64 post graduate students participated from across the country. The first three winning teams were awarded prizes and certificates. An amusing Indian cultural event was organised followed by a grand conference banquet to close the conference.

Aida Djozo
President of Organising Committee, Vicepresident of UHIT FBiH

Elma Catovic- Baralija
President of Steering Committee UHIT FBiH, Secretary of Organising Committee of Congress

Azra Jahic
President of Congress, President of UHIT FBiH

ISBT ACADEMY

2nd Congress of the haematology and transfusiology society of Bosnia and Herzegovina

After 6 years of rest, the 2nd Congress of Haematology and Transfusiology of Bosnia and Herzegovina (B&H) gathered over 200 participants and professionals in the field of Haematology and Transfusion Medicine. The Congress was held from October 26 to 28, 2017 in Sarajevo. It was organised by UHIT (Association of Haematology and Transfusiology of FBH). UHIT would like to thank ISBT for supporting this event.
The basic motive of this congress was the promotion of haematology profession and Transfusion Medicine in B&H. Transfusion Medicine is experiencing its affirmation and is ready to face to the growing demands of the profession and of all stakeholders. Over 100 abstracts have been submitted for the Congress, of which more than 50 were in the field of Transfusion Medicine. Invited speakers from the region (Croatia, Slovenia, Serbia, Turkey, Macedonia) shared their experiences with their local colleagues.

We are proud that three sessions have been carried out simultaneously (Haematology, Transfusion Medicine and Paediatric Haematology) and a session of patients and young researchers, too.

There was a great interest by the transfusion practitioners. We would like to highlight the key titles:

- How close are we to the EU?
- Transfusion policies and patient blood management
- Blood donation in Slovenia - Perspectives, challenges and expectations
- Confirmatory serology tests for blood donors - how to solve problems?
- Molecular typing of erythrocyte and platelet antigens as a contribution to the safe blood transfusion
- Assessment of screening and diagnostic TTI tests quality
- NAT testing at the Institute for Transfusion Medicine, FBiH
- Error management and transfusion medicine

Thus, all parts of the transfusion chain were covered. It was concluded that the progress of the transfusion practice in B&H was evident and that this trend should be continued following EU recommendations. The national interest is allogenic SC transplantation as a multilateral project. Also, blood safety is a topic of continuous improvement and the goal is NAT testing for the entire country.

The Congress was successful, both in professional and in social part.

ISBT ACADEMY

23rd conference standards and individual approaches in clinical Transfusion Medicine

The conference was organised by the Russian transfusionist association and national Pirogov medical & surgical center and was held from December 13 to 15, 2017. The conference was attended by over 150 specialists from Russia, Belarus, Ukraine, Germany, Netherlands and Japan.

Opening the conference, professor Eugene Zhiburt informed the audience about new Russian national statistics: in 2016 1.196.633 patients (0,82 % of the population) received 3.221.608 blood component transfusions with a total volume of 983.946,2 litres. Head transfusionist of the Russian MoH assistant professor Tatiana Gaponova informed the audience that during the coming year, the technical regulations on blood safety will be replaced by the relevant rules, which presume:

- 100% donor blood NAT testing for HIB, HBV and HCV;
- reduction of plasma quarantine time from 180 to 120 days;
- digital storage of blood service data during 30 years;
- each donor typing for A, B, RhD, C, c, E, e and K;
- platelet cryopreservation;
- plasma lyophilisation;
- pathogen inactivation of plasma (including pooled plasma) immediately after collection with the permission of its immediate clinical use;
- non-ABO compatible transfusions of platelet concentrate in additive solution transfusions;
- increasing storage of platelets up to 7 days.

Professor Mikhail Zamyatin presented the Protocol for the administration of blood products, as well as other medications for restoring the coagulation potential of the haemostatic system, while providing emergency treatment to patients taking anticoagulants for a long time.

The protocol extends to the following clinical situations:

1. Scheduled surgery.
2. Bleeding (spontaneous or caused by trauma, injury or other known causes) in patients receiving anticoagulants.
3. The need to perform an emergency patient, receiving an anticoagulant, a traumatic procedure or other intervention associated with an increased risk of bleeding.
4. Suspected overdose or poisoning with anticoagulants

Ufa regional blood bank shared the information about equal clinical effectiveness of one or double units of platelets pathogen-reduced by UV-amotosalen. Already five regions of Russia (Baskortostan, Yakutiya, Vladimir, Tomsk and Smolensk) deliver omly pathogen-reduced platelets.

