TRANSFUSION TODAY

Transfusion Today | Number 85, December 2010

ISBT

Working Party on

Clinical Blood Transfusion

Highlights of the International Symposium on Critical Bleeding

The Bleeding Trauma Patient

Individual Donation Nucleic Acid Testing in South Africa

Transfusion Medicine Course, Lima, Peru

Contents

President Silvano Wendel **Secretary General** Geoff Daniels **Executive Director** Judith Chapman **Design** Tomorrow Design **Photography** Transfusion Today **Advertising** Sophie Hamburger, office@isbtweb.org

Send all correspondence to ISBT - J. van Goyenkade 11, 1075 HP, Amsterdam, The Netherlands. T +31 20 5709 636, F +31 20 6737 306, transfusiontoday@isbtweb.org.

Judith Chapman

Editorial

The focus section of this issue of Transfusion Today has the theme of Clinical Blood Transfusion. It has been put together by Jonathan Wallis, chairperson of the ISBT Working Party on Clinical Blood Transfusion. As Jonathan writes at the end of the long chain of tests, facilities and staff is the patient. It is therefore appropriate that ISBT has a working party focused on the clinical practice associated with transfusion medicine.

The regional pages include interesting reports of meetings or conferences that have recently taken place from afar afield as Tehran and Peru. Two of these conferences were under the aegis of the ISBT Academy. ISBT is seeking to develop the Academy and it is hoped that in 2011 more workshops and scientific meetings will either be sponsored by or under the aegis of the Academy. For more information please contact **office@isbtweb.org**.

The Central Office has already started planning the Transfusion Today issues in 2011. The next issue will have platelets as the focus section. I recently attended the 11th European platelet and granulocyte immunbiology symposium. Judging from the presentations and posters many developments are taking place in this field and I am looking forward to some interesting and exciting articles in TT 86.

ISBT Working Party on Clinical Blood Transfusion

Jonathan Wallis,
Consultant Haematologist, Freeman Hospital, Newcastle upon Tyne UK

The ISBT has many working parties e.g. on donors, granulocyte immunobiology, rare blood groups and so on. All these are important parts of the transfusion process but at the end of the long chain of tests, facilities and staff is the patient. He or she may benefit from a well timed transfusion, or fail to benefit or even come to harm from a transfusion that is not required. Unnecessary transfusion is bad transfusion however carefully the donors have been screened and tested, however carefully the componentshave been prepared labelled and stored. The blood banker may have tested for atypical antibodies and compatibility with exquisitely sensitive techniques but if the transfusion is not warranted it remains a bad transfusion. Failure to transfuse when it is warranted is equally a bad transfusion. Not keeping up with a coagulopathy in a massive transfusion perhaps due to trauma or obstetric causes, or failing to transfuse enough red cells to a woman dying of blood loss after childbirth is a bad transfusion.

It is therefore very welcome that the ISBT has decided to emphasise the importance of the final part of the pathway, the clinical use of blood, by supporting the formation of a working party on clinical blood transfusion. What can we do that is not already done? There are plenty of guidelines from learned societies and national bodies often used internationally and largely based on the same evidence base, and yet despite this rates of transfusion and uses of transfusion differ greatly between different countries with little apparent reason. It is a mistake to think we should always do the same, in fact conformity can impede progress as much as it improves practice, but by understanding the differences in practice between countries, why they exist and what the results are we can learn how we can improve our own practice. Progress is always more sure where the impetus for change comes from within and is not imposed from outside.

The ISBT has a particular history and a special role in spreading a message across all nations and bringing together people from diverse countries. We hope in the working group to develop a number of themes that will help understand how and why transfusion practice differs and how handholds can be put in place to advance clinical transfusion practice from within. One of the major themes we hope to address is to standardise how we measure transfusion. What is a transfusion episode, what are the indications for transfusion? We cannot compare unless we agree how to count. Having done that we hope to encourage hospitals, regions, countries to compare what they do allowing for the type of health service and the age structure of their populations. We know for instance in Europe that some countries use twice as much plasma as others despite similar health systems and populations. Why is this?

Of course one of the major problems in deciding how we should use transfusion is the organic way in which it has grown often with too little scientific support for our practices. The carrying out of large scale randomised trials to address this deficiency is not something that can easily be done by a newly formed working party and we do not envisage this as a significant role of the group. However observational studies are possible and sometimes yield surprising results. Willy Murphy of the Irish transfusion service will be leading a group developing some comparative studies between countries as trials of such methodology in well defined areas such as transfusion support for joint arthroplasty and hip fractures. Claire Barrett from South Africa will lead a group looking at spreading education on clinical blood transfusion to bedside clinicians. In this edition of Transfusion today she describes the reasons behind this drive and how her particular interest in education has arisen. Hans Erik Heier from Norway will look at producing a library of guidelines with the hope of producing some form of synthesis to guide management of transfusion in those with massive haemorrhage. Marcia Novaretti from Brazil will lead a group on transfusion in palliative care, how can we best use transfusion to improve quality of life in the seriously or terminally ill, something that has barely been studied before. Finally Dora Mbanya from Cameroon writes about the particular challenges in good clinical transfusion practice in areas of the world less blessed with resources. Good clinical transfusion practice will make best use of our scarce resource.

Hans Erik Heier,
Ullevaal University Hospital, Oslo

Transfusion in the Bleeding Trauma Patient

In the bleeding trauma patient, initial treatment aims at keeping up blood volume and securing adequate haemostasis. However, current transfusion policy in the massively bleeding trauma patient is not based on good scientific trials, and there is much debate about optimal management.

Volume Expansion
There is apparently no role for blood or plasma products as volume expanders, but the volume expanding effect of fresh frozen plasma (FFP) and cellular components should be taken into account to avoid overhydration of the patient.

Haemostasis
The goal of intial treatment is to stop bleeding and limit organ damage. Haemostatic function in the trauma patient may be impaired through:

- **Haemodilution**: Infusion of artificial kolloids and krystalloids reduces concentrations of coagulation factors. Critical values are not established, but one attempts to keep fibrinogen concentration > 1.75 g/l
- **Acidosis:** In shock or pre-shock insufficient blood flow through tissues will induce production of acid metabolites. General acidosis leads to reduced function of thrombocytes and coagulation. Critical value may be pH=7.1.
- **Hypothermia:** Reduced body temperature leads to reduced function of thrombocytes and coagulation. Critical value may be 35oC. All infusions, blood components and products included, should be prewarmed.
- **Consumption**: Thrombocytes and coagulation factors are consumed and must be replaced. Critical value of thrombocytes may be as high as 100x109/l.
- **Coagulopathy**: Multitrauma induces release of large amounts of many cytokines and other small molecular substances which impair or deregulate the function of the coagulation and fibrinolysis cascade. Clinical coagulopathy is not well defined and is not well reflected by conventional coagulation tests. Thromboelastography (several devices available) is currently being evaluated for diagnosis of coagulopathy and monitoring of haemostatic function in multitrauma.

Aggressive Use of Prohaemostatic Blood Components and Products
Several retrospective studies report improved survival in groups of massively transfused trauma patients when given an increased FFP/erythrocyte ratio. Also the aggressive use of thrombocyte transfusion has been reported with similar results.

> "The goal of intial treatment is to stop bleeding and limit organ damage."

Other studies, notably such of consecutive trauma patients, have failed to show such an effect at a statistically significant level. Currently it is not possible to draw general conclusions on the signficance of prohaemostatic transfusion regimens (1). Better tools for monitoring of haemostasis function and diagnosis of coagulopathy are urgently needed. Improved survival may frequently also be achieved by improvement of fluid resuscitation with emphasis on the patient's general status and by damage control surgery.

