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In Focus

MULTIDISCIPLINARY TEAMWORK IN TRANSFUSION

ISBT

Editorial

The In Focus articles in this edition are great examples of how transfusion professionals interact with one another and the wider healthcare system. Teamwork and communication between all involved in the transfusion chain is vital to the safety of donors and patients, with many different roles contributing directly or indirectly to the provision of safe and appropriate transfusions for patients.

Although it has been another challenging year for all with the pandemic, the ISBT community has also kept working together and with partners, against all the odds, to further education in transfusion medicine in the new "virtual" environment. As well as regular webinars, a 3-day on-line workshop, organised by the Global Blood Safety Working Party, was held in September promoting WHO guidance on improving access to plasma derived medicinal products in LMIC countries, and ISBT had a successful joint session with the ABHH at their virtual meeting in October. We also have an exciting new collaboration with SRI - the 'Transfusion Roundup' providing selected randomised controlled trials and systematic reviews in transfusion medicine.

Despite the advantages of greater access to virtual events, we all look forward more than ever to meeting in person, so please save the date for the ISBT congress in Kuala Lumpur June 4-8, 2022 and watch the ISBT website for more news early next year. Also looking forward to 2022, nominations are open for the ISBT Board of Directors to take office in June next year; this is a great opportunity to get involved in steering the society's strategy, policy and objectives. The next edition of Transfusion Today will be with you in January as we reschedule editions for January, April, July and October, but for now I wish everyone a very happy festive season, and a safe and healthy new year.

Jenny White
Executive Director, ISBT

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TP, MDT, PBM, TxP: what are these, and how are they important for patient safety

TP = transfusion practitioner
MDT = multidisciplinary team
PBM = patient blood management
TxP = transfusion practice.

Transfusion of blood products can be life-saving, however it is not without risk. Patient blood management practices reduce the risk of exposure to blood products. To support safe PBM and TxP, robust systems must be in place. With the MDT, the TP plays a significant role in the development, implementation, education and audit of these systems, which in-turn supports patient safety.
The title Transfusion Practitioner is an overarching term that originated in the UK and is broadly used today. Other terms used for this role are Transfusion nurse, Transfusion safety/quality officer, Haemovigilance officer/nurse, Transfusion clinical nurse consultant and PBM coordinator/practitioner, just to name a few[1].

TPs come from different healthcare backgrounds, commonly nursing, laboratory scientists, and in some countries medical, which adds to the diverse skill sets of the role. As the backgrounds of the TPs are varied, so too are the activities they may undertake. Activities are driven by a combination of the TPs skills and the requirements/strategic direction of the organization where they work.

To fulfil the role effectively TPs interact with a multidisciplinary group of people across many different clinical specialties and health service environments. These interactions often include:

- health service executives
- governance/quality coordinators, data managers
- information technology staff
- junior and senior doctors
- scientists and nurses
- patients/carers and their relatives[2].

The transfusion/PBM team and the blood management/governance committee are vital MDTs that the TP interacts with, and they provide support, guidance and endorsement of activities, empowering the TP role. The importance of these teams/committees is escalated in countries with national transfusion guidelines and mandatory transfusion/PBM standards.

Developing close working relationships between the transfusion laboratory and clinical areas, has assisted the TP to establish and maintain safe TxPs[2], fostering information sharing between these areas and the broader health service. TPs with a laboratory background bring laboratory and blood banking knowledge, plus connections with blood suppliers and transfusion medical staff[2]. TPs from a nursing background bring clinical expertise, PBM and well established relationships with multiple teams. The strength of the MDT is the ability to build on the knowledge and strength of each team member to support evidence based practice, and assist with tackling challenges to support patient safety.
The diagram outlines the multidisciplinary touch-points of the TP that supports safe TxP, PBM and patient safety. TPs are the essential link, providing support, guidance and inspiration for change, both internal and external.

The ISBT TP forum has provided an avenue for colleagues networking, sharing of information, processes and knowledge. These experiences have taught the importance of multidisciplinary collaboration, and fostering of teams. MDT support and broad range of expertise assist with endorsement of activities along with engaging key stakeholders, which ultimately empowers the TP role.
TPs are key members of the MDT that supports improved patient outcomes, safe TxP and PBM.

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500 word Max (excluding title and ref)