Toshio Mazda, as a key foreign speaker, told that in 1985 Japan used a lot of albumin; it derived 3.84 million litres of plasma. This is a quarter of the albumin products in the world. Japanese population was only 1/50 in the world. For this reason, Japan was criticized by the WHO. The Japanese government established guidelines for appropriate use of albumin and FFP. Now albumin usage decreased 1/3. However, self-sufficiency rate of albumin is still only 60%. IVIG and factor VIII derived from plasma is almost 100% self-sufficiency

Sergey Sidorov
Executive Director
Russian Transfusionist Association

now. However, factor VIII from the plasma is only 12.5%; almost all haemophilia patients use recombinant factor VIII.

ABO blood group ratio is A:O:B:AB = 4:3:2:1. It is a similar ratio with Moscow population. Since 1999, the mini-pool NAT, 500 samples pooling for the screening of three viruses, HBV, HCV and HIV was implemented; thereafter, in 2000 the pool size was reduced to 50 samples, and to 20 samples in 2004. With the aim to further improve the safety, the NAT system changed to the single/individual NAT in 2014. Despite being HBs-antigen negative, anti-HBc positive and anti-HBs negative or weekly positive blood are not used for transfusion. If anti-HBs titer is high, the blood is allowed to transfusion.

Specific of Japan is anaphylaxis caused by haptoglobin, due to haptoglobin deficiency is 1/3,000 in Japanese.

Blood transfusion should be different from each country. For examples, blood type is different; allo-antibody screening cell have to include Dia in Japan and Mia in Southeast Asian countries. Mongoloide have to be careful for haptoglobin deficiency. Our goals are to make blood products more safety and more effective. Exchange information between countries is important for progress of sciences.

The next conference in Moscow will be held on 13rd of December, 2018. All colleagues are welcome.

ISBT ACADEMY

Simon Benson
ANZSBT Vice President
representative HAA2017 Local
Organizing Committee

The HAA 2017 annual scientific meeting in Sydney, Australia

The haematology and transfusion communities of Australia and New Zealand come together each year for the combined annual scientific meetings of the Australian and New Zealand Society of Blood Transfusion (ANZSBT), Haematology Society of Australia and New Zealand, and Thrombosis and Haemostasis society of Australia and New Zealand. The 2017 meeting was held at the new International Convention Centre in Sydney between October 29 and November 1 and attended by 1384 delegates, speakers, sponsors and exhibitors. The conference was a great success with 88.2% of respondents rating the meeting either 4/5 or 5/5.

A key element of the conference's success is the international experts who, often travelling long distances, come and share their knowledge and expertise with delegates both in the main programme as well as the less formal but highly regarded "meet-the-expert" masterclasses. This year ANZSBT was fortunate to have Professor Mark Fung, University of Vermont Health Network, Burlington, Dr Cedric Ghevaert, NHS Blood and Transplant, Cambridge, Professor Cassandra Josephson, Emory University School of Medicine, Atlanta, and Dr Connie Westhoff, New York Blood Centre, New York. Their talks covered a wide range of contemporary clinical and scientific topics in transfusion and were perfectly complemented by the superb local (Australian and New Zealand) speakers.

This year the meeting opened and closed with plenary sessions featuring a speaker from each of the three societies namely "Translation of science into the clinic" and "Personalised haematology".

Another popular session was the joint ANZSBT/THANZ debate: "Managing massive blood loss – formula driven (MTP) versus POCT" which as one delegate noted "… was the highlight of this year's meeting for me, it was very entertaining and informative."The ANZSBT's highest honour is the Ruth Sanger Award made to an individual who has made a significant contribution to the field of transfusion medicine. The 2017 oration was delivered by Dr Peter Flanagan, the National Medical Director of the New Zealand Blood Service, former President of both ANZSBT and ISBT. His presentation "Reflections of a journeyman transfusionist" gave a personal and thought-provoking insight into voluntary non-remunerated donation (VNRD).

2017 marked the 50th anniversary of Australia's RhD immunisation programme and this important milestone was the perfect background for a joint ANZSBT/ISBT Academy session entitled "RhD and HDFN". This fascinating area has changed dramatically since 1967 and there were three excellent speakers bringing delegates up to date: Connie Westhoff from the New York Blood Centre demystifying RhD; Helen Liley from the Mater Mothers' Hospital in Brisbane highlighting the current state of RhD HDFN, and Catherine Hyland from the Australian Red Cross Blood Service in Brisbane talking about the challenges in preventing RhD.

ANZSBT would like to thank the ISBT Academy for its generous €5000 grant used to fund travel awards allowing delegates from the Asia-Pacific region to attend the conference. This year's recipients were Dr Bipin Nepal (Grande International Hospital, Kathmandu, Nepal) and Nova Hippy (Dr Cipto Mangunkusumo Hospital, Jakarta, Indonesia). Two other awards were made but the recipients were unable to attend the meeting and the remaining funds will be held over for next year's meeting.