From the WP on Clinical Transfusion we hope to produce a library of guidelines and evidence that will be useful to those seeking to produce clear guidance for their clinicians.

Reference

1. Nascimento B, Callum J, Rubenfeld G et al. Clinical review: Fresh frozen plasma in massive bleedings - more questions than answers. Critical Care 2010; 14: 202-9

Stensballe J. [1, 2,] Johansson PI. [1]
1 Section for Transfusion Medicine,
Capital Region Blood Bank, Rigshospitalet,
Copenhagen University Hospital, Denmark
2 Department of Anaesthesia,
Centre of Head and Orthopedics, Rigshospitalet,
Copenhagen University Hospital, Denmark

In Focus Working Party on Clinical Blood Transfusion

Highlights of the

International Symposium on Critical Bleeding 2010

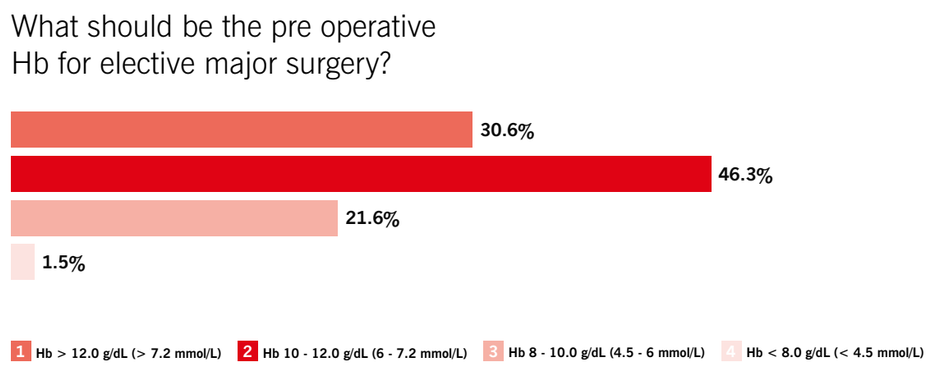


Figure 1: Result of participants live voting during one of the sessions is shown. Live voting as an interactive tool was used in most of the 11 session, both by the speakers and in case discussions closing the sessions.

Critical bleeding is a serious complication of disease and injury requiring emergency intervention to avoid significant mortality or morbidity.

Introduction

Increased focus on resuscitation maintaining normal haemostatic ability has evolved during the last 10 years related to the introduction of the cell based model of haemostasis in 1996 (1). These changes are designated as Damage Control Resuscitation (2) or Haemostatic Control Resuscitation and seem to improve the outcome of our patients.(3).

The Concept of the International Symposium on Critical Bleeding 2010

Treatment of critical bleeding is in all phases dependent on a successful multidisciplinary collaboration. The diagnostic, transfusion, surgical, anaesthetic and resuscitative efforts will only improve the outcome if they are merged into a common strategy.

The primary purpose of the International Symposium on Critical Bleeding (ISCB) is to join the many aspects of critical bleeding in challenging discussions between key opinion leaders and the daily care givers.

Haemorrhage Control, Resuscitation and Coagulopathy: the Concepts

Critical bleeding is characterised by massive haemorrhage and imminent circulatory failure. The importance of attaining haemorrhage control during the resuscitative phase is pivotal, and rapid surgical control rather than definitive care might be essential. Resuscitation should be goal-directed considering permissive hypotension, avoiding dilution, but keeping the patient normovolemic, normothermic, non-acedemic and non-coagulopathic (4). Coagulopathy is generally conceived to be secondary to dilution, consumption, disseminated intravascular coagulation (DIC), hypothermia and metabolic academia. The term Acute Coagulopathy of Trauma/Shock (ACoST) has been proposed to be associated withsevere trauma particularly driven by shock at the earliest phase, conceived as a primary coagulopathy present already on admission in 25 % of trauma patients and associated with a 4-fold increase in mortality (5).

The conventional tests of coagulation are often too slow to use to guide therapy and lack the functional aspects of the modern understanding of “cell-based” models of haemostasis (6). The visco-elastic haemostatic whole blood assays (VHA), thrombelastography (TEG®) and rotation thrombelastometry (RoTEM®), reflect the three different phases of cell-based haemostasis that results in clot formation and also specifically identify increased fibrinolytic breadown of the clot. Clinical studies have reported on the benefit of using VHA when compared to conventional tests of coagulation to guide transfusion therapy (7).

Goal-directed versus Ratio-directed Haemostatic Resuscitation

A high ratio of FFP to RBC and PLT to RBC is related to improved survival in critical bleeders suggested to be related to an improved haemostatic ability during the phase of active haemorrhage (8,9). Ratio-directed strategies work as simple, default strategies in massive bleeding, ensuring that all patients receive a transfusion strategy close to whole blood. Further development of the ratio concept has introduced functional haemostatic monitoring with VHA to guide therapy (3). The ratio concept does expose our patients to massive transfusion with the possible adverse effects, and some centres argue for a goal-directed strategy using crystalloids/colloids to decrease the use of blood products, and in contrast using VHA monitoring with low thresholds for using coagulation factor concentrates such as pro-thrombin complex concentrate, fibrinogen concentrate and recombinant factor VIIa restore normal haemostatic abilities from the intentional dilutive coagulopathy (10). So far no studies have head-to-head evaluated the outcome of the two strategies.

Alternative to Blood Transfusion

Pro-haemostatic drugs have the ability normalise haemostasis or to jumpstart coagulation in coagulopathic patients, even though the evidence for routine use in critical bleeding is very scarce (11). Fibrinogen substitution has been shown to reverse the >

coagulopathy induced by colloids in major surgery (12). Recombinant factor VIIa (rFVIIa) has failed to prove clinically useful in randomized clinical trials, (13) including the recently reported CONTROL trial in trauma patients (14) even though the off-label use is widespread. Prothrombin complex concentrates (such as Octaplex®, Octapharma)) consisting of the vitamin K dependent coagulations factors (FII, FVII, FIX, X and the natural anticoagulants protein C and S) have been shown to ensure rapid and efficacious treatment in patients with critical bleeding related to vitamin K antagonist (VKA) treatment, but the use in non-VKA bleeding remains unproven. Hyperfibrinolysis occurs in the up to 10% of massive bleeding trauma patients (15). The CRASH II study evaluating the antifibrinolytic drug tranexamic acid in trauma patients with significant haemorrhage demonstrated a survival benefit compared to plaebo but the potential benefits in non-trauma related critical bleeding is still to be evaluated. (16).

Critical Bleeding: Perspectives

Research is ongoing that could possibly benefit the critically bleeding patients. Above all, well designed placebo-controlled randomized trials in massively bleeding patients are highly warranted. The International Symposium on Critical Bleeding will join again in 2011 following the developments in the field and interacting at the highest educational level with internationally renowned experts, please see **www.iscb2011.dk** (Nov/2010). A special focus will be presentation of results from newly finalized clinical trials.

Acknowledgments

The authors would like to thank all the speakers and participants in ISCB2010, representing multiple disciplines and 27 nationalities, for making the symposium a considerable success.

