TRANSFUSION TODAY

Transfusion Today | **Number 113, December 2017**

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Contents

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Judith Chapman

Editorial

The International Haemovigilance Network defines haemovigilance as a set of surveillance procedures covering the whole transfusion chain (from the collection of blood and its components to the follow-up of recipients), intended to collect and assess information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence or recurrence.

There are six useful articles related to different aspects of Haemovigilance in the focus section of this issue of Transfusion Today. Haemovigilance was introduced over 20 years ago and over the last 20 years the information obtained from haemovigilance reporting has helped to improve blood transfusion and patient safety worldwide. Knowledge has been gained about the errors that occur and how they should be addressed both in the laboratory and clinical settings. The introduction of haemovigilance was one of the drivers for the introduction of the role of Transfusion Practitioner or Transfusion Safety Officer who now play a key role in patient safety related to blood transfusion.

This issue also gives much information about the 35th International congress in Toronto, Canada where a really exciting scientific programme has been put together. ISBT congresses have a unique atmosphere of collegiality, with many opportunities to network and engage with fellow professionals from across the globe. They also offer great value for money compared to other scientific congresses and so we hope you will join us.

I wish you season's greetings and a successful 2018. See you in Toronto!

Meghan Delaney
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Adverse Effects Related to Blood Transfusion

Blood transfusion has never been safer. This is due to the continual incremental advancement in laboratory technology to detect blood borne pathogens that was ignited during the AIDS epidemic in the 1980's.[1] The improvement in safety due to blood donor testing in industrialized nations cannot be understated, as the risk of HIV transmission has been drastically cut from 1 in 100 to 1 in 8 million units.[1,2] Decreased risk is also attributed to improvements of the design of the blood donor questionnaire and deferral policies.

Although the risks for transmission of infection has decreased, the risk of a patient suffering an adverse event due to a blood product transfusion remains. There has been an international movement to decrease transfusion and specifically reduce unnecessary transfusion. Still, blood product transfusions is the one of the most common procedures carried out in hospitalized patients.[3] When prescribing a transfusion, clinicians should be able to explain the risks and weigh the benefits for and against the therapy to the patient. When an adverse event does occur, clinicians must be able to treat all sequelae of blood transfusion. This is challenging because the pathophysiology of adverse events is varied, making prevention and treatment also heterogeneous.

Common Adverse Events

The most common adverse event is allergic transfusion reactions. Allergic reactions are mediated through antigens in the blood product causing mast cell degranulation and histamine release in the patient. The majority of allergic reactions are mild to moderate and can be treated with antihistamines and supportive therapy. Another common category is febrile non-haemolytic transfusion reactions (FNHTR) which are caused by antigen-antibody interactions or inflammatory mediators.[4] FNHTR are managed supportively, however, the possibility of more hazardous causes such as haemolysis and sepsis should be evaluated. Red blood cell (RBC) alloimmunization is the formation of IgG antibodies directed at foreign blood group antigens after exposure through transfusion or pregnancy. The sensitization event is often clinically silent, exerting its effect later as an acute or delayed haemolytic transfusion reaction, delayed serological transfusion reaction, or it can impact future pregnancies as haemolytic disease of the foetus and newborn (HDFN).[5] The prevalence of RBC alloimmunization differs in patient populations according to their underlying diagnosis and immune status, although any patient is at risk. The rate of transfusion related circulatory overload (TACO) is difficult to ascertain given its overlapping clinical findings with common pathways for clinical decompensation in the hospitalized patient.

Uncommon Adverse Events

Uncommon adverse events are typically the most clinically severe with the possibility of mortality, although common adverse events can have a severe clinical course. For instance, transfused related acute lung injury (TRALI) is one of the leading causes of transfusion related death. The rate of TRALI has decreased as the understanding of pathophysiology of donor derived HLA antibodies, changes in collections and testing have advanced. However, there are alternative mechanism under study that do not appear to be caused by donor HLA sensitization.[6] Anaphylaxis is the extreme of the allergic type reaction. Patients with history of anaphylactic transfusion reaction require a thoughtful approach in consultation with transfusion medicine professionals to determine the best approach for subsequent transfusions to prevent future occurrence. Acute haemolysis and hyperhaemolysis can be severe and life-threatening manifestations of previous RBC alloimmunization and/or an incorrect blood component transfused. The underlying pathophysiology of hyperhaemolysis remains elusive; it is mostly found in patients with inherited hemoglobinopathies like sickle cell disease. The entity of hypotensive transfusion reaction appears to be idiosyncratic or related to filters,

medications and/or extracorporeal circuits. Post-transfusion purpura (PTP) occurs following sensitization to foreign platelet antigens, typically HPA-1a. Patients with PTP suffer severe thrombocytopenia after re-exposure to the antigen through transfusion and are at risk for bleeding. Transfusion related graft-versus host disease is a nearly uniformly fatal manifestation of proliferation of donor lymphocytes in the transfusion recipient. It can be prevented by blood product irradiation for all cellular blood components that are transfused to patients at risk. Coming full circle to infectious complications of blood transfusions - septic transfusion reactions continue to be a persistent cause of transfusion related morbidity and mortality. The greatest risk is with room temperature stored platelet products that can be contaminated with bacterial skin flora. The technological advancement of bacterial testing of platelets and pathogen reduction are poised to decrease the related risk.[7]

The advancement of blood product safety should be celebrated as a success of modern medicine. At the same time, continued vigilance, education, study of mechanism and cost-effective measures are needed to create a future where blood transfusion is safe and available to all adults and children worldwide.

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	Prevalence (per 100 000 units transfused)
Allergic transfusion reaction	112·2
Anaphylactic transfusion reaction	8
Acute haemolytic transfusion reaction	2·5–7·9
Delayed haemolytic transfusion reaction	40
Delayed serological transfusion reaction	48·9–75·7
Febrile non-haemolytic transfusion reaction	1000–3000
Hyperhaemolytic transfusion reaction	Unknown
Hypotensive transfusion reaction	1·8–9·0
Massive transfusion associated reactions (citrate, potassium, cold toxicity)	Unknown
Post-transfusion purpura	Unknown
Septic transfusion reaction	0·03–3·3 (product dependent)
Transfusion-associated circulatory overload	10·9
Transfusion-associated graft versus host disease	Extremely rare (near 0%) with irradiation or pathogen reduction methods
Transfusion-associated necrotising enterocolitis	Unknown
Transfusion-related acute lung injury	0·4–1·0 with mitigation (varies by component and post-implementation of risk mitigation strategies)

Table 1: Rates of transfusion reactions

Errors in Transfusion Practice

Paula HB Bolton-Maggs
Medical Director, Serious Hazards of Transfusion, Manchester Blood Centre, Manchester UK

For the past 20 years the UK national haemovigilance scheme, Serious Hazards of Transfusion (SHOT), has reported adverse events and reactions related to blood transfusion practice. Many of these are caused by errors (overall the most frequent is the transfusion of an incorrect blood component IBCT), and a smaller number (12% in 2016) are reactions which cannot be predicted or avoided, including acute allergic/febrile reactions and pulmonary complications (the main contributor to death, 53% 2010 to 2016, and serious harm).

Errors may occur in both the laboratory and clinical environment and leading to serious clinical outcomes including renal failure, respiratory failure or death. IBCT includes transfusion of the wrong component, or one without essential requirements for that patient such as irradiation or specially selected phenotypes for patients with haemoglobinopathies. It includes ABO-incompatible transfusions.
SHOT defines 9 steps in the transfusion process (Figure 1) which may each be undertaken by a different healthcare professional, each step relying on correct completion of the previous step. SHOT data show that the number of errors across these steps ranges from 1 to 6, with a median of 3, demonstrating that if each individual performed their step correctly many errors would be avoided or detected. A third or more SHOT reports (41% in 2016) are near miss events (i.e. detected prior to transfusion), most often 'wrong blood in tube' errors detected in the laboratory because there is a previous (different) group. Most are caused by poor practice where the patient has not been adequately identified and/or samples not labelled at the bedside. In 2016 there were 3 ABO-incompatible red cell transfusions but an additional 264 near misses which could have resulted in ABO-incompatible transfusion. This demonstrates that practice needs to be improved.