In Focus Multidisciplinary Teamwork In Transfusion

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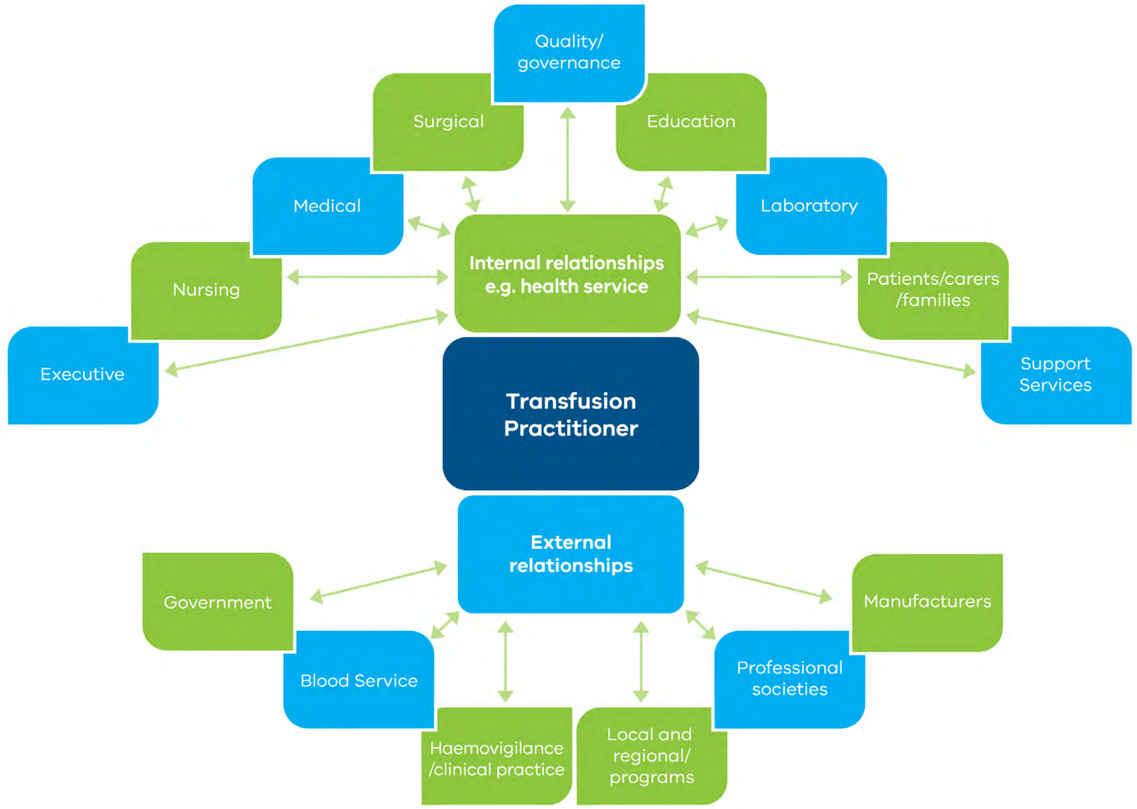
Figure 1:
Transfusion Practitioner role in the multidisciplinary team. Diagram fromBielby et al.[2], reprinted with permission #5150621363743



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Multidisciplinary education in transfusion medicine

Blood transfusion is a commonly performed medical procedure that improves and saves the lives of patients. Safe and effective transfusion relies on a multidisciplinary workforce (see Diagram 1) where each team member - at every stage of the transfusion chain - has the skills and knowledge required for their role.

The World Health Organization (WHO) states that 'interprofessional education is a necessary step in preparing a collaborative, practice-ready workforce that is better prepared to respond to local health needs'.[1] This was corroborated by the 72nd World Health Assembly Global Patient Safety Action Plan that urged member states 'to build sustainable human resource capacity, through multisectoral and interprofessional competency-based education and training, based on the WHO patient safety curricula and continuous professional development, to promote a multidisciplinary approach, and to build an appropriate working environment that optimizes the delivery of safe health services'.[2]

In transfusion medicine there are many areas of knowledge that are required by multiple professions. Training and teaching should aim to be relevant to the specific need and context of the different roles in the vein-to-vein delivery of blood products. One common, everyday example is patient identification that must be undertaken by:

- clerical and administration staff (admitting patients)
- orderlies/porters (collecting and transporting blood)
- phlebotomist (collecting and labelling specimens)
- nurse and midwives (collecting and labelling specimens, collecting blood and transporting, administering products)
- laboratory staff (identifying, testing and crossmatching samples, storing and issuing correct blood products)
- medical doctors (collecting and labelling specimens, gaining consent, prescribing and administering blood products).

Multidisciplinary education has been shown to have both direct and incidental benefits, including:

- a better understanding of each team member's role and scope of practice
- promotion of interdisciplinary collaboration, teamwork and good communication
- the building of mutual respect and trust
- a positive impact on patient outcomes[3] e.g., understanding of what can go wrong with transfusion practice has helped professions come together to implement clinical practice improvement strategies
- ease in implementing new guidelines or change of practice
- cost effectiveness, due to larger audience numbers.

While there are challenges associated with writing and delivering learning packages that suit multiple professions, overcoming professional silos, and different competency and certification requirements for each profession, well-structured multidisciplinary education can overcome these to enhance the benefits.

BloodSafe eLearning Australia

BloodSafe eLearning Australia is an Australian education program aimed at all professions in the clinical transfusion chain. It delivers free multidisciplinary, online courses with defined learning outcomes.
As of 30 June 2021, there were more than 70,000 doctors, 544,000 nurses and midwives, and 45,000 scientists and other professions who had completed more than 1.5 million courses on clinical transfusion practice and patient blood management. This is an ISBT accredited course. www.isbtweb.org/isbt-academy-and-support.
Free access is available at www.bloodsafelearning.org.au.

Acknowledgements

The authors thank the BloodSafe eLearning Australia team members who provided input into this article.

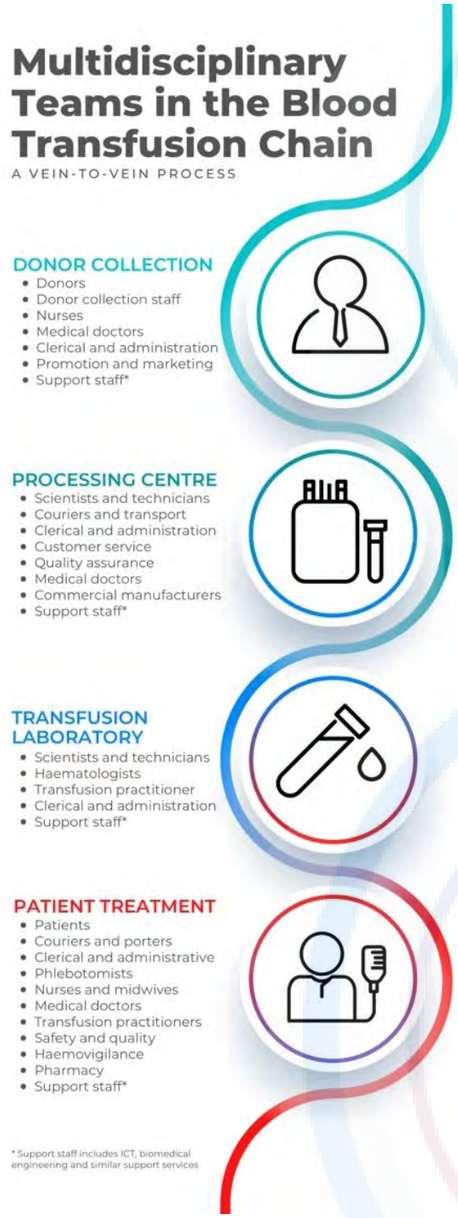

Diagram 1 Multidisciplinary Transfusion Teams

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My Role as a Medic at the Blood Centre in the Transfusion Chain

The goal of the National Blood Service Ghana is to provide safe and adequate blood supply that relies on voluntary unpaid blood donations for patients who need blood transfusion as part of their treatment.