To complement their conference experience award winners were offered the opportunity to visit the Australian Red Cross Blood Service and/or a hospital laboratory which certainly Dr Hippy found extremely valuable. Feedback from Drs Nepal and Hippy, in common with previous award recipients, emphasises they gain invaluable knowledge, information and networking from attending the conference which they then take back to their home countries. Reports from Drs Nepal and Hippy are available on the ANZSBT website.

In conclusion, ANZSBT greatly values its significant relationship with ISBT and hopes this will continue into the future.

Hasan Abbas Zaheer
President, Pakistan Society of Blood Transfusion

ISBT ACADEMY

ISBT Academy training workshop on screening and biosafety in Islamabad, Pakistan

A training workshop on 'Transfusion Transmissible Infections (TTIs) Screening and Biosafety' was organised in Islamabad, Pakistan on January 16, 2018 by the Pakistan Society of Blood Transfusion (PSBT) with the ISBT Academy support. The workshop was attended by managers of blood banks from public, private and NGO sectors, haematology and transfusion medicine trainee doctors, medical technologists, blood transfusion officers and blood bank technicians.

The objective of the workshop was to train the existing workforce in the blood banks on the latest updates in the screening techniques including biosafety and quality control criteria used in TTI screening. The technical sessions included lectures on 'Vein-to-Vein Transfusion Chain', Principles of TTI Screening Assays, Hepatitis B virus screening strategy, Hepatitis C virus screening strategy, HIV screening strategy, Biosafety and Waste Management and Quality Assurance in TTI Screening. The scientific presentations were delivered by experts Mr. Noor-ul-Amin, Medical Technologist, RIC Hospital, Dr. Arshad Malik, Associate Professor, International Islamic Univeristy, Dr. Ahmed Farooq, Ph.D. Fellow and Ms. Saira Tahir (M.Phil), Ms. Kaenat Nasir (M.Phil.) and Mr. Usman Waheed (Ph.D. Fellow) from SBTP.

Pre- and post-course assessment was done to have a systematic collection and analysis of information to improve participants' learning. 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 39% to 73.8%.

In his concluding remarks Prof. Hasan Abbas Zaheer, President of PSBT, thanked the participants and speakers for their active participation. He urged the participants to implement the national standards and guidelines in their blood banks to increase the blood safety through improved quality assured screening and biosafety practices. Souvenirs and certificates were distributed among the speakers and the participants.

WESTERN PACIFIC

The internationalisation of the Australian Red Cross Blood Service from 1996 onwards

Introduction

Dr Michael Fullilove argues in his recently published Boyer Lectures [December 2015] that Australia must shape our international environment like never before. "Australia needs to be a big confident ambitious country open to the world with an effective political system"1.

ARCBS, after its initial formation in July 1996, adopted the Fullilove approach and became a confident, ambitious and successful organisation and over time developed an effective national system. One of its keys to success was adopting an international approach to its development. Fortunately the ARCBS Board was very supportive of such an approach and had pursued their own best practice in corporate governance to set the scene.

It will be argued that "this internationalism strategy" accelerated the adoption of national standards, putting the long standing different State practices into the past and cajoling some of the naysayers along to look forward and achieve better practice

The initiation of ARCBS

ARCBS commenced as a separate Division of the Society from July 1, 1996 with a distinct Board of Management.2 The inaugural chair was John Hasker, a Melbourne businessman, with extensive experience as a CEO in the pharmaceutical and manufacturing sectors. He adopted a skills based approach to recruiting board members and recruited people based on their professional expertise from across Australia.

The CEO [Robert Hetzel] was appointed in October 1996 and was selected for his medical and management experience, although he was not a haematologist. The state Blood Service Directors all being haematologists were not optimistic the new CEO would succeed. These Directors, however, were now accountable to the CEO. This accountability was different to past arrangements where Directors exercised considerable autonomy. Nevertheless, it should be emphasised that prior to the establishment of ARCBS the various State blood services were well regarded internationally. Their performance standards, however, were not uniform or consistent and different States retained different practices due to local conditions or past traditions.

The pursuit of best practice

Benchmarking was introduced to allow the State blood services practices to be compared with each other, as well as other international blood services. International benchmarking was of particular significance in an environment where the organisation was the sole service provider and had no other local peers.
By 2000 the organisation was ready for comparison of practices having developed a standard national methodology. The organisation decided to start international benchmarking with a group of western blood services. The other members initially comprised the National Blood Service (England and Wales), the Canadian Blood Service [chair] and the American Red Cross Biomedical Service. It was named the Alliance of Blood Operators, [ABO].