Overall, 87% SHOT reports in 2016 related to errors, all potentially preventable. Inadequate communication is a major contributor, e.g. clinicians failing to inform the laboratory that the patient has a haemoglobinopathy (so requires specially selected phenotypes), or has had an allogeneic stem cell transplant with a change in ABO group. Health care workers rarely intend to make mistakes or cause harm. The term 'Human Factors' defines how a human interacts with processes, systems, equipment and the environment. It is not only about factors relating to the person themselves, but a badly designed system (e.g. inadequate or poorly trained staff) or piece of equipment (e.g. a laboratory computer system which has not been validated properly) may also lead to errors and incidents. 'Human Factors' describes the universal tendency of people to make mistakes, often due to interruption or distraction, or poor communication. Such errors are rarely intentional. When incidents occur, all contributory factors should be examined to determine not just individual factors but also whether the working conditions or environment can be adjusted (e.g. more staff) to reduce the risk of recurrence. This is one of the purposes of haemovigilance.

Correct patient identification at the time of blood sampling and then at the time of transfusion is key, and SHOT recommends use of a final bedside checklist ('be like a pilot') to include positive patient identification (i.e. the patient is asked to state their full name and date of birth), check of the unique patient identification number, check that the component is the correct one and compatible, and includes any specific requirements. This final bedside check can identify many of the errors and if done properly will make transfusion safer and save lives. Use of a transfusion checklist is now recommended in the UK as standard of care (SHOT 2017) and endorsed by the Chief Medical Officer. The final check will not, however, detect instances where the initial blood sample was taken from the wrong patient; these can be identified by finding a blood group different from a previous one, and is the rationale for the recommendation for a check group sample in all patients who have never been transfused before (Milkins et al. 2013). This guideline has been taken up by 73% of UK hospitals (NEQAS survey data, 2017).

Conclusion: Over the past 20 years of haemovigilance, blood components have become increasingly safe. The main threat to patient safety remains the Human Factors to which nobody is immune. Two safety checks can identify these, the check group sample and the final bedside check.

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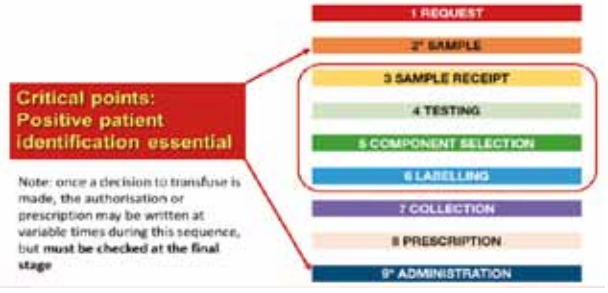
Figure 1: The Transfusion Steps



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Setting up an Effective Haemovigilance System

The goal of haemovigilance is to identify adverse events in the blood transfusion chain to target areas for improvement, thus haemovigilance is integral to quality management within the blood transfusion chain. The establishment of a robust haemovigilance system requires effective co-ordination between all the stakeholders in the blood transfusion services. In a broad sense, the system needs to be established with a two pronged strategic approach which defines the essential requirements at the national/policy making level and the local/report generation level. At the national level success will depend upon effective leadership, governance, co-ordination and implementation. Haemovigilance should be included in the national blood policy and regulatory framework for blood safety in a country. Adequate availability of financial and technical resources for initiation and sustenance is required. Central haemovigilance committees/steering groups of experts need to decide on three basic questions; 1) What is to be done? 2) How will it be done? and 3) Who will do it?

The first question seeks to define the scope of haemovigilance which essentially is as wide as the blood transfusion chain. It includes complications of blood donation, errors in blood processing, testing and release, adverse events in transfusion recipients, near misses (these offer the opportunity of identifying error prone areas in the clinical transfusion process) and rapid alerts. Option of such a comprehensive versus a restricted scope has to be weighed. In most of the countries haemovigilance began with reporting of adverse reactions in recipients. As the system gains strength, the scope can be widened.

The second question addresses the organizational set up for the reporting mechanism. Whether haemovigilance would be voluntary or mandated by law or even a mixed option, where there could be an obligation to report only serious adverse reactions. Categorization of transfusion reactions and complications of blood donation as per international consensus allows information sharing and data comparison between different countries. Haemovigilance report captures a large amount of data – clinical and transfusion details, laboratory investigations, type of adverse reaction, severity and imputability. The details are necessary for subsequent analysis, hence uniform reporting formats are required. Haemovigilance data is sensitive, the system must ensure its confidentiality and security. Individuals are neither named nor blamed.

The third question addresses the role and responsibilities of staff at various levels of the system. For recipient haemovigilance, bedside transfusion staff is sensitized for early recognition and reporting of the transfusion reaction to the blood centre where after relevant investigations, a final transfusion reaction report is prepared and submitted to the regional/national haemovigilance office/centre. In some countries transfusion nurses or transfusion practitioners are authorized to send haemovigilance reports. Complications in blood donors are reported by blood centre staff. Awareness about the haemovigilance programme and training of staff who will be involved in reporting is essential for its success. Expert groups and hospital transfusion committees can play a significant role here.
Haemovigilance reports have to be validated (reviewed for being consistent with standard definitions) by expert groups, for analysis and collation of data. An annual haemovigilance report should be generated including the risk assessments and specific recommendations by expert group for reducing reactions and errors. These recommendations should ideally translate into guidelines and policies for blood safety.

National systems can be further strengthened by international linkages for exchange of information, comparison of methods for data analysis and harmonization of definitions. In addition it creates a global database for gaining insight into both common and region/country specific adverse events.

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"All in all, the results of blood transfusions are already highly satisfactory, and we have reason to hope that a thorough study of cases with undesirable after-effects will help us to assess the significance of the suspected causes and perhaps reveal unknown causes, and thus finally virtually eliminate the slight risks which transfusion still involves."

Karl Landsteiner, Nobel Lecture December 11, 1930

An Overview of International Haemovigilance Collaborations

The concept of reviewing all adverse events related to transfusion and using the lessons learned to reduce or eliminate them has been around since the inception of blood banking. In the early 1990's, Japan and France, followed by other countries, began formalizing this pursuit across the whole transfusion chain, creating the national haemovigilance systems we know today. In some countries, haemovigilance started at local (hospital or blood centre) level, gradually become increasingly centralized, until becoming a formal national or regional program. In other settings, national mandates established national or regional organizations or collaborative activities. Haemovigilance can now be considered a global effort, with clinical experts, regulatory bodies, non-profit organizations, and haemovigilance systems around the world sharing best practices and working together to identify common problems and provide global solutions and resources. This brief article summarizes but a few of the current global collaborative efforts that ISBT and its members are supporting.

Recipient Surveillance Definitions

Definitions are always a work in progress. Currently, there are at least three major collaborative efforts to further refine specific recipient surveillance definitions:

1) **TACO:** After several drafts, a revision of the TACO reporting criteria is entering phase II validation, where international experts are asked to use the draft criteria against 26 standardized cases involving pulmonary adverse reactions. A TACO definition consensus conference is being planned for October 2018.
2) **TRALI:** Another group is revising TRALI reporting criteria. As of this writing, they are in the second round of questions using the Delphi communication technique.
3) **PAEDIATRIC DEFINITIONS:** Finally, experts are at the earliest stages of forming a subgroup that will attempt to systematically address adverse transfusion reactions in paediatric populations.

Donor Surveillance Definitions

The first globally harmonized donor haemovigilance definitions were released in December 2014 from a collaboration of experts from ISBT WP on Haemovigilance, International Haemovigilance Network (IHN), and the AABB Donor Haemovigilance Working Group. The group completed the validation of the terms in fall of 2016 with the help of 54 participants around the world, and has been analysing the results. The manuscript is expected to be submitted by the end of 2017. The comments and data collected so far show that while the terms cover donor adverse events well, there are several opportunities to help make the categories and definitions more objective and clear with the next revision.