In December 2014, I joined the Southern Zonal Blood Centre of the National Blood Service as a Haematologist with the role of promoting safe and appropriate blood donation and transfusion practices.

As a medical doctor, I was required to oversee aspects of blood donor selection, blood collection, and adverse donation events. This role acts as the advocate for donors and recipients by ensuring the safety of both. As the lead of a team working in donor selection, I was responsible for ensuring good ethical conduct by all staff, through training and field supervision. Also, I provide consultation to donor care team, made up of nurses and technical assistants on donor acceptability and deferral. I work in collaboration with donor care nurses to evaluate, follow up and manage adverse donation events as well as donors with abnormal test results.

The management of blood donors is an essential aspect of the Southern Zonal Blood Centre's activities. Working with laboratory scientists as a clinician helps in addressing confirmatory testing and subsequent management of donors who are reactive to transfusion transmissible infection testing. Similarly, my work with nursing staff at the clinical services unit of the Southern Zonal Blood Centre, facilitates effective post donation counselling and deferral of blood donors.

Furthermore, I am involved in training of different levels of staff, maintaining and coordinating educational programs, developing and implementing new training ideas for nursing, medical and laboratory staff, and in the management of patients requiring and/or receiving blood and blood components.

Though I am based at a Blood Centre, my role involves working closely with all hospitals in the catchment area of the Blood Centre that practice blood transfusion. This role is to ensure that agreed protocols are followed, and to utilize extensive knowledge and skill base to provide specialist/technical support, in relation to all aspects of the transfusion process, working in collaboration with the both Blood Centre and Hospital Blood Bank Medical Laboratory Scientists.
As a clinician at the Blood center Centre I liaise with the clinical units in hospitals to ensure a high standard of clinical transfusion practice.

Providing consultation on acceptability of donors for pre-operative autologous transfusion is another role that I play in in my work with surgeons and anesthetics, geared towards providing alternatives to allogenic blood transfusion to patients.
Additionally, my role involves supervision and initial evaluation of patients who present to the Blood Centre with prescriptions for therapeutic venesection.

I have been Involved in policy making and establishing standards for Blood Centre operations and hospitals practicing blood transfusions
These roles together with multidisciplinary nature of all employee, constitute a larger course that results in propelling the National Blood Service in achieving its objectives.

Charl Coleman
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The role of the laboratory Scientist in blood transfusion

A committed team of blood transfusion professionals are involved in the journey of blood from the collection, processing, testing and issuing to the logistics of getting blood products to patients. Laboratory scientists (LS) form an essential part in this value chain.

The LS ensure that good laboratory practice (GLP) and good manufacturing practice (GMP) are maintained. In addition, providing oversight to specific ISO standards in the laboratory space e.g. ISO 15189, 17025, 17043 and 20387 (ISO, 2021) is important.

Processing blood into its different components is a specialized field. The LS is trained in these processes to ensure high quality blood products. Pathogen inactivation is an example of one of the newest advances involving blood processing. It has been implemented by many countries and reduces the risk of emerging pathogens (Atreya et al., 2019).

Blood collected from donors require testing to ensure it is safe for patient use. Testing of blood for transfusion transmissible infections (TTI's) started in the 1940's with syphilis screening, but really took the limelight with the emergence of Human Immunodeficiency virus (HIV) in the 1980's (Fong, 2020). Screening for HIV, Hepatitis B and C and Syphilis has become essential to ensure safe blood supply as per WHO recommendation (WHO, 2010). Selective screening are applied in certain countries for additional TTI's (Fong, 2020). Screening tests available vary from manual to automated, as well as from serological to molecular. The LS are skilled in performing different assay techniques and operating specialized instrumentation. Immunohematology remains an integral part of the LS skill set with blood group serology as the backbone of transfusion safety.

Prior to issuing of blood to a patient, the LS are at the forefront to ensure the blood selected for a patient is compatible and safe for transfusion. The LS is skilled in immunohematology as they determine the patients' blood group and screen patient blood for irregular antibodies. When patients have irregular antibodies, the process of finding them compatible blood can become complex. The knowledge and skill of the LS in identifying the correct donation for the patient is essential and can involve specialized techniques e.g. genotyping of patients and/or blood donors. This is also important where patients have rare blood groups and/or antibodies to common antigens which makes compatibility difficult.

The LS is also skilled in chemistry, microbiology, haematology and immunology. Additional tests include serum ferritin, bacterial screening and full blood counts to ensure the quality of products. They are at the forefront of specialized analysis of blood products for specific patient needs e.g. pre- and post-natal genetics and human leucocyte antigen (HLA) typing. The LS play an integral part in education and training of prescribing practitioners as well as the management of transfusion services.

The role of the LS has evolved over years with automation becoming prominent in the laboratory space which provides consistency, quality and eliminates human error. This enabled the LS to acquire and enhance their scientific skills by performing specialised investigation and research in the respective disciplines.