References

1. Roberts HR, Hoffman M, Monroe DM. A cell-based model of thrombin generation. Semin Thromb Hemostat 2006; 32: 32-38
2. Beekley AC. Damage control resuscitation: a sensible approach to the exsanguinating patient. Crit Care Med. 2008; 36:S267-74.
3. Johansson PI, Stensballe J. Effect of Haemostatic Control Resuscitation on mortality in massively bleeding patients: a before and after study. Vox Sang 2009; 96: 111-8.
4. Geeraedts LM Jr, Kaasjager HA, van Vugt AB, et al. Exsanguination in trauma: A review of diagnostics and treatment options. Injury. 2009; 41:11-20.
5. Brohi K, Cohen MJ, Ganter MT, et al. Acute traumatic coagulopathy: initiated by hypoperfusion: modulated through the protein C pathway? Ann Surg 2007; 245:812–818
6. Segal JB, Dzik WH. Transfusion medicine hemostasis clinical trials network. Paucity of studies to support that abnormal coagulation test results predict bleeding in the setting of invasive procedures: an evidence-based review. Transfusion 2005; 45:1413-1425
7. Johansson et al. 2009
8. Borgman MA, Spinella PC, Perkins JG et al. The ratio of blood products transfused affects mortality in patients receiving massive transfusions at a combat support hospital. J Trauma. 2007;63:805-13
9. Cotton BA, Au BK, Nunez TC et al. Predefined massive transfusion protocols are associated with a reduction in organ failure and postinjury complications. J Trauma. 2009 Jan;66(1): 41-8
10. Rossaint R, Bouillon B, Cerny V et al. Management of bleeding following major trauma: an updated European guideline. Crit Care. 2010;14:R52.
11. Perkins JG, Cap AP, Weiss BM et al. Massive transfusion and nonsurgical hemostatic agents. Crit Care Med 2008; 36:S325-S339
12. Fenger-Eriksen C, Jensen TM, Kristensen BS et al. Fibrinogen substitution improves whole blood clot firmness after dilution with hydroxyethyl starch in bleeding patients undergoing radical cystectomy: a randomized, placebo-controlled clinical trial. J Thromb Haemost. 2009;7:795-802
13. Johansson PI. Off-label use of recombinant factor VIIa for treatment of haemorrhage: results from randomized clinical trials. Vox Sang. 2008;95:1-7.
14. Hauser CJ, Boffard K, Dutton R et al. Results of the CONTROL trial: efficacy and safety of recombinant activated Factor VII in the management of refractory traumatic hemorrhage. J Trauma. 2010;69:489-500
15. Carroll RC, Craft RM, Langdon Rjet al. Early evaluation of acute traumatic coagulopathy by thrombelastography. Transl.Res. 2009;154:34-9.
16. CRASH-2 trial collaborators. Effects of tranexamic acid on death, vascular occlusive events, and blood transfusion in trauma patients with significant haemorrhage (CRASH-2): a randomised, placebo-controlled trial. Lancet. 2010 3;376:23-32.

Dora Mbanya, Head of Haematology and Blood Transfusion Service, University Teaching Hospital, Yaounde, Cameroon

Problems in Developing

Good Clinical Transfusion Practice

in Developing Nations

Blood transfusion is an indispensable arm of therapeutic medicine associated with various undesirable outcomes. Hence, establishing good clinical practice is an invaluable aspect of blood safety. However, in many developing countries, especially of sub-Saharan Africa (SSA), achieving this remains a great challenge. The absence of policies, guidelines and legislations that regulate blood transfusion practice; the lack of infrastructure and trained personnel as well as the impact of the high prevalence of transfusion transmissible infections (TTI) including HIV/AIDS and malaria, or safe donor recruitment, are only the tip of the iceberg. These are further compounded by the relatively unsafe donor selection patterns and the inappropriate prescriptions of blood and blood products. These are further discussed.

Policies and guidelines
A national policy, national guidelines and a national committee on the clinical use of blood are indispensable for establishing good clinical transfusion practice. Standard operating procedures for all stages of the transfusion process and hospital transfusion committees (HTC) that implement, regularly review and update these policies and guidelines, as well as an efficient system for monitoring and evaluation of transfusion practices are also relevant. However, in many developing countries there is paucity of these, and when available, are not often implemented. These deficits are compounded by little commitment from government and policy makers.

Blood Donors and Blood Availability
About 82% of the world's population lives in developing countries; only 39% of the world's blood supply is collected from there (1). Paradoxically, they have the greatest need for blood transfusions, especially in SSA, due to high infant and maternal mortality, infections including HIV/AIDS, hepatitis and malaria; malnutrition; haemoglobinopathy and road accidents. Donor recruitment programmes thrive on family and replacement donors, and sometimes paid donors, constituting 70-90% of donor pools, usually first-time donors.

Blood testing
Adequate facilities for testing, storage and distribution of blood are sometimes lacking. Compatibility testing usually consists of minor compatibility testing, resulting in numerous adverse transfusion reactions. Screening for irregular antibodies and the use of phenotyped blood are rare.

Transfusion Transmissible Infections
In 2009, 67% of 33.4 million people worldwide living with HIV/AIDS were in SSA. Of about a million annual deaths from malaria, 90% are from Africa. High prevalences of these TTI and high residual risks for their transmission have been reported in blood donors in these settings.

Trained personnel
The scarcity of trained human resources remains an issue of concern, and the available few usually migrate due to wretched working conditions, poor infrastructure and remunerations and lack of career structure among others.

Blood prescription
Avoidable and unnecessary prescriptions are enhanced by misdiagnosis, late diagnosis and late treatment of pathologies that cause anaemia. Blood prescriptions by paramedical staff and the absence of overseeing HTCs are a significant problem.

Clinical use
Clinical errors including blood to the wrong patients; wrong blood sent to the clinical area and errors in patient sampling are recurrent, worsened by the lack of haemovigilence and quality control systems.

Other peculiar issues
Other factors, inherent and unique to some developing countries include the irregular power supply; frequent water cuts; the inadequate and infrequent supply of reagents and the non-standardization of practices exposing patients and health personnel to avoidable risks.

Sustainability Issues
There are several intervention efforts from various international organizations including WHO and PEPFAR to ensure safe and appropriate use of blood; nevertheless, sustainability issues eventually arise at the end of sponsorship.

Conclusions
Despite international efforts, donor recruitment, screening for TTI and blood storage are not optimal. Blood component preparations are not appropriate; haemovigilance and monitoring and evaluation are mostly non-existent. The lack of finances and trained staff inhibits sustainability. There is little Government commitment and support, and no effective policies and regulatory framework to enhance the process.

Recommendations
Early diagnosis and efficient treatment of pathologies requiring transfusion; the use of surgical techniques and of medication that limit blood loss and the use of alternatives to transfusion are recommended. Furthermore, there is need for procedures and their implementation and for monitoring and evaluation. Capacity building, human resources development; performance indicators and coordinated advisory or governing bodies (HTC) are the cornerstone to success. Effective collaboration between the blood services and the clinicians should be fostered.

Reference

1. World Health Organisation (2004) Global Database on Blood Safety 2001–2. WHO/EHT/04.09.

Marcia Crsitna Zago Novaretti
Assistant Professor, Hematology Dept.
University of São Paulo School of Medicine, Blood Bank Medical Director,
Sao Paulo State Institute of Cancer

Transfusion in Palliative Care Patients

In the last decade, significant advances have been made in medicine, especially in the management of critically ill patients with major impact on survival. At present, there are a number of patients with HIV, cancer, severe chronic diseases (heart, kidney and lung) among others in palliative care. Supportive treatment of these conditions includes blood transfusions as part of the therapeutic management of palliative care patients. Therefore, there is a need to better understand these groups of patients to better provide transfusion support. However, there is scarce information in the literature. [1,2]

> "Significant advances have been made in medicine, especially in the management of critically ill patients with major impact on survival."