Resources

There are several wonderful collaborative resources available:

1) **WHO:** The World Health Organization (www.who.int/bloodsafety/en) has several resources on their website, including "A Guide to Establishing a National Haemovigilance System" and a "National Haemovigilance System checklist," to which ISBT, IHN and others have contributed.
2) **NOTIFY LIBRARY:** The Notify Library (www.notifylibrary.org) is a free, global collaborative effort to share educational resources on peer-reviewed adverse outcomes associated with the clinical use of medical products of human origin, including organs, tissues, and cells, and now blood.
3) **OTHER RESOURCES:** The internet contains a wealth of resources in haemovigilance, , such as reports, templates and other documents, including from ISBT, IHN, and AABB. ISBT's Working Party website (www.isbtweb.org/working-parties/haemovigilance) has links to the validation exercises, and the ISBT Forum is a space to share educational materials and dialogue with member experts

Conclusion

We want to thank all of you who make transfusion medicine safer for donor and recipient alike every day. We especially thank you for continued efforts in helping with all the various haemovigilance projects out there, not just the ones listed, above. If you are interested in helping, feel free to let us know. The ISBT Working Party is open to all ISBT members, so please join us and come along to our next meeting at the ISBT Congress in Toronto in June 2018.

ISBT works closely with IHN and there is reciprocal representation on each organisation's leadership team: Kevin Land, as chair of the ISBT Working Party is a member of the IHN Board, and Erica Wood, as president of IHN, on the ISBT WP committee.

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The Role of the Transfusion Practitioner in Haemovigilance

Haemovigilance is now an established part of the safe management of blood process for patients; however, the part played by the Transfusion Practitioner within haemovigilance is less well known. Transfusion Practitioner (TP) is a term used to encompass the many different roles that exist in transfusion medicine. These roles include but are not limited to, transfusion nurses, transfusion safety officers, haemovigilance officers, patient blood management coordinators. The focus of this article is to show the role of the Transfusion Practitioner (often referred to as a TP) in haemovigilance.

Haemovigilance can be defined as a set of surveillance procedures covering the whole transfusion chain from the collection of blood and its components to the follow-up of its recipients, intended to collect and assess information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products and to prevent their occurrence and recurrence (thesis of Dr. J Wiersum-Osselton, the Netherlands 2013). Most TP's work in hospitals with a focus on the recipient side of the transfusion chain.

The TP involvement in Haemovigilance includes the investigation and reporting of transfusion reactions internally and externally to national Haemovigilance schemes. By conducting a thorough process review and communicating directly with clinical staff or patient, the TP can provide additional details that are needed to complete investigations. This extra information assists with the conclusion of the transfusion reaction investigation and recommendations for future transfusion plans for the patient.

Similarly, the TP is involved in adverse events reporting, where they often carry out root-cause analysis and in collaboration with others work on corrective and preventative measures. Surveillance is often achieved through audits which help to identify gaps in staff knowledge, topics for future education and contribute to quality improvement.

The TP acts as a liaison between the clinical and laboratory settings improving communication and understanding. They also liaise between the hospital, the blood supplier and the national haemovigilance agency. To this end, an essential part of the TP role is excellent communication and collaboration skills as they interact with staff on different levels, in multiple settings.

TP's promote safe transfusion practice through their participation in the development of much-needed resources, combining excellent knowledge in this field to support changes and quality improvement in transfusion policies, procedures, reference guides, digital systems, and educational resources. They also participate in the development and delivery of staff education, for instance, pre-transfusion sample collection, blood administration, and transfusion reactions. Staff education by a TP may be formal in the form of lectures, electronic and online and informal when staff can discuss a case or seek advice and ask questions. By maintaining a visible presence in the clinical setting, the TP ensures that staff have access to information and so support improved transfusion outcomes.

TP's (that must now begin to sound like a superhuman) participate in transfusion committees and other professional groups that strive to improve practice on regional and national levels. TP's also collaborate nationally and internationally to develop the role, learn from each other and alert each other of adverse events quickly. In most countries, this is the only way to share knowledge, best practice and enhance quality because no specialised training for TP's is available.

It is hoped that this article has demonstrated that the TP, a role which is not yet established in all countries, can help to enhance transfusion and patient safety. Unfortunately, in many jurisdictions, they have limited formal status. There is wide variation in working hours, allocated tasks, payment,and training. It is hoped that these issues are addressed over time.

The TP Steering Group, part of the Clinical Transfusion Working Party is conducting a survey to help better understand the role of the Transfusion Practitioner amongst the ISBT member countries and beyond. The TP Steering Group would be very much appreciate it if the time could be found to complete the survey. It is as important for those that do not have a Transfusion Practitioner to complete the survey as it is for those that do, so that ISBT gets an international picture of how the Transfusion Practitioner role might be part of the future of transfusion medicine. To access the survey, please visit www.surveymonkey.com/r/survey _ TP

This year has been a very special year for us; it has been now 40 years that we work by your side. No matter where you are, you probably visit us on our booth to celebrate this anniversary. We had the occasion to be part of **ISBT in Copenhagen, SFTS in Bordeaux, BBTS in Glasgow, AABB in San Diego** and **ISBT Asia in Guangzhou.** We had such a great pleasure to celebrate it by your side.

This years is ending but we are still preparing the future by your side with innovative products with the Macopharma quality. Our goal is still to customize solutions for you.

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Appropriate Use of Blood

Blood transfusions have been identified as one of the most over-used therapies both in the United States by 'Choosing Wisely', an initiative which supports evidence based care to minimize the harms of over treatment highlighting five recommendations to minimise blood use[1], and in England where the use of transfusion is audited by the National Comparative Audit of Blood Transfusion programme.[2] Variation has also been observed in transfusion rates for commonly used indications for blood use among developed countries worldwide. This variation in the use of transfusion persists, despite the publication of numerous clinical practice guidelines which might have been expected to standardise practice.[3]

Patient Blood Management is an increasingly used international term to describe an evidence-based, multidisciplinary approach to optimising the care of patients who might need transfusion.[4] It encompasses measures to avoid transfusion such as anaemia management without transfusion, cell salvage and the use of anti-fibrinolytic drugs to reduce bleeding as well as restrictive transfusion. It ensures that patients receive the optimal treatment, and that avoidable, inappropriate use of blood and blood components is reduced. Restrictive transfusion practice is blood transfusion therapy given only when the potential benefits are deemed to outweigh potential risks, and in which there is a goal of minimising the use of blood.[5] While the risks of transfusion are known, its benefits to patients are less certain outside the immediate management of major haemorrhage. A 2016 Cochrane meta-analysis of 31 trials in over 12,000 patients compared restrictive transfusion to liberal transfusion strategies.[6] The trial interventions were split fairly equally with regard to the haemoglobin concentration used to define the restrictive transfusion group. About half of them used a 70 g/L threshold, and the other half used a restrictive transfusion threshold of 80 to 90 g/L. Restrictive transfusion strategies reduced the risk of receiving a red cell transfusion by 43% across a broad range of clinical specialties. There was no difference in 30 day mortality or any of the other outcomes assessed including cardiac events, myocardial infarction, stroke, thromboembolism, and infection. There were insufficient data to inform the safety of transfusion policies in certain clinical subgroups, including acute coronary syndrome, myocardial infarction, neurological injury/traumatic brain injury, stroke, cancer, haematological malignancies, and bone marrow failure. The authors concluded that these findings provide good evidence that red cell transfusions can be avoided in most patients with haemoglobin thresholds above 70 to 80 g/L.

Blood utilisation in hospitals is undergoing renewed scrutiny not only in relation to clinical patient outcomes, but also because of the potential for significant cost savings by hospitals, not only in the acquisition cost of the units of blood but also in laboratory testing, storage of blood, administering blood and monitoring patients.