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The anesthesiologist's role in transfusion practice

The anesthesiologist, or anesthetist in the UK, is the only physician that physically manages blood transfusion. This typically starts at the beginning of a surgical procedure when a preoperative history and exam are being performed. At this point, the patient's blood work is reviewed. Hopefully, the anesthesiologist is aware of the maximum surgical blood order schedule so that he or she can assure that adequate blood is available for the planned surgical procedure. Once the surgical procedure has started, the anesthesiologist will monitor the amounts of blood loss, follow vital signs to make sure that the hemodynamic status of the patient is stable from the blood loss that has occurred. Ideally, this blood loss should be monitored with laboratory data, either from a central lab or from point of care laboratory testing. When a transfusion trigger is crossed then the anesthesiologist would be calling the blood bank to deliver a fixed amount of blood to the operating room. If blood loss is massive, then a massive transfusion protocol would be implemented. When the blood arrives, the anesthesiologist will check the blood against patient identifiers to assure that the blood is correct for the patient being cared for. This is typically done in conjunction with a nurse so that there are always two sets of eyes on the patient identifiers. Prior to hanging the unit of blood, a blood administration set is arranged which has a macroaggregate filter and typically is run through a blood warmer. The anesthesiologist will monitor the patient's vital signs throughout the administration of the blood.

In addition to managing the transfusion, the anesthesiologist also oversees intraoperative patient blood management efforts. This would include oversight of any autotransfusion (cell salvage) that is taking place in the OR during the surgery. He/she would also perform any acute normovolemic hemodilution (ANH) prior to the start of surgery. The anesthesiologist would draw blood work for monitoring the need for blood. The anesthesiologist makes sure that the patient stays warm during the procedure because blood coagulation doesn't function normally in cold patients. The acid-base status of the patient is also monitored because acidosis interferes with prothrombin to thrombin conversion. The anesthesiologist can also make determinations around deliberate hypotension which can be achieved in several different ways including the use of vasodilators or overdosing with anesthetic agents.

In addition, the anesthesiologist would be managing any drug therapies that are deemed appropriate. This would include giving tranexamic acid, aminocaproic acid, desmopressin, Factor 7 concentrate, and 4 factor PCCs and in the obstetrical world include oxytocin, methergine, and carboprost. If blood loss is massive, there may be a need for drugs to support the blood pressure. This would include a wide variety of drugs that lead to vasoconstriction such as norepinephrine, epinephrine, phenylephrine, or ephedrine.
In general, the anesthesiologist is the lifeguard of the Operating Room. It tends to be 99% boredom but 1% panic so the typically anesthesiologist is very down to earth, and nothing tends to rattle him or her.

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Carol Cantwell
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The role of the Medical Scientist as part of the multi-disciplinary team

Helen Kelleher is quoted as saying "alone we can do so little; together we can do so much". This is also true with regards to patient care and diagnosis of disease. Provision of healthcare is a complex arena that requires the involvement of many professionals, with medical scientists playing a fundamental part of that multi-disciplinary team (MDT).

A Medical Scientist in the Republic of Ireland (ROI) is a state registered scientist who works in healthcare. The main role of a blood transfusion medical scientist is determining patient blood groups, identification of the presence of atypical red cell antibodies and identifying the significance of these antibodies for the patient with regards to either pregnancy or transfusion. Another key aspect of the role is the provision of appropriate blood and blood components for patient transfusions whilst ensuring the appropriate levels of blood stocks are adequate for emergency situations such as major haemorrhages.

Historically, medical scientists were often thought of as purely laboratory based with interaction with the patient clinical team limited to phone calls. However, these phone calls were the starting point of a better interaction with medical scientists and a realisation that it might be a good idea to ask if a medical scientist could attend an MDT. The blood transfusion medical scientist is often requested to be present in MDTs such as transplantation, obstetrics, major haemorrhage and trauma review.

The blood transfusion medical scientist is invited to a MDT meeting because of their expertise in blood transfusion serology, its interpretation and significance as well as the practicalities of ensuring timely provision of blood and blood components. The MDT also allows the Blood Transfusion Laboratory to be aware of and prepare for the arrival of patients with specific transfusion requirements which would otherwise have taken significant time to prepare. Benefits to the patient include a safer and more organised level of care as the laboratory is made aware of these patient requirements that were discussed at the MDT.

In the ROI, a new national clinical guideline has been released "Unexpected Intraoperative Life Threatening Haemorrhage" and one of the key recommendations is that there should be a case review by a wider team post unexpected life threatening haemorrhage to include the chief medical scientist.

When we think of MDTs we think of formal meetings where the whole team are present however MDT working can happen within a smaller group with the medical scientist being asked for guidance for particular situations such as major haemorrhage. As a consequence of medical scientists participating in MDTs the communication has now gone full circle with increased phone calls to the laboratory as the patient's clinical team want the medical scientist advice on particular patients.

As a medical scientist, the role within the MDT is one based on collaboration, respect, and in-depth understanding of the internal processes and structures within the laboratory and wider hospital departments. This knowledge creates a dynamic medical scientist, one who can connect and communicate effectively and efficiently to the necessary MDT members in order to support effective patient care. This is a critical component and undoubtedly plays a key role in improved patient outcomes.

From the President

Welcome to Transfusion Today!

In this edition we focus on the multidisciplinary transfusion team. I am looking forward to hearing from the contributors from around the world who are sharing their experiences with us.

There's no question that transfusion is a complex system – literally, from "vein to vein", and with many steps and inter-dependent processes. We need a whole team of people to get things done and deliver safe transfusions to patients who need them.

Some of the transfusion team members are well known to everyone, whether we work in a blood centre, a clinical service, a laboratory, or in research, policy or other areas. For example, nurses play key roles in donor care and blood collection activities, and in caring for patients. In some countries, 'transfusion practitioners' or 'TPs' are predominantly from a nursing background, and in other countries many TPs are from a biomedical scientist background. More information on the diverse TP roles and activities from patient blood management (PBM) to haemovigilance is available through the TP webpage at the ISBT website. Other biomedical scientists, technicians and technologists may work at the diagnostic or transfusion laboratory bench, or in component preparation, or in quality management. Doctors are represented in the team by the range of medical, surgical and other specialists in the hospital and outpatient setting, including transfusion medicine specialists and pathologists overseeing the transfusion service, as well as family doctors who play important roles in PBM, such as through identifying and managing anaemia or iron deficiency.