The first step is to understand that palliative care is a comfort-focused approach to life-limiting or life-threatening diseases, whose goal is to maximize quality of life. However, the evaluation of quality of life of palliative care patients is complex and needs to take account of medical, psychological and socioeconomic factors. Based on that, every intervention in palliative care involves defining its goals and the possibility of these goals being achieved. [3]

Blood products can be transfused to improve quality of life of these patients, considering prognosis and general condition. For instance, transfusions may be indicated to alleviate symptoms (weakness, fatigue, hemorrhage, etc) and not based on standard thresholds for hemoglobin or platelet counts. The best response for these patients after red blood cell transfusion is the diminishing fatigue and in patients with longer prognosis. Previous response to transfusions is a guide for future ones. [4,5] A plan must be developed in advance with health care providers, family and the patient to discuss the potential benefits of transfusions and the parameters of defining success or failure of this intervention.

The most difficult is to decide whether to stop transfusions of blood or blood products in palliative care patients. In a didactic way, transfusions should be discontinued when the goals are no longer being met. Common issues like inability to obtain venous access, or massive bleeding exceeding possible replacement can also dictate the end-point of transfusing blood products. Finally, transfusion medicine has expanded its boundaries to palliative care and its accurate role still needs to be further explored to improve clinical care and quality of life for these patients and their families.

References

1. Pinchon DJ, Stanworth SJ, Dorée C et al. Quality of life and use of red cell transfusion in patients with myelodysplastic syndromes. A systematic review Am. J. Hematol. 2009 84: 67, 1-7
2. Cartoni C, Brunetti GA, Délia GM et al. Cost analysis of a domicillary programe of supportive and palliative care for patients with hematological malignancies Haematologica 2007: 92 (5): 666-673
3. Manitta VJ, Philip JA, Cole-Sinclaire MF. Palliative care and the hemato-oncological patient: can we live together? A review of the literature. J Palliative Med. 2010 Aug; 13 (8): 1021 – 5
4. Brown E, Hurlow A, Rahman A, Closs SJ, Bennett MI. Assessment of fatigue after Blood Transfusion in Palliative Care Patients: A Feasibility Study. J. of Palliative Med. - In press
5. Monti, M, Castellani L, Berlusconi A, Cunetti E. Use of red blood cell transfusions in terminally ill cancer patients admitted to a palliative care unit. Journal of Pain and Symptoms Management 1996; 12:22.

Claire Barrett, MBChB, PG Dip (Transfusion Medicine)
Division of Clinical Haematology,
University of the Free State,
South Africa.V

Training in Transfusion Medicine:

A Single Step in a Journey of a Thousand Miles

When I was a junior medical officer, newly appointed at the intensive care unit, I admitted a poly-trauma patient from theatre. The patient had suffered massive blood loss and the surgeon had battled to gain control of the bleeding. The anaesthetics registrar handed the patient over to me with a detailed summary of the patient's progress in theatre, and he mentioned that the patient had received cryoprecipitate amongst other blood products. I eagerly enquired about this, as I had never heard of cryoprecipitate before. To which the registrar answered, "It's a blood product, not sure why the consultant insisted that the patient gets it." At that moment my eyes were opened. Both the registrar and I had never been properly trained in the basics of transfusion medicine.

Within the European Union, training of medical students and doctors in transfusion medicine is not consistent from country to country, and even within a country there are different levels of training both at an undergraduate level and post graduate level. (1,2) This discrepancy may be assumed to be present throughout the world, and is reflected in the great differences in transfusion practice within different countries.

The undergraduate medical training program is so full, that unless there is someone who advocates for transfusion medicine training time, it may often be sidelined. As a result of this, young doctors may often complete their training with only a few hours of teaching in transfusion medicine. The lack of emphasis on transfusion in under-graduate and many post-graduate years does little to foster an interest in transfusion medicine as a possible speciality subject or as a career.

In spite of a demand for transfusion specialists, there is a lack of applications for these trainee and consultant posts. The lower professional profile of these posts may play a role. (2,3) South Africa has used a different approach to solve the problem of transfusion training of medical doctors. They have not tried to make transfusion medicine a speciality field, but rather they offer a post graduate diploma in transfusion medicine. This is available as a two year part time course to doctors who have an interest in transfusion. (4) This has been very well received, with 13 students completing the course after the first intake, and 19 students currently enrolled.

> "We need to be creative and ensure that our undergraduate and post graduate students are adequately trained in the critical elements of transfusion medicine."

We need to be creative and ensure that our undergraduate and post graduate students are adequately trained in the critical elements of transfusion medicine. Beyond this, we need to nurture a healthy interest in transfusion medicine and recruit promising, enthusiastic people to the field as transfusion specialists.

Bibliography

1. *Challenges in transfusion medicine recruitment and training- a solution.* **Louw VJ, Nel TJ, Leipoldt EJ, Bdaenhorst PN, Haf JF, Nel MM.** 2010, Transfusion medicine, Vol. 20, p. 70.
2. *Towards better blood transfuion - recruitment and training.* **Hill, Q.A.** 2009, Transfusion Medicine, Vol. 19, pp. 2- 5.
3. *Training physicians in the discipline of transfusion medicine- 2004.* **Conry-Cantilena, C. and Klein, H.G.** 2004, Transfusion, Vol. 44, pp. 1252 - 1256.
4. *Training and education- with a view of the involvement in Germany.* **Muller, N.** 2004, Transfusion clinique et biologique, Vol. 11, pp. 15 - 17.

Silvano Wendel

"I wish all ISBT members a very happy 2011."

This past three months has been extremely fruitful, productive, and collaborative. The journey started in Mexico, in a region near Guanajuato, responsible in the XVIIth and XVIIIth centuries for producing nearly 75% of all gold and silver extracted in the World. Not very far from there, in the city of León, the Mexican Society for Transfusion Medicine (AMMTAC) contributed to another kind of activity that will compensate even more this country, as each year there is an increase in the number of delegates attending its annual Congress. An ISBT Academy meeting (with support of AMMTAC and BioRad) covered various topics related to Quality Control in Latin America, where more than 150 professionals from several countries participated either personally or via video conference. I also found a proud, united, and active group there, eager to receive ISBT in 2012. Under the leadership of Julio Martinez, with the support of the local Mexican committee and ISBT assistance, an unforgettable Congress is gradually being developed.

Then it was time to move north, to Edgar Allan Poe's town of Baltimore where our good friends from AABB provided to ISBT a magnificent booth location in its annual meeting. I would like to thank Jackie Frederick, Karen Lipton and all AABB staff for the warm and friendly treatment in Baltimore. In addition, the already traditional meeting where both AABB and ISBT Executive Committees have the opportunity to talk and propose future collaborative activities resulted in a decision that the respective CEO's will embark together working on a Memorandum of Understanding (MoU) between our sister Societies. Karen Lipton and Judith Chapman will certainly bring great achievements very soon. A new Working Party was also defined by the Executive Committee, the Working Party for Global Blood Safety, under the chairmanships of Peter Ganz and Roger Dodd. I would also like to convey to Jim AuBuchon, the new AABB President, best wishes for a very productive year, and that you continue to benefit the USA with an even stronger and more participative national hemovigilance program.

Following Baltimore it was time to cross the Atlantic, where in the heart of Bourgogne, Cécile Kaplan and Jürgen Büx organized a splendid meeting on platelet and granulocyte immunobiology. Attendees were not only granted with the magnificent landscape, wine, and food in Beaune, but also had the opportunity to cover the latest developments in this field. National Programmes concerning prevention of Neonatal Alloimmune Thrombocytopenia were discussed, and I hope that Anne Husebekk and her team can convince the Norwegian Health Authorities about the importance of this project. I would also like to welcome Lin Fung who took over the chair of the ISBT Working Party on Granulocyte Immuno-biology. Certainly, the forthcoming ISBT meeting in Taiwan will be an excellent opportunity to congregate Asian Pacific members around platelet and granulocyte immunobiology.