How else can the evidence supporting restrictive transfusion and other PBM measures be accelerated into routine transfusion practice? It is clearly a major task to educate and train the many clinicians prescribing blood and to monitor their transfusion practice. Recent studies suggest that the use of electronic blood ordering with clinical decision support may provide an effective way of implementing restrictive transfusion practice and for providing timely data on blood usage so that clinicians and clinical teams can compare their practice with others.[7-11] Further work is need to understand how to configure these systems and provide education and training to optimise the influence on clinicians' behaviour.

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Ravi Reddy

It seems that it was only a few months ago that I assumed the role of President of the ISBT Board at the congress in Dubai and it is hard to believe that more than a year has passed as we reach the end of 2017. This has been another busy and successful year for ISBT with two congresses, ISBT Academy support for a large number of regional meetings around the world and an ever increasing focus on education initiatives via the ePortal where there is a wealth of educational materials including webcasts of presentations from congresses, regular webinars and the launch of the online live journal club in September. The new Code of Ethics which was approved in Copenhagen was launched in September and is now available in six languages.

The implementation of the 2015-2018 strategy is progressing well. The Board reviewed the strategy and made some modifications. These include further increasing awareness of the ISBT Academy programmes and providing support to more meetings regionally; Regional Directors playing a more active role in the regions by interacting with National Societies and Organising Academy Day events; and ISBT working parties partnering with stakeholders to prepare/review guidelines when required. Many of you will be aware of the revised ISBT affiliate member category where all members/employees of the affiliate will have access to a suite of material from the ISBT Academy ePortal, including presentations from ISBT congresses, guidelines, and an educational eBook. You can get more information about this on the ISBT website.

The focus of this edition of Transfusion Today is on haemovigilance, a critical component of the transfusion medicine value chain. Given that an Haemovigilance System covers surveillance and reporting of adverse events/near misses over the entire transfusion medicine process from the donor, donation and processing of blood and its components, through to their provision and transfusion to patients, and including their follow-up it must be a priority for every country. Ideally the management of the system should be independent of the Blood Transfusion Service to ensure objective reporting and analysis. Unfortunately, haemovigilance systems are not yet well established especially in the developing countries and where they are established, under reporting of adverse events remains a challenge.

The benefits of a well-functioning haemovigilance system are significant resulting in ongoing improvement to quality and safety systems and leading to enhanced donor and patient safety. It is thus critically important that all stakeholders buy into the system staring with the National Blood Authority. It is also important for sufficient resources to be deployed to implement and manage the system. ISBT and other societies play an important role by ensuring that talks and workshops related to haemovigilance programmes are held at congresses. I would like to take this opportunity to thank all ISBT members, staff of the management office and members of the ISBT Board for your contributions and support this year. Best wishes for the festive season and a Happy New Year.

Ravi Reddy

Welcome to our new members
(September 2017 - December 2017)

Africa
- **SOUTH AFRICA:** Latoya Van Niekerk

Americas
- **UNITED STATES:** Xin Lin, Janice Hodge, Xiaomei Zhu, Kerry O'Btien

Eastern Mediterranean
- **PAKISTAN:** Munira Borhany

Europe
- **BELGIUM:** Caroline Megali
- **BULGARIA:** Sanya Daneva Amalieva
- **FRANCE:** Nina Prunier, Virginie Le Coent, Cecile Aubron, Sebastien Baradeau
- **UNITED KINGDOM:** Shruthi Narayan, Anthony Poles, Simon Stanworth
- **NETHERLANDS:** Femke Noorman, Anil Dissanayake
- **MACEDONIA:** Emilija Kochovska
- **TURKEY:** Birsen Mutlu
- **GREECE:** Evangelia Eleni Christaki

South East Asia
- **INDONESIA:** Sri Inayah, Sasi Widury, Muhammad Amiruddin, Widyarman Setiadi Rasman, Nurhayati Ahman, Sri Mulyati Kromodimejo, Fitriani Fitriani, Ulfah Siata
- **INDIA:** Shailendra Vashistha, Rajan Chaudhary, Soumya Nalli, P Srivenkateswara
- **SRI LANKA:** Dinayadura Kheshini Nadeera De Silva, Prabhu Sundararaja, Janaki Dissanayake, Theshanthi Welivitiya, Kumudika Gunawardana, Wenida Waduge Morris Termon Kularathna, Dhammika Athukorala, Venura Kithdev Illangamudalige
- **THAILAND:** Anuphan Thongmuk, Viroje Chongkolwattana, Apiwan Pipatvanichkul, Aumnaj Siriwong, Ploymanee Suwanwootichai

Western Pacific
- **CHINA:** Bo Zhang, Wan Yun, Ou Xu
- **HONG KONG:** Leung Yuk Yan Rock
- **MALAYSIA:** Siti Salmah Noordin, Iliassa Intan Iliana, Nor Hafidza Haron, Khairulnisa A Manap, Rosyidi Rejab
- **SINGAPORE:** Swee Jin Tan, Jacqueline Lim, Marvin Chan, Hui Mian, Hartirathpal Kaur, Carlum Shiu
- **AUSTRALIA:** Praveen Pathak, Rachal Davis, Philip Crispin, Ben Myers, Jacob May, Kelly Burns, Mickael Gieules
- **NEW ZEALAND:** Suzi Rishworth
- **PHILIPPINES:** Sherjan Kalim, Roland Gorgonia, Marris Bonga, Josephine Ong
- **SOUTH KOREA:** Jeong Soo Lee, Kilsoon Kim, Cheol ho Jung, Ji Young Seo
- **TAIWAN:** Ling- I Hsu, Fang-Yeh Chu, Ho-Sheng Wu

Elections for the ISBT Board of Directors 2018

Call for nominations

The ISBT Board of Directors is entrusted with the management of the Society including strategy, policy and objectives and ensures that the Society acts in accordance with the Statutes and resolutions adopted by the General Assembly. The Board of Directors generally meets face to face twice a year. The Board works closely with the staff at the ISBT Central office.
According to the statutes of the ISBT, elections for the Board of Directors will be held prior to a General Assembly (Article 16.1). The ISBT Secretary General must notify all members of the elections at least six months in advance of the relevant General Assembly and call for nominations to fill vacancies on the Board of Directors (Article 16.3(a)). The next General Assembly will be held in Toronto, Canada on June 5, 2018.
Individual, Honorary or the designated representative of Affiliate members who are accepted members of ISBT on December 12, 2017 at 17.00 Central European Time are invited to nominate candidates for the following positions on the Board of Directors and the Executive Committee:

President Elect
Vice President
Secretary General
Regional Director Northern Americas (Canada and USA)
Regional Director Southern Americas (Excluding Canada and USA)
Regional Director Europe*
Regional Director Eastern Mediterranean
Regional Director Western Pacific*

* Nominations cannot be accepted for members resident in the UK or Australia because there is already a member from each of these countries on the Board. Article 13.3 (f) does not permit two Regional Directors from the same country.

Nominees can only be Individual members and must be accepted members of ISBT on December 12, 2017 at 17.00 Central European Time.

Please read the call for nomination notice which can be found on the Elections 2018 page of the ISBT website. The nomination process will be online and details and a link can be found on the Elections 2018 page of the ISBT website.

Nominations open on December 12 and the official deadline for receipt of nominations is February 13, 2018 at 23:59 Central European Time.

Prizes and Awards 2018

This is your very last opportunity to apply or nominate for the Jean Julliard Prize and the ISBT Developing Country Award. For more information go to our website www.isbtweb.org.

Jean Julliard Prize

This prize recognises clinicians or scientists who are less than 40 years of age and have a noteworthy portfolio of recently published work contributing to advances in transfusion medicine. The prize is a sum of 5000 euro and will be awarded during the ISBT Congress in Toronto, Canada. The successful candidate will be required to give a presentation on their submission during the Congress. Travel, registration, and accommodation costs for the congress will all be covered by ISBT.

The closing date for submission is December 17, 2017.