But these groups are only part of the story of the multidisciplinary transfusion team! ISBT celebrates all the donor recruiters, communication specialists, educators and trainers, IT teams, data managers and analysts, administrators, logistics teams and many others in their diverse roles that keep us operating. And without drivers to transport donations and finished products for transfusion, and porters or orderlies to transport samples and products around the hospital, the system would literally grind to a halt! Industry colleagues provide essential products and services, and share their expertise in the field, and researchers are working to improve our knowledge base and its application. Volunteers contribute their time, energy and goodwill in many ways.

In addition to acknowledging the importance of the knowledge, technical skills and expertise of everyone involved in the transfusion team, part of the enjoyment of our professional lives is working with and learning from a range of great people. When I was a medical student, we spent some days working with the nursing staff on the ward to help us understand the nursing role in our multidisciplinary team. What an insight that provided! Even a glimpse into the work of others is a valuable learning experience, and everyone can provide a different perspective on a problem and contribute to a solution. One of the highlights of my week is our hospital transfusion team meeting, with our transfusion nurse consultants, transfusion laboratory senior scientists, registrars and haematologists, and often with other nurses and clinicians from the different specialties. We work together through the problems and issues of the moment, and support and educate each other. I always learn a lot, and being part of a good team is a great feeling.

Please get involved with your multidisciplinary team wherever you are, and with all the opportunities that ISBT offers. I hope you enjoy this edition of Transfusion Today!

Welcome to our new members

September 2021 - December 2021

Africa

Nigeria:	Okeoghene Ukpele

Americas

Canada:	Tara Winckler

Eastern Mediterranean

Pakistan:	Naeem Jabbar, Muhammad Saeed

Europe

Belgium:	Claire Thiry
Germany:	Heiko Rühl
Russia:	Maria Appalup
Spain:	Montse Serra, Jordi Puig
United Kingdom:	Julie Jackson

South East Asia

India:	Sirat Kaur
Thailand:	Morakot Emthip

Western Pacific

Australia:	Shaoan Chen
Hong Kong SAR of China:	Wai Nam Leun

Elections for the ISBT Board of Directors 2022 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. During 2020-21 many of these meetings have been held on Zoom due to the pandemic, and virtual meetings may continue whilst international travel is disrupted. 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 on Tuesday June 7, 2022.

Nominators Individual, Honorary or the designated representative of Affiliate members who are accepted members of ISBT on Tuesday December 7, 2021 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 North Americas**
- **Regional Director South Americas**
- **Regional Director Eastern Mediterranean**
- **Regional Director Western Pacific***
- **Regional Director Europe***

* Nominations cannot be accepted for members resident in The Netherlands or Australia because there is already a Regional Director 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 of the Society and must be accepted members of ISBT on Tuesday December 7, 2021 **at 17:00 Central European Time**.

Nominators and nominees (candidates) should communicate before proceeding. Candidates will be required to provide:

- A brief biography of and statement of intent. This will be included on the election website.
- A declaration that they accept the nomination, have read the duties of the role, will play an active role in the Society's work and that they will work within the ISBT Code of Conduct for the Board of Directors.
- A high resolution headshot photo.

Please read the call for nominations notice which can be found on the Elections 2022 page of the ISBT website. The nomination process will be online only and details and a link can also be found on the Elections 2022 page of the ISBT website.

Nominations open on December 7th, 2021 and the official deadline for receipt of nominations is Tuesday February 15, 2022 **at 23.59 Central European Time.**

Martin Smid
Sanquin
The Netherlands

Workshop GBS Working Party

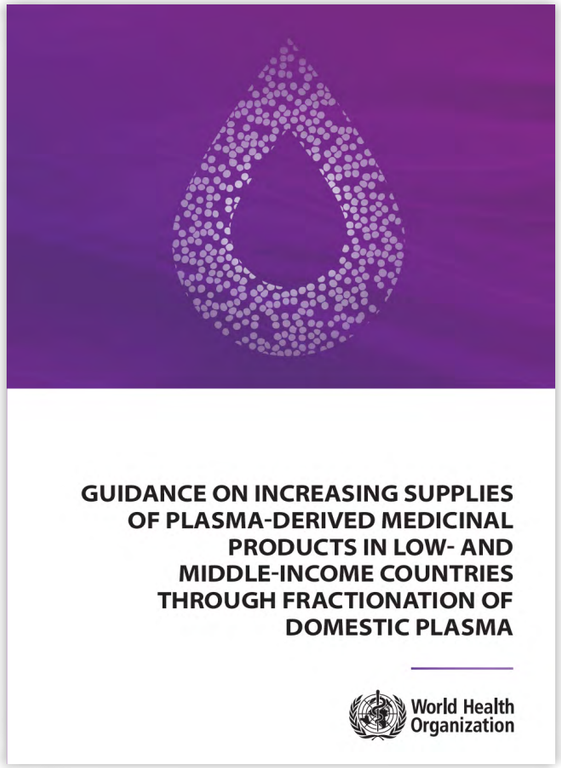
The first workshop organized by the ISBT WP GBS entitled "Stepwise Access to Safe Plasma Products in Resource Constrained Countries: Local Production & Pathways to Fractionation" took place on September 21-23, 2021.