Different working parties were established reflecting the different blood disciplines. The working parties managed, after much discussion, to agree on work practice definitions with the initial methodology coming from ARCBS. Results were then compared results on a six monthly basis. The project was ably lead from commencement by Dr Sally Thomas from ARCBS.

The ABO has since gone from strength to strength and now comprises a network of over 90 blood operators from North America, Europe, covering a population of 815 million people. Amazingly, common definitions of work practice remain and have proved so beneficial in improving practice.

In 2006, ARCBS also proposed an Asian Alliance known as the Asia Pacific Blood Network [APBN]. The original members were ARCBS [chair], New Zealand Blood Service [NZBS], Japanese Red Cross Society Blood Service HQ, Hong Kong Red Cross Blood Transfusion Service, Blood Services Group HAS Singapore, Republic of Korean National Red Cross Blood Service, Chinese Taipei Blood Service Foundation and National Blood Centre Thai Red Cross Society. Subsequently the Beijing Blood Centre and Macau Health Bureau joined. The network now covers 262 million people and also uses similar work practice definitions to the ABO.

ARCBS achieved great benefit from engaging in comparison of work practice. The State Directors of ARCBS generally did not argue against such practices, so long as the organisation could afford the changes. CEOs of overseas blood services found similar acceptance by their executives . In particular, it was possible to compare costs of practice whilst keeping this knowledge confidential to the networks. This knowledge was particularly useful in negotiations with governments and funding bodies. The knowledge gained from benchmarking and the

Robert Hetzel
A former Chief Executive Officer at Australian Red Cross Blood Service

relationships which developed were extremely valuable in introducing technology changes such as leucodepletion, bacterial testing, and new IT systems.

National standardisation took 10 years to complete and was finally sealed when the national manufacturing computer system was fully implemented [2006]. The health bureaucrats argued that the changes had taken too long. We argued that we were responsible for the nation's blood supply and the public would not tolerate any errors in the system whilst we made the changes. Evolutionary change was much the preferred approach.

Global Advisory Panel [GAP]

There was a third international blood group which completed the international agenda. This idea came from Jim Carlton who suggested we should have a group of Red Cross Blood Services to be able to provide leadership and guidance for other Red Cross Blood Services around the world. This came at a time when International Red Cross was re-examining its role in the provision of blood.

This network was established in 2000 by a small group of Red Cross Blood Service CEOs and was known as the Global Advisory Panel on Corporate Governance and Risk Management of Blood Services in Red Cross and Red Crescent Societies, or what is referred to as GAP. Initial membership was ARCBS [chair], American Red Cross Biomedical Service, Finnish Red Cross Blood Service, Swiss Red Cross Blood Service, Japanese Red Cross Society Blood Service HQ and National Blood Centre Thai Red Cross Society. The group established 10 key issues facing Red Cross/Red Crescent Blood Services. A self-assessment questionnaire was developed covering these issues that could be used by any National Society that manages a blood service. This self-assessment was recommended to be compiled annually to foster improvement and generally this activity has been followed. There are now 14 National Society members of GAP. The group also assists in the development of other blood services and currently is working in Honduras, Bangladesh and Nepal. In 2012 GAP was officially established as an independent association registered under law and governed by an Executive Board now chaired by a senior representative of Belgian Red Cross.

Conclusion

In conclusion, perhaps the most significant indication of the benefit of these international groups, is the fact that they have become stronger and more successful over time, long after the initiators have moved on.
In essence what ARCBS achieved, was to become what is now known as a metanational organisation,5 where innovation comes from melding pieces of complex knowledge drawn from diverse blood services external to the organisation. As Doz et al note "complex knowledge is messy and hard to articulate [tacit knowledge]. It is sticky to its original context because it is easily misinterpreted or misapplied when transferred into another context." Common methodologies made knowledge exchange so much easier .Other blood services gained similar benefits from these activities. The key to continued success of these networks , has been the maintenance of similar work practice definitions.

It is truly amazing that blood services across the world covering a population of over 1 billon people can adhere to similar work practice definitions! This is a great tribute to all those involved. The benefits have been truly remarkable and highlight how a national merger can leverage so much benefit by engaging internationally, being bold and leaving parochialism in the dim, dark past.
Hopefully, this approach could also be adopted by other national organisations that are being developed from State or provincial mergers.