> *"Being awarded the Jean Julliard Prize 2016 has been incredibly important to me. It is both a personal honour and a recognition of the importance of the work that my colleagues and I have done during the past decade."*
>
> – Gustaf Edgren,
> Winner of the Jean Julliard Prize 2016

> *"This award recognized medical achievements of the Vietnam's blood transfusion sector and marks a new milestone in NIHBT's development in the region and at an international level, which has encouraged us a lot in improving the quality of domestic blood transfusion services. We sincerely hope that this meaningful award will be continued in favour of developing countries to encourage more and more improvement for a safer and more effective blood services in the developing world."*
>
> – Nguyen Anh Tri, former director of the National Institute of Hematology and Blood Transfusion and winner of the ISBT Developing Country Award 2016.

ISBT Developing Country Award

Applications are invited from Blood Services/Centres from a qualifying developing country that has made a significant contribution in strengthening Blood Transfusion Practice within the country.

The closing date for applications is December 17, 2017

The 35th International Congress of the ISBT

will take place in the City of Toronto in just over six months' time June 2- 6, 2018

Toronto is a vibrant, dynamic city, where events and activities take place around every corner. It is the most populous city in Canada and the provincial capital of Ontario. Toronto is known for its many skyscrapers and high-rise buildings, in particular the CN Tower which is 553.3 meters (1815.3 ft) high. The diverse population of Toronto reflects its current and historical role as an important destination for immigrants to Canada. It's estimated that over half of Toronto's residents were born outside Canada, which makes it possibly the most multiculturally diverse city on the planet: it houses over 80 ethnic communities speaking nearly 150 different languages or dialects.

Thanks to its immense cultural diversity, you can eat around the globe without leaving the city. There is plenty to do in Toronto; some of the world's finest restaurants are found here, alongside happening bars and clubs and eclectic festivals. You can take a boat across Lake Ontario or walk along the lake shore and visit one of the many restaurants and bars. On top of that the city has emerged as a major style destination. Toronto's top shopping destinations range from cool indie shops to outlet malls, vintage thrift stores to luxury boutiques. There's something for everyone.

As a gateway to a vast region that includes the world-famous Niagara Falls, the lakes and forests of Muskoka and the Kawarthas, and the nation's capital region, Toronto is an ideal location for the 35th International congress of the ISBT.

Register and join us

Register before April 26 and you will be able to register for the early member registration fee which ranges from €200 for students and delegates from Low HDI countries to €310 for delegates from medium HDI countries and €400 for all other countries. This is a much lower price than other transfusion medicine congresses and offers excellent value for money with a full 5 day scientific programme, workshops, poster walk with refreshments, satellite symposia, refreshment breaks, lunch, congress bag and a welcome reception with full buffet. Become an ISBT member and benefit from the reduced registration fee. Further information about ISBT membership and how to join can be found on www.isbtweb.org

Key dates

Abstract deadline: Thursday February 22, 2018
Deadline early registration fee: Thursday April 26, 2018
Deadline late registration fee: Thursday May 24, 2018
Onsite fee as of May 25, 2018

The scientific programme

On Saturday June 2 the local day is organised by the Canadian Society of Transfusion Medicine and all delegates are welcome to attend. The main scientific programme starts on Sunday June 3 with the ISBT Academy day and runs until Wednesday afternoon June 6.

The Academy day is education day when it is your opportunity to catch up on topics that you are not so familiar with or to find out more about your particular interest. The Academy day includes sessions on blood donors and donation, immunohaematology focused on blood groups, clinical transfusion practice including ECMO, TACO and transfusion support of malaria patients, quality management, the ISBT ITRY IT programme and cellular therapies.

Transfusion medicine experts from around the world will share their knowledge in the packed main scientific programme with up to six parallel sessions each day which are separated into different tracks; donors and donation, management and organisation, blood products, blood safety, immunobiology, clinical and cellular therapies. The parallel sessions consist of one invited speaker followed by a series of oral presentations chosen from submitted abstracts and related to the track.

On Tuesday morning the Jean Julliard prize (young scientist) and ISBT Presidential Award plenary sessions will be held. There are three other plenary sessions; 'Arboviruses,' focused on insects, malarial resistance, and the immune role of platelets in malaria and 'Platelets' covering in vitro production of platelets, translational aspects and prevention of alloimmune platelet refractoriness. The final plenary session celebrates 200 years of human to human blood transfusion.

There will be two breakfast events; a young investigators (YI) breakfast and a transfusion practitioners (TP) breakfast. The ever popular 'how to' workshops will also take place as well as two transfusion practitioner sessions.

	07.00 – 08.15	08.30 – 10.00	10.00 – 10.30	10.30 – 12.00	12.00 – 14.00	14.00 – 15.30	15.30 – 16.00	16.00 – 17.30	17.30 – 18.30
June 4	TP breakfast	Parallel Sessions	Break	Plenary Session	Lunch	Parallel Sessions	Break	Parallel Sessions	
June 5	YI breakfast	Jean Julliard Plenary	Break	Presidential Award Plenary	Lunch	Parallel Sessions	Break	Parallel Sessions	Poster Session
June 6		Parallel Sessions	Break	Plenary Session	Lunch	Parallel Sessions	Break	Plenary Session	Congress Party (19.00 - 23.00)

The social programme

Join us on Sunday June 3 for the opening ceremony which will feature opening speeches, award presentations and local entertainment followed by the welcome reception. This is an opportunity for delegates to catch up with long-time friends, make new friends and enjoy the collegial atmosphere of the ISBT welcome reception. On Wednesday June 6 the congress party will be held at Rebel, a club across the lake from the convention centre with fantastic views to the city skyline. Food and drinks will be served and there will be a live band and DJ for you to dance the night away.

Visit the website to register, find hotel accommodation, submit an abstract, or view the scientific programme.


Club Rebel

www.isbtweb.org/toronto

New Membership Year April 1, 2018 - March 31, 2019

Introducing two new membership categories and the World Bank Index.

As we come to the end of 2017 we are happy to say that it has been a very successful year with growing membership numbers, particularly in Europe and the Western Pacific Regions.
The growing ISBT community will aid in further reaching and achieving ISBT's mission of sharing knowledge to enhance transfusion practice worldwide.

We are constantly looking for ways of delivering educational information to you by implementing new ideas, an example being the recently launched online Live Journal Club alongside the ever increasingly popular Webinars.

Thank you for your support and we at ISBT will continue to support you in turn to make your membership of maximum benefit to you.

Membership renewal will start on April 1, 2018 and we are looking forward to you renewing your membership.

For the membership year 2018-19 some aspects of membership will change:-

1. The UN HDI will be replaced by the World Bank Index. This will mean members from some countries will pay a lower registration fee.

2. Two new categories of membership will be introduced with a lower membership fee:
   - Allied Health Professional – people eligible for this category include; medical laboratory technicians or scientists who have undertaken an undergraduate qualification, medical laboratory technicians who have undertaken a diploma or certificate course in medical laboratory technology and bioengineers.
   - Transfusion Practitioner - people eligible for this category include; transfusion liaison nurses, transfusion safety officers, haemovigilance officers and patient blood management nurses.

Your current benefits as an ISBT member will continue to include
- Access to the ISBT Academy ePortal (including congress webcasts and presentations)
- Subscription for Vox Sanguinis (paper + online)
- Receipt of Transfusion Today (paper + online)
- Receipt of the monthly E-news
- Registration discount at ISBT congresses
- Online access to Working Party material
- Webinars
- Online Live Journal Club
- 35 years and under discount fee (have only online access for VOX Sanguinis and Transfusion Today)

We look forward with great anticipation to the new membership year and your continued membership, for growth, participation and connection within our transfusion medicine community.

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Learn more at www.bio-rad.com/immunohematology

BIO-RAD

EDUCATION

Online Education

Webinars 2018

After a successful first year, the monthly live webinars will be continued in 2018. The first webinars of 2018 are planned. These live educational presentations cover various relevant topics of Transfusion Medicine.