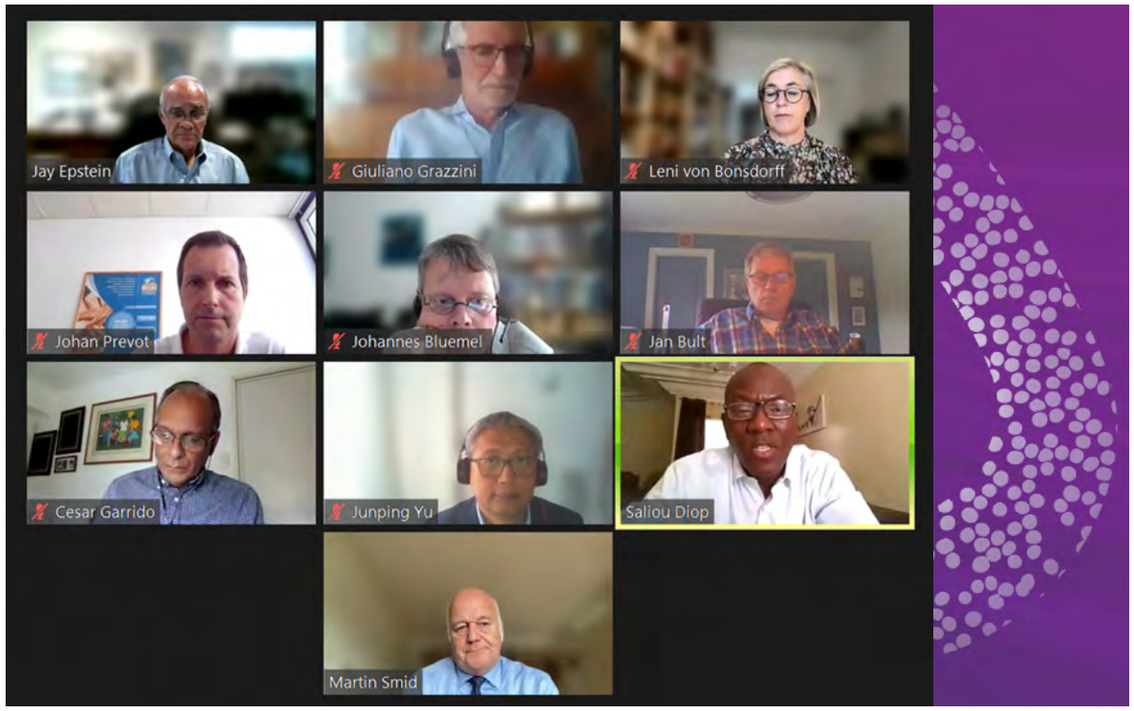
The WP GBS aims to draw attention on the access to safe blood and plasma products in the low resource environment and develop pragmatic stepwise solutions that fit in that environment. The workshop was designed to identify technical options for stepwise access to safe plasma protein therapies to support implementation of recent WHO guidance documents.

Patients in low- and medium- income countries (LMIC) lack plasma-derived medicinal products (PDMPs) for their treatment. To improve the availability of PDMPs in LMIC, WHO has launched a global initiative entitled "WHO Action framework to advance universal access to safe, effective and quality assured blood products 2020 – 2023" and published two guidance documents in 2021 that are relevant to preparation and use of plasma.

In close consultation with WHO BSP (Blood Safety Programme), the ISBT WP GBS worked since the beginning of 2021 to assemble a Workshop to identify pragmatic technical options for "stepwise access to safe plasma protein therapies in resource-constrained countries" to support implementation of recent WHO guidance on "Increasing Supplies of Plasma-derived Medicinal Products in LMIC". Further, patients organizations, the World Federation on Hemophilia (Cesar Garrido and Saliou Diop) and the International Federation of Blood Donor Organizations (Giuliano Grazzini), the International Patient Organization for Primary Immune Deficiencies (Johan Prevot), plasma fractionator organizations, the International Plasma Fractionators Association (IPFA) and the Plasma Protein Therapeutics Associations (PPTA), as well as industry regulators, independent plasma fractionators, pathogen inactivation technology and equipment suppliers, independent industry consultants, etc. contributed to the programme and the panel discussions.

During the workshop, after a welcome speech by Professor Erica Wood, president of our society, attendees were able to learn about the devastating situation for patients with coagulation disorders and immune deficiencies in low resource environment (lack of treatment in combination with underdiagnosing); options for fractionation of plasma (make plasma available for contract or domestic fractionation by improving quality), technology and examples for local production of virus inactivated plasma and cryoprecipitate (mainly modes of virus inactivation/reduction technology); stepwise scale up of domestic processing of plasma with examples of small scale production of immunoglobulins; references to models for domestic plasma processing technology transfer and technical assistance; considerations for single-use processing; and, finally, a panel discussio
about lessons learned and next steps.





Analysis of attendance supports that the workshop fulfilled a need, with a total of over 850 attendees over the 3 days (350-450 per day) from 84 countries including multiple continents. It also expresses a strong expectation for a continuation of the collaborative efforts (ISBT-WHO-WFH-IPOPI) with hope for translation into actions aiming at establishing projects assisting local production of virally-safe plasma protein products. The shape of these follow-on activities is being defined by ISBT WP GBS in collaboration with essential stakeholders including WHO, WFH and IPOPI.

Organizing a workshop of this scale was new to GBS. Selecting knowledgeable speakers was key to ensure excellent balanced presentations. Strong and complementary involvement of all was vital including the GBS organizing group (Jay Epstein, Jean-Claude Faber, Thierry Burnouf, Martin Smid), WHO (Yuyun Mariuningsih, Junping Yu); patient organizations (Cesar Garrido for WFH and Johan Prevot for IPOPI); and external moderators (Micha Nuebling, PEI). In addition the technical and administrative support from ISBT office (Jenny White, Eszter, Leonne and Beatriz) was indispensable to fulfill ISBT regulations and to provide smooth and user-friendly organization.