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SOUTHEAST ASIA

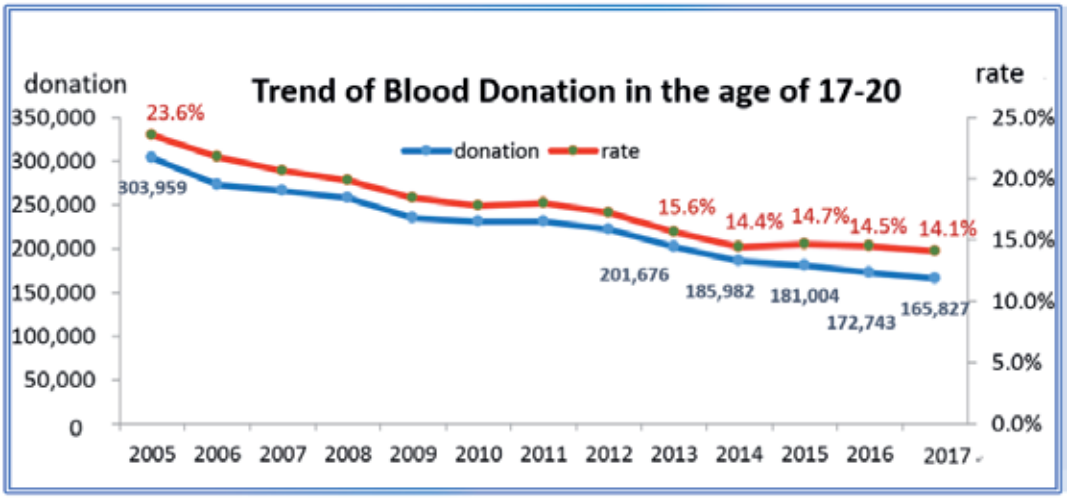
Recruitment of young blood donors in Taiwan

Due to the decline of birth rate and the population aging in Taiwan in recent years, the number of young blood donors (age 17 to 20) has greatly dropped from 303,595 people in 2005 to merely 185,982 people in 2014, a decline of about 39%. We foresaw that this trend will affect future blood supply, which is why on June 14, 2015 we initiated an enthusiastic youngster blood donation plan called "Young Blood" to ensure a stable supply, and by the end of last year, there has been a total of 165,827 donors aged between 17 and 20, where female accounted for 88,162 people (7.5%), and male accounted for 77,665 people (6.5%). The result shows that the decline curve of donors has been alleviated, as shown in the chart below.

A total of 884 young people (age 17-20) donated their blood more than 10 times within 4 years after the introduction of the "Young Blood" program. In an effort to attract more young donors, we invited popular singer(s) beloved by young people as a role model. In addition, on July 4, 2015, former president Ma Ying-jeou also donated his blood while encouraging more young people to join the donation movement.

On March 27, 2016, we held a series of fun activities such as indoor bouldering competitions and basketball shooting competitions, also as a way to boost blood donations by youngsters. As the young people get used to swipe their smart phones all day long in recent days, on October 6, 2016, in collaboration with LINE Taiwan Limited, we created the world's first-ever official account through the LINE APP to recruit blood donors. There are three main functions including "Smart query", "Customized notifications", and a "Specific recruitment notifications". We can easily push our blood recruitment messages and notifications to those young people via the customized social networking application in the smart phones.

The continuous effort over the years has stopped the declining trend of young blood donation gradually. We have actively held lectures and speeches at schools telling students the importance of maintaining a healthy body and regularly donating their blood. Even though Taiwan's national blood donation rate is the highest in the world, it suffers from an irrevocable population aging problem.



Lei Li
Director, Department
of Public Relations
Taiwan Blood Services
Foundation

As in many other countries that is a threat to the stable blood supply for clinical use. To guarantee the health rights and welfare of each person, we must make a stronger effort and encourage young people to join the blood donation, and make the young generation proud to be a part of the medical team in Taiwan.

Former president Ma Ying-jeou (third from right) joined the blood drive on July 4, 2015 and urged on youngsters to donate their blood. So far he has donated 193 units of blood.

Taiwan Blood Services Foundation introduced the LINE official account for smart phones called “Blood”. Its major powerful functions include searching the nearest blood donation site, artificial intelligence Q & A response, customized notification such as blood donation times, laboratory reports and next blood donation date.

Press conference for the “Young Blood” event on October 1, 2017. Second from left at front row is the President of Taiwan Blood Services Foundation Dr. Sheng-Mou Hou, second from right at front row is the Blood Donation Ambassador Miss Pets Tseng.

EASTERN MEDITERRANEAN

Patient Blood Management in Iran linking laboratory to clinic

Mahdi Najafi
Associate Prof of Anaesthesiology, Tehran Heart Center, Tehran University of Medical Sciences, Tehran, Iran.