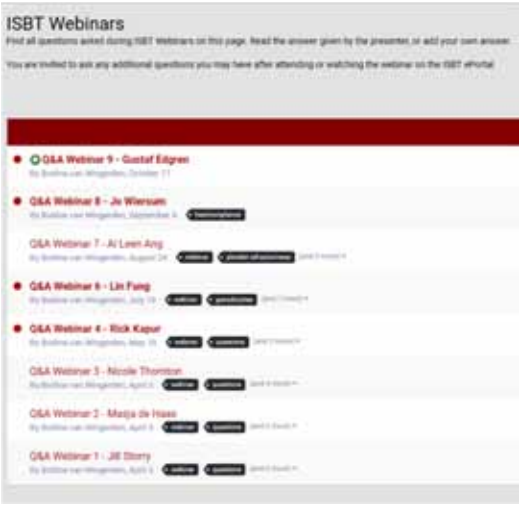
ISBT members will receive email invitations to register for these live talks.

These will be the first three webinars of 2018:

Speaker	Title	Date	Time
Ruchika Goel	Paediatric Transfusion Medicine: From the foetus to the young adult, One size does NOT fit all	January 10	15.00 CET
Barbara Masser	Donor psychology	February 7	09.00 CET
Eldad Hod	Current issues relating to the red cell storage lesion	March 7	15.00 CET

Webinars 2017

For those who could not attend the webinars but would still like to watch them, the recordings are uploaded to the Academy ePortal, where they are accessible for ISBT members. You can find these recordings under the Home menu in the Webinars box. The questions that were asked during these talks are available in the ISBT Forum, where members can comment on them or raise new ones.



Live Journal Club

The Clinical Transfusion Working Party initiated a new live event, the Live Journal Club. During these presentations recent articles in Transfusion Medicine are critically evaluated by trainees and their mentors. These meetings will be organised on a regular basis and the recordings of these talks are uploaded to the Academy ePortal.

Accreditation of congress webcasts

In the near future, ISBT will apply for accreditation of congress webcasts that are accessible on the ePortal. The accreditation will allow participants to earn accreditation points by watching presentations and completing the associated quizzes.

ISBT Academy funded delegates at the SANBTC: From left to right – Annemarie de Koker, Daniel Ndhlovu, Judith Chapman (ISBT), Greg Bellairs (SASBT), Josephraj Xavier, Abiy Ambaye.

Gregory Ralph Martin Bellairs
CEO/Medical Director – Western Province Blood Transfusion Service
President – South African Society for Blood Transfusion

ISBT ACADEMY

South African National Blood Transfusion Congress

The 34th South African National Blood Transfusion Congress was held from 28th to 31st August 2017 at Sun City, in the North West Province of South Africa. This congress was organised by the South African Society for Blood Transfusion, a non-profit entity including directors and members of both blood services in South Africa (SANBS and WPBTS).
The key highlights were:

- 403 delegates attended (including 63 day delegates).
- Several delegates from The Africa Society for Blood Transfusion were in attendance and two sessions in the Scientific Program focussed on African research and activities.
- 89 abstracts were submitted, of which 54 were accepted for oral presentation.
- 30 posters were presented.
- 27 talks were delivered by invited speakers, which included 4 local and 9 international speakers.
- 46 trade exhibition stands were taken up by 28 companies.
- 33 sponsorship opportunities were purchased by 14 companies.
- Delegates attended 3 evening social events – the most memorable of these were the casual dinner and singing competition, and the gala dinner held at the Valley of the Waves, a unique inland beach venue.

The organisers were granted €5000 by the ISBT Academy, which was utilised to fully fund the attendance of 4 delegates:

Annemarie de Koker – National Health Laboratory Service.
"As a 'young' researcher the SANBTC provided me with an invaluable experience, not only being able to present at such a large event, but it also afforded me the opportunity to attend numerous sessions hosted by international speakers, most of whom are regarded as experts in their fields."

Josephraj Xavier – National Institute for Science, Technology and Innovation – Seychelles.
"It was a great opportunity for me having participated in this congress which has given an advantage of meeting skilled people of innovative fields of different countries."

Daniel Ndhlovu – Malawi Blood Transfusion Service.
"I learnt a lot in that three days and my knowledge in immunohematology and blood transfusion has improved tremendously. There were also sessions of interest although they will not be applicable to my practice in Malawi at the moment but they widened my horizons in the field."

Abiy Ambaye – National Blood Bank Service of Ethiopia.
"The attention given to quality that I have witnessed during the congress was great and I am sure it gives the blood banks attending the congress and working towards accreditation like ours a good example to relate too. I will use the knowledge I gained from the congress to strengthen the transfusion service in my country further."

The Scientific Program can be accessed via the following link - http://www.sabloodcongress.org/index.php/programme

The organisers wish to thank the ISBT, the sponsors, and the exhibitors for their financial support, as well as all delegates and speakers who ensured that this was one of the most successful congresses to date on the African continent. We must highlight the generosity of the delegates (who donated almost R10.000 and other items), as well as SANBS (who donated 1400 blankets) to two impoverished schools in the area as part of the Corporate Social Investment initiative.

The next South African National Blood Transfusion Congress will be held in 2019 and further details will be released in due course.

ISBT ACADEMY

Vicencio Juarez Barreto
President of the Mexican Association of Transfusion Medicine

15th National Congress of the AMMTAC September 20 - 23, 2017

Expo Guadalajara, Jalisco. México

The City of Guadalajara, Jalisco, the birthplace of Tequila and Mariachi, welcomed the delegates from the different areas of Transfusion Medicine on Wednesday, September 20, for the first day of the Mexican Association of Transfusion Medicine Congress. On this day seven workshops were held, namely, Haemovigilance, Transfusion Medicine for Nurses, Professional involvement of Social Work in the Blood Bank, Accreditation of Blood Banks, Basic and Advanced Immunohematology and Apheresis.

The Scientific program consisted of four different symposia and two plenary sessions daily. The opening ceremony included the presentation of two recognitions due to the fact that the Association is celebrating its 15 years of existence. These awards were presented by the ISBT and IHN signed by the current presidents, Dr. Ravi Reddy and Dr. Erica Wood respectively.

The entertainment was in charge of the ballet of the Autonomous University of Guadalajara and Mariachi. This was inside the exhibition hall where also typical Mexican food was served, considered intangible cultural heritage of humanity.

The Congress Party took place at Expo Guadalajara on Saturday September 23, where more than 500 delegates attended and enjoyed food, tequila and more mariachi until 3 am.

The success of the congress was due to the high academic level in which we had the endorsement of the ISBT. This was very attractive for all the delegates as well as the participation of national and international professors who motivated the delegates to grow like professionals in their places of work. This was always with the support of the board and the local committee that worked hard for the realization of this 15th Congress.

As part of the association's social commitment, an in-kind donation was made to cover the needs of the Guadalajara health service, as well as a blood donation campaign to promote voluntary donation.

During the congress we presented the new website of the association, which is more modern and interactive so that the members can enjoy more benefits in a more accessible way.

Facts and figures
- 1341 congressmen
- 28 exhibitors filled 1688 m2 of exhibition space
- 3 satellite symposia
- 46 scientific sessions
- 7 workshops
- 82 abstracts accepted and 12 oral presentations

ISBT SEASON'S GREETINGS 2017

With best wishes for a successful 2018!

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

WESTERN PACIFIC

Masanori Matsumoto
Professor of Department of Blood Transfusion Medicine, Nara Medical University, Kashihara, Japan

Tadashi Matsushita
Professor of Department of Transfusion Medicine, Nagoya University Hospital, Nagoya, Japan

Establishment of Evidence-Based Transfusion Guidelines in Japan

The most frequently used guidelines for blood transfusion practice in Japan are "the Criteria for the Use of Blood Products" released by the Ministry of Health, Labour and Welfare (MHLW) of Japan. These guidelines, originally issued in 2005, consist of criteria for the use of 4 blood products: red blood cell (RBC), platelet concentrate (PC), fresh frozen plasma (FFP), and albumin products. These guidelines were used in clinical practice to make appropriate decisions on the use of blood products, even though they were not accompanied by scientific evidence. Therefore, physicians have been expected to develop evidence-based guidelines for blood transfusion practice.