Recordings of the workshop are available on the ISBT website: https://www.isbtweb.org/working-parties/global-blood-safety/workshop-recordings

References:
1 WHO strategic framework to advance universal access to safe, effective and quality assured blood products 2020 – 2023: https://apps.who.int/iris/bitstream/handle/10665/254837/EMROPub_2017_EN_19608.pdf?sequence=1&isAllowed=y
2 WHO Guidance on increasing supplies of plasma-derived medicinal products in low- and middle income countries through fractionation of domestic plasma: https://apps.who.int/iris/bitstream/handle/10665/340171/9789240021815-eng.pdf?sequence=1&isAllowed=y
3 WHO Guidance on centralization of blood testing and processing: https://apps.who.int/iris/bitstream/handle/10665/340182/9789240020825-eng.pdf?sequence=1&isAllowed=y

ISBT Clinical Transfusion Working Party

The International Society of Blood Transfusion (ISBT) clinical transfusion working party is a multidisciplinary working party interested in promoting best transfusion practices and clinical transfusion research. We accomplish our aim by bringing together international transfusion experts to optimize clinical transfusion practice by providing a platform of exchanging knowledge among transfusion specialists, developing clinical resources in transfusion medicine, and updating the ISBT's library of evidence-based transfusion guidelines, which are fully accessible through the ISBT website.

The working party has more than 60 members from different countries and different professional background. The working party has different subgroups; clinical apheresis, education, hemoglobinopathies, patient blood management, paediatrics, transfusion practitioners and Wikipedia. The subgroups publish their activities through the working party website. The working party is eager to engage young professionals by involving them in the different subgroup activities.

The working party has participated in global COVID-19 related research through the COVID-19 convalescent plasma-working group since the beginning of the COVID-19 pandemic. This group had different projects that have resulted in a number of publications in Vox Sanguinis and a webinar on the use of COVID-19 convalescent plasma (CCP). The publications covered guidance for the procurement of CCP in treating COVID-19 patients, an International Forum on the collection and use of CCP with existing protocols, challenges and lessons learned, and the use of therapeutic plasma exchange in COVID-19. In addition, the working party is involved in organizing the ISBT **Live Journal Clubs** with the participation of young professionals from around the globe through the ISBT young professional council. The working party is also involved in mentoring young investigators in the ISBT **I TRY IT** program for young investigators to learn how to plan a research in the Clinical Transfusion field. In addition, members of the working party are enrolled in the new ISBT **mentorship program** for mentoring young professionals. The working party is also actively participating in conducting global projects and benchmark surveys, including shared projects with other organizations. Moreover, the working party members were involved in revising the WHO **Clinical use of Blood** manual, conducting the **ISBT/ICTMG journal club/webinars,** and developing the **E-learning module** for transfusion certificate in transfusion reactions in collaboration with the European Blood Alliance (EBA). This E-learning module is an accredited program that has been made free of charge to the learners.

The working party has recently elected a new chair; Arwa Al Riyami from Oman, vice-chair; Mark Yazer from USA, and a new Secretary; Satyam Arora from India for the upcoming term. A big thank you to Cynthia So-Osman for her excellent work as the previous chair! The working party met recently in its second virtual meeting of the year. Work is ongoing to update the working party page, establish new initiatives, and initiate regular social media posts using the ISBT accounts on the different social media platforms.

If you are interested in joining the ISBT Clinical Transfusion Working Party, we invite you to submit your application electronically through the working party webpage.
https://www.isbtweb.org/working-parties/clinical-transfusion.

We look forward to working with you!
#ISBTClinical

Satyam Arora is an associate professor in transfusion medicine at Postgraduate Institute of Child Health, Noida, India. He has more than 12 years of experience in the field of transfusion medicine and did his additional training in bone marrow transplant from Cleveland Clinic, USA. He has been associated with ISBT for almost a decade. He received the prestigious Harold Gunson Fellowship award of the ISBT in 2012 and the Transfusion-Transmitted Infectious Diseases (TTID) Working Party Travel Award in 2014. Dr Arora was chairperson of the young professional council from 2019-20 and is representing the region of south east Asia since 2018. He is presently a member of the panel of experts for the Donor Vigilance programme of India. He is also vice-chair of the pediatric sub group of the clinical transfusion working party. He was part of the clinical trial on use COVID-19 convalescent plasma (CCP) in India (PLACID Trial). He has more than 30 publications to his credit. His areas of interest are pediatric transfusion, cell therapy, hemovigilance and transfusion transmitted infections diseases.
Twitter: @arorasatyam12

From ISBT Central Office

Mark Yazer

Mark Yazer is the returning vice-chair of the working party. He is a Professor of Pathology at the University of Pittsburgh, a Visiting Professor in Pathology at Tel Aviv University, and an Adjunct Professor of Clinical Immunology at the University of Southern Denmark. His research focus is on blood use in massive hemorrhage.

Satyam Arora

Arwa Al Riyami
BSc. MD, FRCPc

Arwa Al Riyami is a Senior Consultant Hematopathologist at the Sultan Qaboos University Hospital (SQUH), the Sultanate of Oman. She is a member of ISBT since 2016, a member of ISBT Clinical Transfusion working party (since 2017), ISBT Transfusion Transmitted Infectious Diseases working party (since 2018), ISBT publication committee (since 2018), and ISBT Global Blood Safety Working Party (since 2020). She is a member of the ISBT Young Professional Council in representation of the Eastern Mediterranean region and chaired the Council in its first year in 2018-2019. She served as a repertoire of the Clinical Transfusion working party (2016-2020) before she was elected as a chair.