The second conference on "Patient Blood Management in Cardiac Surgery" with collaboration of Iranian Blood Transfusion Organization (IBTO) was held on November 2, 2017 in Tehran Heart Center, Tehran, Iran. The meeting was aimed at providing the latest achievements on the subject and finding solutions to tackling obstacles in implementing blood management protocols in clinical setting. Iranian Societies of Anaesthesiology, Cardiac Surgery, Critical Care, as well as Universal Scientific Education and Research Network (USERN) joined Tehran University of Medical Sciences to support this event. Physicians from various clinical disciplines lectured on different aspects of transfusion, blood conservation modalities, and coagulation control on the eve of international awareness week on patient blood management.

During three sessions twelve faculty members including immunologist, anaesthesiologist, cardiac surgeon, haematologist and oncologist, paediatricians, cardiac anaesthetist, critical care fellowship, and clinical pharmacist talked on transfusion and coagulation control in cardiac patient. The first session was devoted to transfusion considerations with special focus on the management of preoperative anaemia and modalities of autologous transfusion. Clinical pharmacology and evidence-based usage of medications affecting coagulation system was discussed in the second session. During the third session clinical aspects of bleeding control in cardiac surgical patient with the emphasis on recent joint guidelines of European Societies of Cardiac Anaesthesia and Cardiac Surgery released in Oct 2017 was discussed. Then a panel on "how to tackle problems of implementing blood management in hospital" was held with contribution of scientific societies' representatives and IBTO's chair deputy. Panellists gave four lectures and answered the questions. The relationship between IBTO and clinicians was regarded as a highly important issue in establishment of haemovigilance and blood management protocols.

The conference was accomplished by issuing a statement on the most important requirements for development and reinforcement of blood management concept in Iran. This statement deals with topics such as the importance of national guidelines and clinical protocols and the significance of including these subjects in accreditation criteria for medical centres and hospitals, the proposal to form a high committee with representatives from different clinical disciplines to decide on patient blood management issues in national level, employment of media for public education as this is a patient-centred idea, and need for governmental support to facilitate the availability of medications and equipment deemed necessary for appropriate application of blood management methods. The conference faculty prepared the draft which was approved and signed by participants. It was submitted to Medias and to IBTO for follow up.

This conference was accompanied by a workshop on autologous techniques including retrograde autologous priming (RAP) and cell salvage. As an initiative, some video clips were displayed between talks to review rational for blood management proposal and main aspects of transfusion medicine including adverse reactions. These clips, a number of educational posters, and a booklet given to participants at registration were sources for a competition to win one of nine prizes after answering 30 questions during the conference. Most of the nurses and some interested physicians attended this attractive and entertaining quiz.

A total of 250 participants of this meeting, including but not limited to cardiac surgeons, anaesthesiologists, cardiologists, pathologists, laboratory medicine and transfusion experts, clinical pharmacists, critical care fellowships, general practitioners, per-fusionists, critical care and operating room nurses, got engaged in a comprehensive training course in addition to knowing cutting the edge advances on coagulation control and blood management guidelines. We strongly believe in linking between practitioners and laboratory stakeholders in field of transfusion to achieve the best standards and guarantee the best quality of safe services for the patients as reflected in conference motto: "Blood and blood products: from correct processing toward correct applying".

John Pitman
Associate Director of Clinical Services at Cerus Corporation

Haemovigilance in the United States: slow start, vast opportunities

The United States was among the last upper income countries to implement a national haemovigilance program, but expansion has been steady since the launch of the National Healthcare Safety Network's (NHSN) Haemovigilance Module in 2009. Currently, 317 facilities are registered in the voluntary system, which tracked more than 1.7 million component units in 2016. While the number of units under surveillance in the US exceeds most other national systems, fewer than 10% of transfusing facilities are represented in NHSN – a far cry from the 100% coverage in France and Switzerland, where haemovigilance reporting is mandated by law.

As in other countries, hospitals' concerns about cost and the data collection burden on top of existing regulatory reporting have been significant barriers in the US. Dr. Matthew Kuehnert, former Director of the US Centers for Disease Control and Prevention's (CDC) Office of Blood, Organ and Other Tissue Safety, remembers the debates prior to launching the NHSN module. "Most facilities preferred to wait for a requirement, not recognizing the benefits to the facility," he says. Without a requirement, other methods of enticing participation have been necessary.

CDC has invested in outreach and training; expert-led efforts to refine the NHSN dictionary of adverse event, severity, and imputability terminology, and; improvements to the online reporting interface, including a function allowing the automatic upload of denominator data from facilities' electronic data systems. Collaborations with external partners, including AABB's Center for Patient Safety and the private sector, have highlighted new uses for NHSN data, specifically, inter-facility benchmarking and patient safety monitoring during Phase III clinical trials. Much work remains, but Kuehnert is optimistic when he hears that many enrolled facilities are "seeing improved care and cost savings from prevention of errors."