Finally, a journey further afield, to Chengdu, in China, a city that presented to me a view of opulence, development and technology that I would never have imagined before. The Chinese Academy for Medical Sciences together with the Chinese Society for Blood Transfusion (CSBT) and the Institute for Blood Transfusion (IBT) organized a modern congress there, where ISBT was also represented by Ravi Reddy. Hundreds of attendees and local authorities had the privilege and opportunity to be at the opening of the new IBT facilities, a real state-of-the-art Blood Service, which will contribute for higher standards in Blood Safety in the Sichuan province. As I mentioned in my lecture in Chengdu; "only being hand in hand that blood safety is capable to develop on a global scale". And China is a key player in this mission. ISBT will be ready to assist any country that needs support and assistance in this area.

To end this message, the ISBT Foundation has nominated three new members for its Board. Congratulations to Xuetao Pei (China), Anthon Heyns (South Africa), and Jackie Frederick (USA) for your new position.

My next message will be next year. I wish all ISBT members a very happy 2011.

Silvano Wendel
ISBT President

Welcome to the 21st Regional Congress of the ISBT in Lisbon

More than five centuries ago, Portuguese explorers sailed away though the western African coast, crossing the Cape of Good Hope, finally reaching the Indian subcontinent. But they went even further east, up to Viet Nam, Japan, and China, and to Brazil to the west.

The Portuguese former colonies became different countries today, but the Portuguese legacy still persists. Distant countries share the same language and cultural aspects. Now, it is time for all European and other countries of the world to explore Portugal, during the next ISBT Regional Congress in Lisbon, June 2011.

A carefully selected scientific programme has been organized by the Scientific Committee, covering upfront issues in Transfusion Medicine. But Portugal is more than an excellent venue for scientific meetings.

I am certain that all attendees will enjoy the hospitality, the cultural life and its music, the characteristic architecture and the history of the most western European country, whose intimacy with the Atlantic, the sunny weather and the excellent sea shores make Portugal unique in Europe.

Don't miss Portugal in June 2011. Open arms and a lovely smile will be waiting for you.

Silvano Wendel
ISBT President

Academy Symposia

Molecular typing; red cells, platelets and granulocytes, quality management and a special full day symposium for doctors in training.

As well as the full scientific programme there will be three ISBT Academy symposia on Sunday June 19, 2011. Two symposia will be half day and the topics of these are Molecular typing; red cells, platelets and granulocytes and quality management. The molecular typing symposia has been organised by Geoff Daniels in association with the ISBT working party on red cell immunogenetics and terminology and the quality management symposium by the new ISBT working party on quality management.

The third symposium is an all day symposium and is specifically directed at doctors in training. It will cover many aspects of transfusion medicine from testing to clinical practice. You are encouraged to invite doctors in training to attend the congress and particularly this symposium. As well as learning more about transfusion medicine it will give doctors in training the opportunity to meet and network with colleagues from around Europe and the rest of the world.

Portugese Day

A Portuguese day will be held on Saturday, June 18, and it is hoped that many Portuguese speaking delegates not only from Portugal but worldwide will attend this day.

Plenary Sessions

There will be three plenary sessions:

- Cellular Therapies
- Ethics vein to vein
- Clinical Practice; New approaches to managing anaemia, thrombocytopenia and haemorrhage

Parallel Sessions

The parallel sessions include all aspects of transfusion medicine including administration, economics, donors and donation, testing and clinical practice. Some of the parallel sessions will be under the aegis of the ISBT Academy giving people the opportunity to familiarise themselves with the topic or obtain an update.

Social Programme

A social programme has been organised which will reflect the local flavours both in cuisine and culture.

Important Dates

Deadline for abstract submission:
February 1, 2011

Deadline for early registration:
March 25, 2011

All of the information about the 21st Regional Congress of the ISBT is available on the Lisbon website, **www.isbtweb.org/lisbon.**

Geoff Daniels

I have now been in the position of Secretary General for over three months and I am starting to get my feet under the table. There is a lot to learn and a lot to do. The learning process, together with the task of running and developing the Society, has been enhanced substantially by weekly teleconferences on Skype with Silvano Wendel (President) and Judith Chapman (Executive Director).

The ISBT is governed by its statutes and by-laws. The current Statutes were drawn up in 2003. Although this is only 7 years ago there have been significant changes in how the world communicates and these changes needs to be reflected in the Statutes as well as other developments. We are now working on a complete redraft of the statutes, before moving on to the by-laws. The purpose of this is not only to update them to reflect more accurately the requirements of the Society, but to change them from their legalese style of writing to plain English. Once the drafts are complete, the changes will have to be checked to ensure that they comply with Dutch law, as the Society's office is located in the Netherlands, and then agreed by the Board of Directors. There will then be an opportunity for ISBT members to comment on the draft, before final agreement by the General Assembly.

In October the AABB held its annual meeting in Baltimore. This is an international affair, with around 20% of over 3700 professionals attending from outside the USA and Canada. ISBT was very much on display with an exhibition stand excellently located just inside the entrance of the commercial exhibition, so all delegates passed our stand on their way into the exhibition and some stopped for a chat or just to pick up pens and post-its. This gave us an opportunity to talk to delegates about the ISBT and to recruit 30 new members.
The AABB as a society has a significant international programme, and many of its objectives overlap with those of ISBT, so it is very important that the ISBT collaborates with AABB and that the two societies do not compete with each other. In this spirit, several members of the ISBT Executive met in Baltimore with the AABB Executive, including the incoming and outgoing AABB Presidents. The outcome of this meeting was that the two societies will continue to work together for the promotion of transfusion therapies and research globally and that a memorandum of understanding will be drawn up to put this on a more formal footing.

The next congress of the ISBT is the Regional Congress in Lisbon, Portugal next June. The scientific programme is now almost complete and is available for reading on the ISBT web site. Don't forget, the deadline for abstract submission is 1st February 2011 and the deadline for registration at the lowest rates is 25th March. Lisbon is a city of explorers, so why not explore Lisbon yourself next June.

Geoff Daniels
ISBT Secretary General

Welcome
to our new members

September - October 2010

Americas
- **BRAZIL:** Ana Lucia Girello
- **MEXICO:** Maria Sagrario Romero Estrella
- **PERU:** Luis Miguel Otiniano Erroch, Carmen Rosia Rosales Francia
- **UNITED STATES OF AMERICA:** Suzanne Bakdash, Mark Edmunds, Martinez Fernando, Thelma Goncalez, Rania Hassanein, Mary Kowalski, Kevin Land, Marion Lanteri, Tatsuro Yoshida

South East Asia
- **INDIA:** Satyam Arora, Hari Krishan Dhawan, Suchet Sachdev

Europe
- **ITALY:** Samanta Beggio, Antonella Matteocci
- **NETHERLANDS ANTILLES:** Ashley John Duits
- **RUSSIA:** Karim Magadeev, Pavel Trakhtman
- **SPAIN:** Begona Urbieta
- **SWITZERLAND:** Christopher Bird, Marianne Senn
- **TURKEY:** Fahri Yuce Ayan, Guclu De Meyer, Levent De Neve