The Japan Society of Blood Transfusion and Cell therapy (JSBCTC) organized the Guidelines Committee (Chair, Masanori Matsumoto) in 2013 to revise the guidelines for blood transfusion practice. This committee created 10 task forces, including those that sought to develop new guidelines for the 4 blood products listed above. The members of the task forces were selected based on their specialties by the board of directors of JSBCTC. This work was supported by the research project "Research on the Development of Evidenced-based Guidelines for Blood Transfusion" founded by MHLW (Principal investigator, Tadashi Matsushita).

Clinical questions were formulated regarding 5, 12, 8, 5, and 17 medical conditions, respectively, that required autologous blood collection or transfusion of allogeneic RBC, PC, FFP, or plasma-derived albumin products. MEDINE, the Cochrane database, and the Japan Medical Abstracts Society database were used to search for both domestic and overseas articles. Searches regarding RBC, PC, and FFP were limited to articles published between 1995 and 2014, while those concerning albumin products were limited to articles between 1972 and 2014. The numbers of search results and selected articles by primary selection are shown in the table. Important published articles not identified by the computerized search or those necessary for formulating statements were manually added as selected articles.

Strengths of recommendation and levels of evidence were described according to the Medical Information Network Distribution Service (MINDS) classifications described in the "MINDS Handbook for Clinical Practice Guideline Development 2014." The strength of recommendation was presented in two ways: "1", strongly recommended; and "2", weakly recommended (suggested). The overall strength of evidence across outcomes (A, B, C, D) was shown as follows:

- A (strong): strongly confident of the estimate of effect
- B (moderate): moderately confident of the estimate of effect
- C (weak): limited confidence of the estimate of effect
- D (very weak): very little confident of the estimate of effect

Until March 2017, the evidence-based transfusion guidelines for the 4 blood products were completed by JSBCTC after public comments were obtained. Based on the new JSBCTC guidelines, "the Criteria for the Use of Blood Products" by MHLW was revised in March 2017. The JSBCTC guidelines, however, included criteria for the use of blood products that were not covered by the public health insurance. Therefore, the MHLW guidelines did not reflect all the criteria described in the JSBCTC guidelines, but did present the criteria based on strengths of recommendation and levels of evidence. Currently, a revision of these guidelines is underway, taking accumulating evidence into account.

Few articles from Japanese institutions contributed to the recommendations described in these guidelines, because most of these articles involved small-sized observational studies or narrative reviews and this type of evidence was not considered. We should therefore conduct high-quality trials on the use of blood products in Japan to establish guidelines suitable for transfusion medicine in Japan.

Products	Search period	Hit counts	Number of selected articles by primary selection
Red blood cell	**1995 - 2014**	**9345**	**978**
Platelet concentrates	**1995 - 2014**	**7871**	**975**
Fresh frozen plasma	**1995 - 2014**	**2759**	**588**
Albumin	**1972 - 2014**	**3059**	**310**

AFRICA

Emmanuel Nene Dei
Senior Health Research Officer
National Blood Service Ghana

Mavis Okyere
Quality Manager
National Blood Service Ghana

Blood Services Regulation Efforts in Ghana

Appropriate regulation is a vital necessity for the promotion and enhancement of the quality, safety and availability of blood and blood components. The national blood supply system in Ghana is currently fragmented, unregulated and predominantly demand driven, a system which is not recommended and prone to unsafe blood transfusions. In order to reduce and eventually eliminate these impediments, the National Blood Service, Ghana (NBSG) undertook a number of activities to improve access to safe blood in Ghana.

Inter-agency Collaboration

The NBSG signed a memorandum of understanding (MOU) with the Foods and Drugs Authority, Ghana (FDA) to develop and implement a regulatory system along the entire blood value chain. As the national blood regulatory authority, the FDA is responsible for setting and enforcing standards within the national blood system. This is in accordance with World Health Assembly (WHA) resolutions (28th WHA 28.72, 58th WHA 58.13 and 63rd WHA 63.12), International Conference of Drug Regulatory Authorities (ICDRA) recommendations (concept of blood and blood products as essential medicines) and the 851st Act of the Parliament of the Republic of Ghana (Public Health Act, 2012), which stipulates blood and blood products to be regulated as biological products. Both government agencies agreed that blood facilities engaged in donor assessment, collection, testing, processing, storage, cross-matching, labeling, release and distribution of blood and blood components shall be regulated in accordance with the provisions in the laws of Ghana and the National Blood Policy.

As per the regulatory framework and structures of the MOU, an exploratory assessment of 39 facilities made up of a blood centre, hospitals and clinics was conducted in June, 2016. Ten (10) facilities were classified, allocated site numbers and encouraged to initiate a facility licensure and products listing application process. Subsequently, all other blood facilities will be provided with technical support to meet the set regulatory requirements through continuous improved regulator-operator collaboration.

Training Workshop

The NBSG in collaboration with the FDA, the Paul-Ehrlich-Institut (PEI), Germany and the German Red Cross (GRC) organized a 2-day training workshop on 'Improving Blood Safety in Ghana through Regulation' in Accra, Ghana on August 15 and 16, 2017. The workshop, organized under the sponsorship of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH was attended by 65 officers of NBSG, FDA, PEI and GRC. Participants included medical officers, regulatory officers, biomedical scientists, laboratory technicians, donor recruiters and donor care nurses.

The first technical session of the workshop included lectures on Blood Regulation in Ghana (Dr. Edwin Nkansah), Blood Donation Services in Germany (Prof. Bönig), National Blood Policy/Blood Services in Ghana (Dr. Justina K. Ansah), Motivating Blood Donors in Ghana (Dr. Lucy Asamoah-Akuoko), Fostering Voluntary Donors from Family Replacement Donors (Mr. Kwame Asenso-Mensah), Pathogen Inactivation of Whole Blood – Panacea for Blood Safety (Dr. Shirley Owusu-Ofori), E-Health (Dr. Manvi Porwal) and Blood Services Indicators for Monitoring (Mr. Emmanuel Nene Dei).

The second training session followed with lectures on topics in donor recruitment, selection and care, blood testing strategies, cold chain management and quality essentials, delivered by officials of the NBSG.

The overall goal of the workshop was to provide a platform for professionals of both NBSG and FDA to familiarize themselves with standards, policies and procedures in blood services and provide an understanding that safe blood service is a necessity not because the law says so but because they have an obligation towards patients requiring transfusions in Ghana and mankind as a whole.

Essential Medicines List

Blood and blood products were recently added to the 7th edition of the Standard Treatment Guidelines (STGs) and Essential Medicines List (EML) in Ghana. The Ghana National Drugs Programme under the Ministry of Health, Ghana launched the latest edition of the STGs and EMLs in October, 2017.

The addition of blood and blood products to the EMLs in Ghana comes as a tremendous contribution to the numerous efforts towards regulating blood services in Ghana. The role of the EML is to guide local production, implying that quality assurance mechanisms must be in place for listed medicines. In line with this role, facilities that undertake activities that lead to the provision of blood and blood products in Ghana must work according to quality standards and good manufacturing practices for blood establishments.

Conclusion

The NBSG anticipates that these events will contribute to strengthening the blood supply system in Ghana and also support the execution of its mandate.

Manel Gastó
Blood and Tissue Bank of Catalonia
Barcelona

Lluís Puig
Blood and Tissue Bank of Catalonia
Barcelona

The Other Side of the Tragedy

The general public's need to do something to help boosted blood donations immediately after the Barcelona terrorist attacks in the Ramblas in August 2017.

"We have enough blood supplies to treat the people wounded in the Barcelona attack should they need a blood transfusion."

We issued this message from the Blood and Tissue Banc of Catalonia (BTBC) an hour after the tragic attack in the Ramblas on 17 August. The magnitude of the attack – 16 dead and 151 injured – was not yet known, but the general public's reaction in similar emergencies, such as the Atocha bombings in 2004, the Galicia train crash in 2013 and the shootings in Orlando in 2016, was enough to predict a huge influx of donors at blood collection centres.