A bright spot in the NHSN network is Massachusetts. Of the 317 enrolled facilities, 68 are in Massachusetts, which mandated NHSN reporting in 2014. For participants, the state's Department of Public Health (MDPH) publishes a statewide annual report and facility-specific reports for intra-state benchmarking. "Facilities were concerned they would collect these data only for us," says Melissa Cumming, an epidemiologist who oversees haemovigilance at MDPH. "In fact, many tell us they appreciate the ability to monitor trends and new products coming into use – and to compare their performance with peers." In a 2017 paper in Transfusion, Cumming and colleagues described several "keys" to the program's success. These included fostering partnerships with "champions" within facilities, state government and NHSN, and, "the existence of a regulatory deadline."

Looking ahead, Kuehnert believes the vast size of the US healthcare system presents a singular opportunity to improve patient safety and extend the science of haemovigilance. With more than 3,800 hospitals transfusing over 17 million blood components annually, even small increases in NHSN participation would allow analyses on a scale currently unavailable anywhere in the world. (By contrast, the UK, France and Switzerland transfused 5.9 million blood components combined in 2016.) "With more participants, we could drill down into data on issues that have eluded traditional methods of estimation," Kuehnert says. As examples, he says robust data on adverse transfusion reactions could be meaningfully included in cost-benefit analyses of apheresis vs. pooled platelet production methods, or analyses of the impact of bacterial detection methods vs. pathogen reduction.

In Massachusetts, Melissa Cumming is also eager to explore new territory. As strong as the system becomes in Massachusetts, she says the state is currently "operating in a vacuum to some extent and must look outside of the US for comparison data." That would change if other states adopt the Massachusetts approach – a step she understands at least one state is strongly considering. "The more data we have, the less susceptible we'll be to artifacts and noise." After all, she adds, "There is power in numbers."

EUROPE

INTERVAL - a randomised controlled trial to study the safe and effective collection of blood

David Roberts
D.Phil, FRCPath on behalf of the INTERVAL study group

University of Oxford and National Health Service Blood and Transplant (NHSBT)

What is the safest and most effective way to collect blood? This question lies at the heart of the work of blood services. However, the well-established protocols for donating blood are empirical rather than firmly based on well-founded evidence. There is increasing pressure to optimise collection of blood as the impending demographic change will reduce the ratio of possible donors to likely recipients of blood and there is concern about the potentially damaging effect of low iron stores on donor health. Finally, there is the idea for the future to stratify or personalise donation to match the current expectations for service delivery and also to allow efficient collection of blood from donors with specific phenotypes or genotypes.

INTERVAL was a large pragmatic trial enrolled 50,000 donors attending the 25 static donation centres in major towns and cities across England and has now been published in the Lancet (di Angelantonio et al, 2017). The trial used many innovative features to allow enrolment and execution in a routine setting. Donors were consented by blood centre staff and each donor completed baseline questionnaire detailing demographic and lifestyle information at home and on line before randomisation to 8, 10 or 12 week blood collection interval for men or 12, 14, or 16 week intervals for women. Blood samples were taken to regional depots by NHSBT transport before transfer and testing at the UK Bio Centre near Manchester (the hub for the UK Biobank Study).

Adherence to donor intervals was facilitated by making future appointments when attending for donation and a small team to remind donors by text and phone. Attendance was excellent, with over half the donors attending within a few days of their proscribed appointment. During the trial, an increasing number of donors living close to fixed centres were invited to join the study to maintain target recruitment rates. Over 500,000 invites were sent by email by the end of the study. Donation of blood could be easily tracked by NHSBT database and donors completed 6-monthly questionnaires over the internet to assess overall wellbeing were completed.
What did the study show? The study has now shown that blood can be collected safely at any of these intervals with increasing amounts of blood per year collected at short intervals (di Angelantonio et al, Lancet, 2017). Nearly 7 units of blood were collected over 2 years in the 8-week interval group in men compared to just over 5 in the 12 week group and to 3.6 units over 2 years on average for all participants in the two years before the study. The most important secondary outcome of the study was that there was no increase in major side effects or adverse events, no change in reported physical activity or increased neurocognitive function in randomised groups. However, the men and women in the shortest intervals had an increase in self-reported symptoms, including fatigue, shortness of breath on exertion and restless legs syndrome and will are analysing the association of symptoms with donation, haemoglobin and iron stores and trying to understand the biological basis of these symptoms.

The study allowed genotyping and extended biological phenotyping of all participants especially focussing on iron metabolism and these studies will allow us to understand the basis of genetic variation in haemoglobin, iron metabolism and the ability to give blood (Astle et al, 2016). We have also identified 13 genes associated with the restless legs syndrome (Schormair et al, 2017) and a series of other genetic studies are planned in looking at genetic susceptibility to fainting or vaso-vagal attacks, the ability to give blood more often and iron metabolism.