Eastern Mediterranean
- **SAUDI ARABIA:** Zeyd Merenkon

Oscar Torres, Regional Director,
Southern Americas

Main Issues in the Practice of Transfusion Medicine

Lima, Peru, September 22-26, 2010

The Latin American Residential Course "Main Issues in the Practice of Transfusion Medicine" organized by the European School of Transfusion Medicine (ESTM) in cooperation with the Peruvian Society of Hemotherapy and Blood Bank and the Latin American Cooperative Group of Transfusion Medicine (GCIAMT) took place in Lima in September 2010. The course was co-coordinated by Dr. Mariela Delgado Burga, Dr. José M. Cárdenas y, Dr. Oscar Torres and supervised by Prof. Umberto Rossi. It is important to emphasize the educational quality of the professors from Spain (Dr. Eduardo Muñiz Díaz and Dr. Mercedes Corral), from Peru (Dr. Diana Bolivar Joo, Dr.Nancy Loayza and Dr. Ernesto Manrique), from Venezuela (Dr. Graciela León de González) and Dr. Alejandro Chiera from Argentina. Several seminars and workshops were developed within the framework of an excellent participation between professors and 50 attending professionals from Central America, Caribbean, South America, Switzerland and USA. After 3 days of working, the coordinators and participants agreed on the following points concerning the status of Transfusion Medicine in Latin America:

1. A main problem in Latin America, even in those more developed countries, is the low percentage of volunteer blood donors, who should be also regular and well-organized. Changing the current profile of replacement donors is an urgent problem.

2. The social sensitivity and concern for public health problems of Transfusion Medicine professionals is increasing, but there is not always a favourable policy environment.

3. Scientific and educational activities of some National Societies of Transfusion Medicine are remarkable and intense, but unfortunately not all the countries have a local scientific society in order to help the professionals for improving their own needs.

4. Although in some countries the problem has already been well solved, there is a strong need for educational activities and teaching in Transfusion Medicine (in particular to voluntary blood donation recruitment and good clinical use of blood components) at all levels, which could facilitate understanding and discussion among professionals from different countries of Latin America.

5. The specialists in Transfusion Medicine demonstrate the urgent need for setting and maintaining meetings with clinical colleague's and users of blood products to avoid unnecessary transfusions and so improve the clinical indications for optimal use of blood components.

6. The support and help of many commercial firms and Europe, is what allows the development of many education initiatives, but this does not always correspond with the gradual development needs and progress in countries with limited resources, where there is a risk that their investment is not primarily aimed at the basics of safe transfusion.

7. The government support to the progress of Transfusion Medicine is present in some countries, but weak or absent in others.

8. The approval and implementations of the agreements between regional scientific societies could be an important centre of political aggregation for a harmonization of the basic procedures of Transfusion Medicine and its extension to the countries which do not have local societies yet.

By the reasons before mentioned, I consider it is necessary to create an institution in order to carry out programs of training and formation of human resource in Transfusion Medicine in collaboration with ISBT, GCIAMT (Grupo Cooperativo Iberoamericano de Medicina Transfusional) and National Societies of Transfusion Medicine in Latinoamerican countries.

Amalia Gpe. Bravo Lindoro,
Regional Director
North Americas

VIIIth National Congress of the Mexican Association of Transfusion Medicine (AMMTAC)

The VIIIth National Congress of the Mexican Association of Transfusional Medicine was held from September 15 – 19, 2010 in the city of León, Guanajuato, in the center of Mexico. The Congress was attended by 1300 people among whom were physicians, chemist, nurses, social workers, representatives of pharmaceutical industry and students.

We had the privilege to receive the honor of ISBT who gave us the aegis for all academic activities. Moreover, the presence and support of ISBT's President, Dr. Silvano Wendel, whose speeches on "Pathogen Inactivation" and ISBT in Latin America" were enriching.

The Congress took off on September 15 with five workshops with the topics of: Quality control, 15189 standard, Immunohematology, Nursing care in blood transfusion, and Voluntary blood donation.

From September 16th to 18th, five impressive seminars took place with the participation of 15 professors from Latin America, United States and Portugal, as well 40 national professors. The "***First Latin American Symposium on Quality Control***" was also held and was transmitted by videoconference in Argentina, Brazil, Costa Rica, Ecuador, Honduras, Nicaragua, Panama, Peru, El Salvador, Venezuela, and differents parts of Mexico.

Eighty papers were presented in posters on different topics related to problems of transfusion medicine in Mexico.

Twenty-five pharmaceutical companies and manufactures of medical devices for laboratory machineries installed their stands in a beautiful industrial exhibition in an area of 1,500 square meters. Three very successful satellite symposia with average attendants of 500 people were organized. We also had the opportunity to present the first publication of the Association: "Immunohematology: Recommendations to expert", that will be published in December 2010.

As part, of the social events the Opening Ceremony included a presentation of the **'History of Immunohematology in Mexico'**. Recognition was made of chemists and medical doctors who have a record of excellence in the field of transfusion in Mexico.

We also celebrated the Bicentenary of Independence of Mexico (September, 15) with traditional music, dance and food and of course tequila.

The whole transfusion medicine community in Mexico are very happy that we are the organizers of the International Congress of ISBT in 2012 and we would like to take this opportunity to invite all of you to know the culture, food and hospitality of our country.

Maxim Galimov, Deputy Head,
Ekaterinburg Blood Bank “Sanguis”, Russia

EASTERN EUROPE

Blood Transfusion Conference in Urals

A theoretical and practical conference ***‘The up-to-date Problems of Production and Clinical Transfusion’***, devoted to the 80th anniversary of the foundation of The Ekaterinburg Blood Bank took place at the Cultural Centre “Ural” on September 2, 2010. The conference was held under the chairmanship of the Professor Zhiburt E.B., the Head of Blood Transfusion Department of Pirogov National Medical Surgical Centre, and the Regional Director of ISBT for Eastern Europe.

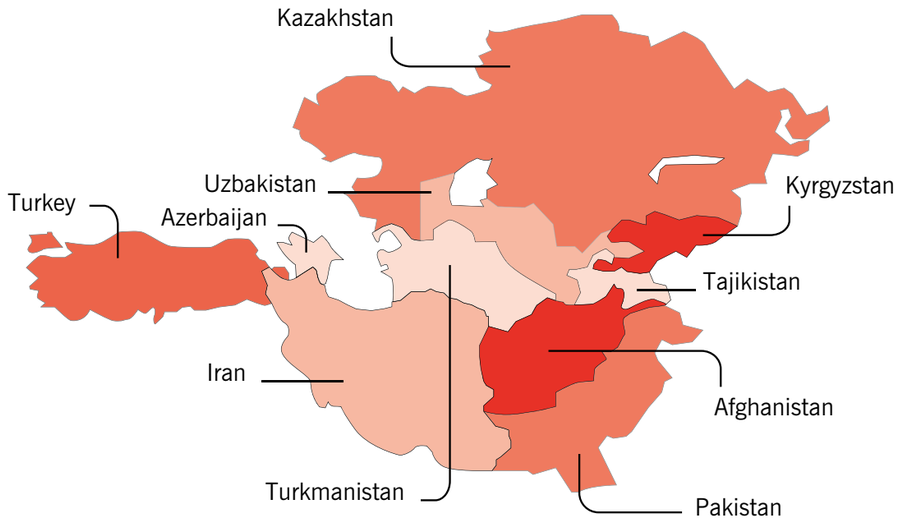
Within the bounds of the conference the participants listened to and discussed lectures on urgent problems of the work of blood banks, programmes of development of the blood donor movement in the region, infectious and immunological securing of the produced blood components, up-to-date conceptions of rational transfusion practice in blood transfusion, fluid therapy and parenteral nutrition. Blood bank physicians, anaesthesiologists and resuscitation specialists and hospital transfusiologists of the Ural Federal District, Moscow and St.-Petersburg participated in the work of the conference. The Regional association of the Specialists of the Transfusional Medicine (RASTM) and The Ural State Medical Academy took an active part in the organization of the Forum.