Indeed, there was an immediate reaction despite the reassuring messages quickly sent by the media with clear headlines, including the one published in the most printed newspaper in Catalonia, La Vanguardia, which read: "Let's avoid overloading hospitals with blood donations until further notice." Three hours after the tragic events, queues began to form at the donation centres of the city's main hospitals: Hospital Clínic, Hospital de la Vall d'Hebron and Hospital de Sant Pau. At the BTBC , we took two steps to handle the situation:

1. We extended the donation hours and reinforced the available resources to improve the care offered to the donors queueing at the hospitals.
2. We informed the general public via the media and social networks that we had sufficient blood supplies, warning that collected blood expires, and requested that if at all possible, people should make their donations in the days following the attack.

The final result was a "wave of solidarity", the headline used in the news bulletins of the main radio and television channels. Compared with an equivalent week in August in previous years, blood donations quadrupled in the three major hospitals from an average of 1,646 donations to 5,282 in the week between 17 and 27 August this year. Mobile blood donation campaigns also attracted 20% more donors than predicted and reserves were sufficient to provide blood for up to 10 days, which is an optimal figure for the month of August.

From the outset, the health authorities and the BTBC informed the public of the importance of having sufficient blood supplies to handle similar emergency situations; public awareness of this need is gradually increasing.

Donors from all over the world

Donations were made by people from 71 different countries, of which 577 were from overseas - three times more than usual. Approximately 100 tourists who had been in the Ramblas the day before went to the hospitals to donate blood as an act of solidarity.

Social media: information and instant reactions

@donarsang. The BTBC social media profiles on Twitter, Facebook and Instagram have nearly 40,000 followers. The account on Twitter, which is renowned for its immediacy, played a key role in issuing a reassuring message ("we have enough blood supplies"), and also in educating followers on blood donation ("Blood is a biological resource that expires, so we urge you to donate over the coming days in order to maintain supplies."). The number of followers increased by 20% during the week following the attacks.

Social media accounts publishing up-to-the-minute information on the attack, such as the Regional Police (Mossos d'Esquadra) or the Catalan Autonomous Government and the media, reposted the messages published by BTBC on Twitter. This proved crucial in limiting the circulation of false rumours on the lack of blood supplies.

Ina Perez Huaynalaya
Medical Chief of Blood Bank
Clinica Delgado –AUNA.
ISBT Regional Director for South America

International Transfusion Medicine Course in Lima, Peru. First Edition

August 17-18th, 2017

The international transfusion medicine course gave us the opportunity to share knowledge of advances in immunohematology as well as transfusion Medicine topics with 26 transfusion services and blood banks from across the country. The advanced school ESECS and Clinica Delgado from AUNA organized and gave the financial support for the travel of the teachers and the staff from the Transfusion Service and Blood Bank Clinica Delgado managed the support lab materials, gel cards (donation) as well as equipment. They were also involved with the live exercise sessions together with the Institution Serotec.

The teachers were: Dra Roberta Fachini from Sirio Libanes Hospital (Brazil), Dr Jose Levi from Albert Einstein Hospital and Tropical Medicine Institute of Sao Paulo (Brazil), Dr Oscar Torres from Hemocenter of La Plata (Argentina) and Fabiana Bastos Medical Chief from Transfusion Services at Oncology Institute Angel H. Roffo (Argentina). AUNA gave us the support to make an open access to everybody in the country to join in at a non-profit cost price. Speakers from Peru were: Juan Pablo Murillo (Epidemiologist National University San Marcos) Jose Alva, Christian Hurtado, Ina Perez as well as the practical teachers: Yahaira Ortega and Viviana Romero (AUNA Clinica Delgado Blood Bank).

In AUNA we were conscious as an institution we had to develop something different in improving the educational experience of the people who already are working on the blood bank network in Peru.

We recognize the support of ESECS (AUNA), GCIAMT (Iberoamerican Group of Transfusional Medicine) as well as AAHI (Argentina), SGH (Guatemala) Societies of Transfusion Medicine which helped with the diffusion and promotion, and as Grifols and Biorad who gave us the donated material to execute the workshop.

SOUTHEAST ASIA

Widuri Sasi
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Quality Management System of Blood Services in Jakarta and Surabaya - Indonesia

Background

Indonesia with more than 250 million population has 414 Blood Centres (BCs) in which 221 BCs are managed by the Indonesian Red Cross (IRC-BCs) and 193 BCs are managed by the government Hospitals (HBCs). Jakarta and Surabaya IRC-BCs are two big BCs located in big metropolitan cities that have contributed to more than 20% of the national blood donation in 2015. The demand of qualified and safe blood supply in Jakarta and Surabaya increases with increasing knowledge and society ability. Responded to these challenges, quality management program has been implemented in these two BCs with the result of obtaining the ISO 9001:2008 certification in 2009. However, as in 2017 the National Guideline of Good Manufacturing (GMP) for Blood Establishment has been issued, many challenges was faced by the BCs in improving quality of their blood services. This article describes the process of quality management implementation in Jakarta and Suabaya Indonesian Red Cross Blood Centres.

Regulation development on quality management

To ensure safe blood supply in Indonesia, the government has issued some regulation which emphasized the need of implementation of quality management system in every BC. The regulations are the Government Regulation No. 7/2011 on Blood Services, the Ministry of Health No. 83/2014 on Blood Centers, Hospital Blood Banks and Blood Supply Network, the Ministry of Health No. 91/2015 on National Standard od Blood Services and the national guideline of Good Manufacturing Practice for Blood Establishment issued by the National Agency of Drug and Food Control of Indonesian Government.

Quality Management Implementation in Jakarta and Surabaya irc-bcs

Implementation of quality management on 1,000 bags of blood donation and 2,500 bags of blood components production per day (Jakarta BC); 500 bags of blood donation and 1,500 bags of blood components production per day (Surabaya BC), was not a simple job. However, since the acquisition of ISO 9001:2008 certificate in 2009, making quality as a working culture is becoming Jakarta and Surabaya BCs main objective. Maintaining commitment from top management to staff for continuous quality improvement in accordance with government regulations was one strategy to implement quality management in blood services.

In 2012, the WHO GMP standard for Blood Establishment was introduced by the Australian Red Cross GMP consultant who assisted Indonesian Red Cross in improving blood services in Indonesia. Community demand of safe blood has pushed government to issue regulations on blood services starting in 2014 and just few months ago, the National GMP on Blood Establishment was also issued. All regulation was aim to direct the blood services in Indonesia in achieving qualified blood supply.

In running all government rules, the Jakarta and Surabaya Blood Center organisation structure was renewed and all standard operational procedures (SOPs) was reviewed. Moreover, a training program was routinely run based on training need assessment. Customer satisfaction was also a concern. Obtaining customer opinion of blood services through suggestion box, email, short messages and customer satisfaction survey was run. Assessment of quality management implementation was also run by conducting an internal audit and external audit by an ISO auditors, each twice a year.

Currently the Jakarta and Surabaya IRC BCs are in the process to achieve the GMP certification from the National Agency of Drug and Food Control of Indonesian Government. Validation and qualification on all critical equipment, materials and processes, were found to be the most difficult activities to be implemented even though the ISO 9001:2015 has also emphasized this activities. The risk and change management of every critical procedure in the GMP are also new concepts to be understood and implemented.

The GMP for Blood Establishment certification is believed to be an acknowledgement of quality achievement in blood services. Achievement of ISO 9001:2008 certificate helps the Jakarta and Surabaya blood centre to build quality into work environment. The commitment from government in term of regulation updated and all blood centre staff are strategy to maintain the quality of blood services.

2018

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

March 22 – 23
Human Platelet Lysate workshop
Zurich, Switzerland

March 25 – 28
7th New Directions in Leukaemia Research (NDLR) meeting
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1. Swiss medic Haemovigilance Annual Report 2015.
2. Based on imputability of suspected septic transfusion reactions reported to Cerus Corporation's safety program.