How will we apply these findings? We are already changing the way we test donors and will test an increasing number of donors by direct measurement of their haemoglobin. We are now planning to use the data from INTERVAL to stratify or even personalise donation interval to accommodate the wide range in capacity to donate blood and the future demands for blood.

Acknowledgements
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2018

June 2 - 6
35th International Congress of the ISBT
Toronto, Canada

March 16 - 17
2nd International Conference on Inhibitors in Coagulation Disorders
Milan, Italy

March 22 - 23
Human Platelet Lysate workshop
Zurich, Switzerland

March 25 - 27
Immunohaematology Workshops
Kuala Lumpur, Malaysia

March 25 - 28
7th New Directions in Leukaemia Research (NDLR) meeting
Brisbane, Australia

April 4 - 7
III Eurasian Congress of Transfusiologists,
Astana, Kazahstan

April 12 - 14
Arab Transfusion Medicine Forum
ATMF13Tunis, Tunisia

April 24 - 25
International Consensus Conference on Patient Blood Management
Frankfurt, Germany

May 4
IX International Congress on Blood Donation and Transfusion Medicine and the 50th Anniversary of AVIS Campania
Naples, Italy

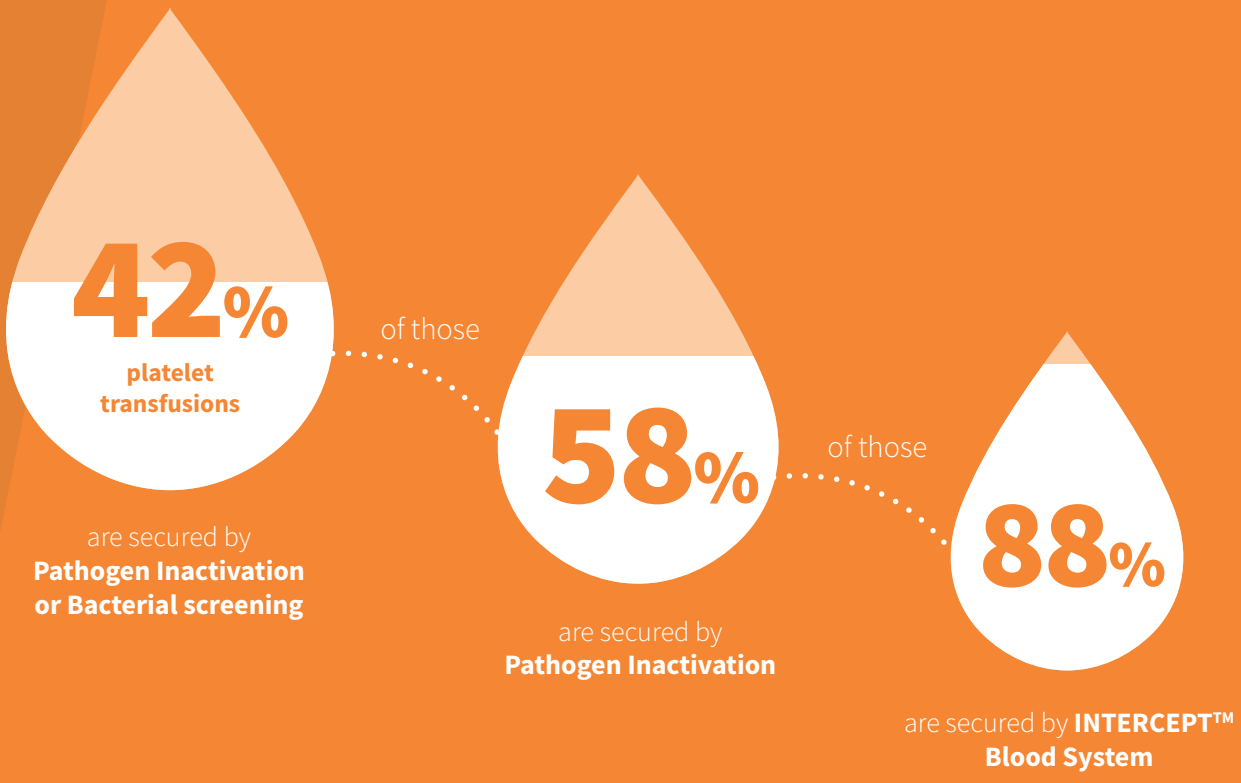
May 24 - 26
XVth European Symposium on Platelet and Granulocyte Immunobiology (ESPGI)
Ede, The Netherlands

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

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References

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

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