A great interest of the participants and guests of the conference was attracted by the medical exhibition, where the leading producers of equipment and consumable materials for transfusional medicine were presented. The Ekaterinburg Blood Bank demonstrated a new bloodmobile for donation in out-of-hospital conditions and those present could become blood donors during the official programme of the conference. It should be noted that the conference was being held in warm friendly air and in the opinion of the participants it was professionally useful, so taking all these facts into account The Ekaterinburg Blood Bank ‘Sanguis’ and RASTM made a decision to hold such Forums in the Ural Federal District regularly.

Abdol Majid Cheraghali, Iranian Blood Transfusion Organization Research Center and Dept. of Pharmacology, University of Baqiyatallah Medical Sciences, Tehran, Iran

Networking Among ECO Member States

An Emerging Opportunity for Improving Blood Safety in the Region



There is no doubt that a safe and adequate blood supply is an essential part of any given health system and reflects on the health status of the general population. A safe and adequate blood supply is a necessary prerequisite to enable health systems to respond to the demand and contribute to improving the public health status. Therefore safe and sufficient blood and blood components should be available and accessible for all patients in need of such products. WHO recommendations and guidelines, all highlight the importance of efficient blood services to protect donors, recipients and ultimately the population at large.

Lack of sufficient safe blood and blood components and non remunerated blood donors in several developing countries, the decreasing trends in blood donations in some other countries and ageing populations have raised new concerns with regard to the availability and access to transfusion therapy in both short and longer terms. Information exchanges, cooperation at regional and international levels are considered as effective measures for progress in this field.

The Economic Cooperation Organization (ECO) is an intergovernmental regional organization established in 1985 by Iran, Pakistan and Turkey for the purpose of promoting economic, technical and cultural cooperation among the member states. In 1992, the ECO expanded to include seven new members, namely Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

Diversity in blood transfusion services is very much visible among ECO member states. Some countries such as Iran have a very centralized public blood transfusion organization while transfusion services in some other member countries e.g. those in Central Asia are totally regional and fragmented. However, ECO member states see this diversity as an opportunity for cooperation in the field of blood safety.

Based on proposal made by Iran to the ECO secretariat the 1st meeting of the heads of transfusion authorities of the member states was held on June 2008 in Tehran, Iran. The aim of the first regional meeting was to review existing information, share experiences through benchmarking and priority setting for strengthening safety and availability of the blood and blood components. The participants tried to formulate regional cooperation on training, education and expertise exchange on transfusion services in order to have qualified system and human resources for member states. The network could also promote collaboration among national blood services for all aspects of availability and safety of blood products in order to improve quality of life and health care in member states. Therefore they agreed to establish a network in order to facilitate constructive communication between national transfusion services; encourage harmonization between member states and facilitate technical cooperation.

Following the 1st meeting, member states substantially increased their communication in the field of the blood transfusion services. Some training workshops were also planned. The 2nd meeting of the blood transfusion authorities of ECO member states was hosted jointly by Turkish Ministry of Health and Turkish Red Crescent in April 2010 in Ankara. The meeting reached a very promising consensus for extension of cooperation among member states on the priorities in the blood safety area. Currently ECO member states have established an electronic network to serve as a base for collection and exchange of data and information among the member states.

Information technology (IT) was also identified as a priority area for improvement and collaboration. It was suggested that a two-step process for integrating ECO countries should be considered. At the first step, all ECO countries should establish their own IT infrastructure to collect data regarding blood banking aspects. After that point, a combined network can be structured that collects common information from all countries and uses this information for the sake of the all countries from a central point of view.

The meeting underlined the importance of conducting short and long-term training courses for blood services staff and welcomed the willingness of some of the member states to conduct such trainings. The meeting also reviewed the importance of the availability of plasma derived medicines in their national health sector in order to respond to the need of patients to such medicines. Due to the importance of providing sufficient high quality plasma in improving availability of the plasma derived medicines the following was proposed by the meeting as the field of cooperation among the Member States:

- Exchange information on the plasma production and plasma derived medicines consumption through the network.
- Establish a national plan for improving safety of plasma produced in the national blood establishments
- Collaborate on plasma contract fractionation plan

As a follow up to the previously set priorities, Iran hosted two separate workshops on “voluntary donor recruitments” and “quality assurance in blood establishments” on May 2010. The workshops were very well attended by the experts from member states who discussed these two main priorities for the blood transfusion services of the ECO region. Since it seems that ECO network of blood transfusion authorities currently enjoy full support of high level authorities of the political and health sectors of the member states its efficiency toward improving the blood safety is very much promising. The network hopes to reach its milestones in blood safety through interregional and also international collaboration with international organizations such as WHO and ISBT.

EASTERN MEDITERRANEAN

National Haemovigilance Proposal

Saudi Arabia

Salwa Hindawi,
Director of Blood Transfusion Services,
King Abdulaziz University, Jeddah

Introduction

Haemovigilance as a safety concept refers to the use of a measurement system to record unwanted outcomes of transfusion chain. It involves a continuous surveillance of all the procedures in the transfusion chain. The intention is to collect and evaluate information on unexpected or undesirable events. The aim is to prevent the risk and/or to reduce the severity. In each country a clear plan and proposal should be submitted to an official local body responsible of transfusion services in the country to get approval and support. The proposal should include aim and objective of having such system, a written policy and standard to be followed, working group or committee to be responsible for the process of implementation, funds to cover system requirement and the running cost of the system. The decision must be taken to apply the haemovigilance system as voluntary or mandatory process according to the need of the country.

Haemovigilance Standards:

1. The National Authority for blood transfusion shall set quality and safety standards for the collection, testing, processing, storage and distribution of blood and blood components, when these are intended for transfusion. The requirement for so-called 'vein-to-vein' traceability.

2. Certain definitions related to Haemovigilance and Adverse Events shall be in place by National Authority according to national, international guidelines and definitions of such events (IHN,WHO, AHN).

3. The person responsible for the management of a hospital blood bank or the assigned Haemovigilance officer shall notify Hospital transfusion Committee with any serious adverse events related to the testing, storage and distribution of blood or blood components by the hospital blood bank which may have an influence on their quality and safety.

4. All Hospital shall have in place Transfusion Committee (HTC) which will be responsible for reviewing of all Haemovigilance reports received from the Haemovigilance officer and develop recommendations for future prevention of such incidents or events and for improvement of safety and quality of the Transfusion chain.

5. Blood establishments shall notify National Haemovigilance office with any serious adverse events related to the collection, testing, processing, storage and distribution of blood or blood components by the blood establishment which may have an influence on their quality and safety.

6. A professional Scientific advisory group shall be available and assigned through the National Authority to be responsible for the National Haemovigilance Office and to develop the National recommendations and policies to improve the overall quality and safety of Blood Transfusion in the country.

Haemovigilance Policies:

1. All adverse events related to Transfusion Chain should be collected, documented and reported manually or electronically to the Haemovigilance officer who will be responsible to reported to HTC after analysis and investigation is completed by blood bank for such events.

2. Monthly report of all events will be reviewed by HTC and recommendation to be in place for improvement of safety and quality of transfusion chain..

3. Any serious adverse events should be reported by Haemovigilance officer to the National Haemovigilance office in due time and an annual Haemovigilance reports should be submitted by all hospitals to the National Haemovigilance Office(NHO).

4. Professionals advisory group should analyses, advise and recommend for better practice in a confidential report to the participating hospitals.

5. A yearly anonymous report prepared by the advisory group should be generated to all participant hospitals to encourage reporting and improvement of practice through general recommendations.

In Conclusion:

Training, education and increase awareness among workers in blood transfusion facilities will facilitate the development and establishment of the haemovigilance system in all developing countries.

M Vermeulen, C Coleman, L Gaggia,
W Sykes, R Reddy

Individual Donation Nucleic Acid Testing (NAT) in South Africa and Emergent Diseases in Africa / South Africa

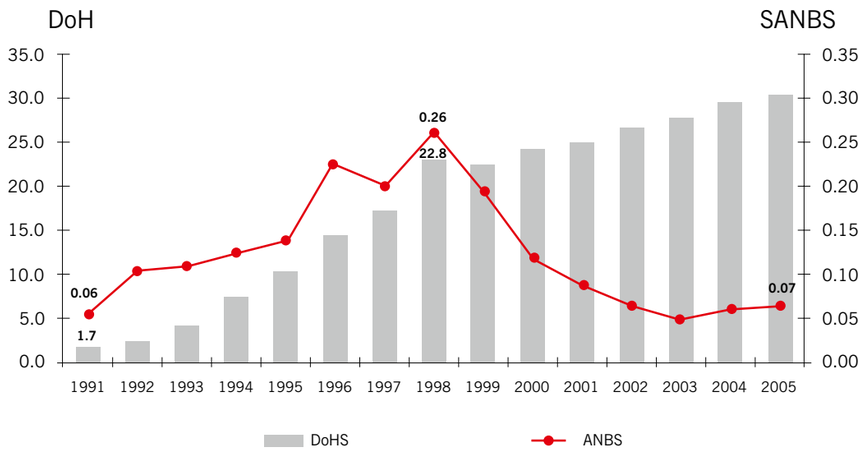
Blood safety and sufficiency continues to be a major challenge for the majority of countries in sub Saharan Africa. In many of these countries between 10 and 15 % of the population is HIV positive. Most countries still rely on family replacement donors and difficulties are experienced in implementing state of the art testing to improve blood safety. Due to funding constraints, poor infrastructure and scarcity of skills, the majority of countries have not implemented NAT testing for HIV and other viral markers.

The South African National Blood Service (SANBS) introduced a risk management system based on using gender, donation status and ethnic group to issue blood in 1998. This was due to the increase in HIV prevalence in blood donors (Figure 1)

While the strategy resulted in a significant decrease in HIV in the donor population (from 0.26% in 1998 to 0.07% in 2005), in early 2005 it became evident that the current donor selection practices at SANBS were unacceptable and SANBS had to review its donor selection criteria. Given the high prevalence of HIV in the population (Figure 2), SANBS had to implement state of the art NAT testing for HIV-1, HBV and HCV while increasing the donor base of previously excluded donors.

SANBS introduced Nucleic acid testing (NAT) on an individual donation (ID) basis for HIV-1 RNA, HBV DNA and HCV RNA and changed its strategy to include donors from all ethnic groups. The implementation of NAT testing in SANBS has

Figure 1: HIV Prevalence in Antenatal Clinic and SANBS Blood Donors



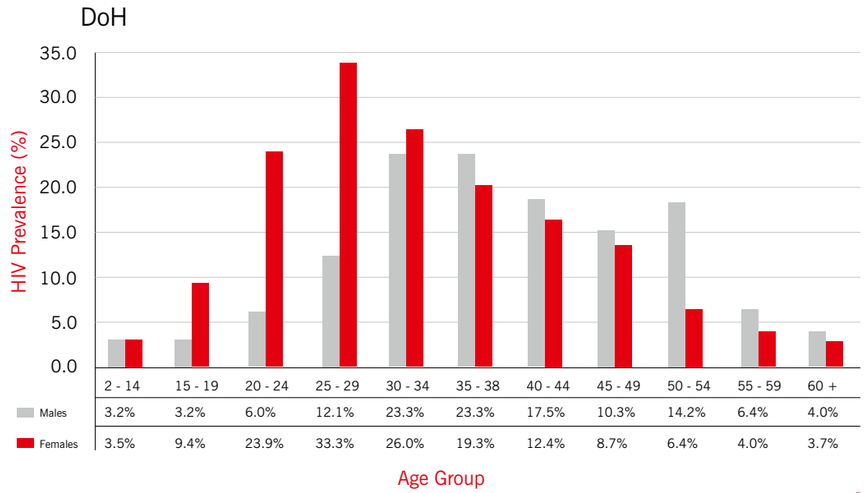


Figure 2: National prevalence by age and sex 2005

been extremely successful. The number of donations per annum increased from 715 000 in 2006/2007 to 737 518 in 2008/2009 and 793 000 in 2009/2010 financial years. In addition to this SANBS was able increase the donor base of Black donors from 4.2 % of all donors in 2006 to 22% of all donors in 2009. The introduction of NAT has resulted in an additional 81 HIV-1 NAT positive, anti-HIV negative donations being detected in the 3 year period (Table 1). Despite the year on year increase in prevalence of HIV in the blood donor population (0.10% in 2006 to 0.18% in 2009), the introduction of NAT testing has increased the safety of the blood supply as there has been no reported case of HIV transmission by blood since the implementation of NAT. Prior to NAT testing there was an average of two reported cases per annum where patients became HIV positive after receiving blood transfusions from individual that were in the window period.

Southern Africa is not a prevalent area for Chagas disease and Babesia. As of 10 May 2010, the Government of South Africa has reported 186 confirmed cases of Rift Valley Fever (RVF) in humans, including 18 deaths. For malaria SANBS uses a deferral system as well as recommendation for prophylaxis to patients receiving blood from donors who live in a malaria area.

Table 1: HIV Prevalence and ID NAT Yield 3 Year period

	2006/2007	2007/2008	2008/2009
Donations	715 000	725 417	737 518
HIV Infections (%)	734 (0.10%)	997 (0.14%)	1340 (0.18%)
HIV NAT yeild	16 (1:45493)	30 (1:24180)	35 (1:21072)

2011

February 9 – 11

13th International Haemovigilance seminar
Amsterdam, Netherlands
www.eurocongres.com/ihs
ihs@eurocongress.com

March 15 – 16

International Plasma Protein Congress (IPPC) 2011
Lisbon, Portugal
www.ippc2011.com
sophie@pptaglobal.eu

April 14 – 15

Sanquin Spring Seminar: Advances in Clinical Transfusion Science
Amsterdam, Netherlands
www.sss.sanquin.nl/
sanquin@eurocongress.com

May 10 – 11

The 2nd International Congress on Transfusion Medicine-Plasma Industry
Tehran, Iran
www.ibto.ir
congress@ibto.ir

May 24 – 25

IPFA/PEI 18th International Workshop on Surveillance and Screening of Blood Borne Pathogens
Dublin, Ireland
www.sanquin.nl/ipfa/
ipfa@sanquin.nl

June 18 - 22

21st Regional Congress of the ISBT, Europe
Lisbon, Portugal
www.isbtweb.org/lisbon
lisbon@isbtweb.org

November 20 - 23

22nd Regional Congress of the ISBT, Asia
Taipei, Taiwan
www.isbtweb.org/taipei
taipei@isbtweb.org


Fenwal
HERE AND NOW
The demand for the medicine's most vital resource never stops. And nor do we. At a center, on a drive, in a lab, by a patient, every moment of every day at your side with proven technology and real know-how. Here for you, to help make a lasting difference, now.
www.fenwalinc.com
Fenwal Europe
2 - 4 Rue Edouard Belin
B - 1435 Mont Saint Guibert
Belgium
Fenwal is a registered trademark of Fenwal, Inc. in the United States and other countries.