She has an interest in transfusion medicine, blood banking and cellular therapies. She participates as a mentor of the young investigator participating in the ISBT I TRY IT program since 2018. I was also involved in the development of the ISBT E-learning module for young professionals. During 2020-2021, she served in the ISBT Convalescent Plasma Working group. She was involved in the review of two chapters in the WHO book "General use of blood" and in review of abstracts submitted to ISBT congresses.
Linkedin: linkedin.com/in/arwaalriyami
Twitter: @DrRiyamia
Instagram: @Drriyamia

Catherine Kimber
Systematic Review Initiative, NHS Blood and Transplant, UK

Allison Mo
Monash University, Australia

Alicia Plaza Cajide
Systematic Review Initiative, NHS Blood and Transplant, UK

Introducing the Transfusion Evidence Round-Up

The *Transfusion Evidence Library* (TEL) is delighted to be working with ISBT to launch a new service, the *Transfusion Evidence Round-Up*. This will provide ISBT members and TEL subscribers with a quarterly newsletter, curating the top articles on an internationally relevant subject within transfusion medicine. The ISBT Board was supportive of a proposal for ISBT and TEL to work together to expand the dissemination of outstanding studies relating to transfusion medicine, including those not published in specialist transfusion journals. We decided to build on the success of the TEL current monthly Transfusion Evidence Alert – and follow a similar format, to produce the quarterly Transfusion Evidence Round-Up with ISBT.

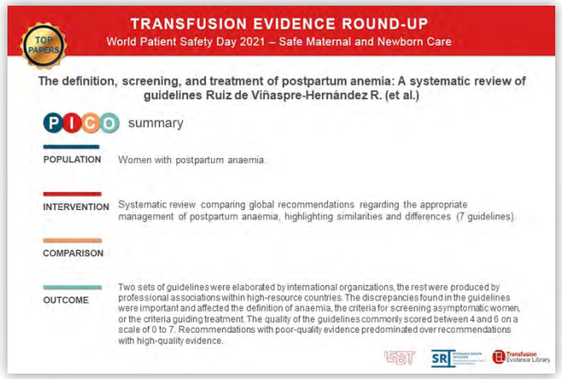
Since the first Transfusion Evidence Alert was emailed eight years ago, the Transfusion Evidence Library has increased the number of subscribers to over 9,000, and visits to this unique digital library have broadened to include all continents. Originally a subscriber-only service, TEL is now free to access worldwide. Since dropping the paywall, its usage has increased, with users searching articles in all areas of transfusion, from blood donor recruitment to transfusion adverse events. Only last month it was visited by clinicians, researchers and patients in 55 different countries, showing a clear benefit of changing the access model.

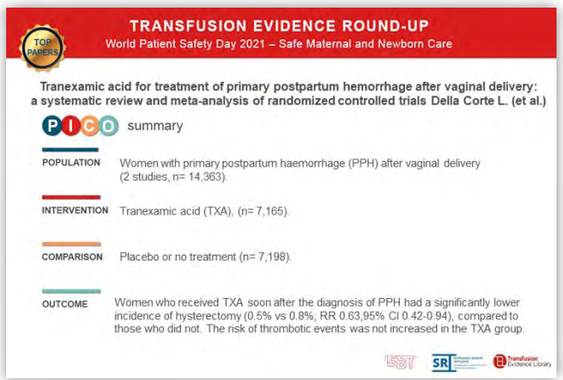
The first issue of the *Transfusion Evidence Round-Up* on the 17th September 2021, brought awareness to the **World Patient Safety Day** with this year's theme on "safe maternal and newborn care", and was well received by ISBT members and TEL subscribers.

The *Transfusion Evidence Round-Up* process begins with identification of an internationally relevant transfusion-related theme for each *Round-Up* issue. Then, the Information Specialist from the **Systematic Review Initiative** team conducts a comprehensive search of relevant systematic reviews and randomized controlled trials. The articles are screened and reviewed by the ISBT team, and a final "top 10" list of papers is selected based on criteria including scientific merit, clinical significance and interest to an international transfusion community.

The ISBT would like to invite members to participate in the selection and screening process for upcoming *Transfusion Evidence Round-Ups*. No prior experience in doing evidence round-ups or systematic reviews is necessary, but experience with reviewing abstracts, manuscripts or similar would be helpful. Members will be supported in the process by the TEL and the ISBT. Members can apply to participate via the ISBT website.

We hope this collaboration between the TEL and ISBT can keep assisting the transfusion medicine community in addressing research questions of global importance, setting research priorities, facilitating learning opportunities, and disseminating high quality research.





Satyam Arora
Postgraduate Institute of Child Health
India

Social Media: Growing tool for young professionals to connect and learn

Social media has proven to be a highly effective tool with a very high impact in various professional domains including medicine. In present times, as the physician and patient relationship is evolving, and social media provides an additional dimension of communication. This new dimension is providing several opportunities and platform for the physicians to disseminate information about latest management strategies, recent research, professional developments as well as patient education sessions. Hematology physicians have reported to find social media very useful and one of them quoted "If you can take care of transplant patients, you can easily use Twitter". In one of the papers Thompson MA et al. (2015) reported that physicians can initiate discussions, manage patient group, research collaboration, medical education, and crowdsourcing/ crowdfunding on social media.

Transfusion Medicine and blood banking professionals from around the world have also started utilizing and connecting through social media. For transfusion medicine professionals, there are four major application areas of engagement on social media:

- Raising awareness, motivating, and recruiting voluntary blood/ cell therapy donors,
- Providing information about the various blood products and their appropriate use,
- Disseminating educating on transfusion medicine and lasted research
- Connecting with the fellow clinicians and collogues

The young professional council (YPC) of ISBT realized this and started engaging with the young professionals of transfusion medicine on various platforms such as Twitter, Instagram, and Facebook, since 2019. Young professionals from this group started sharing educative and informative content a unique hashtag (#ISBTyoungblood). Since then, the council is providing social media content to the ISBT official count on latest research, resource material for various topics (including COVID-19), experience of young professionals at various levels in modern blood banking.
Presently, regular videos, research articles, COVID/pandemic perspective, personal experiences, conference (both online and offline) experiences, information on journal clubs, and latest publications are being posted. Recently other subgroups of ISBT like transfusion practitioners and education are also providing regular content for engagement on social media.

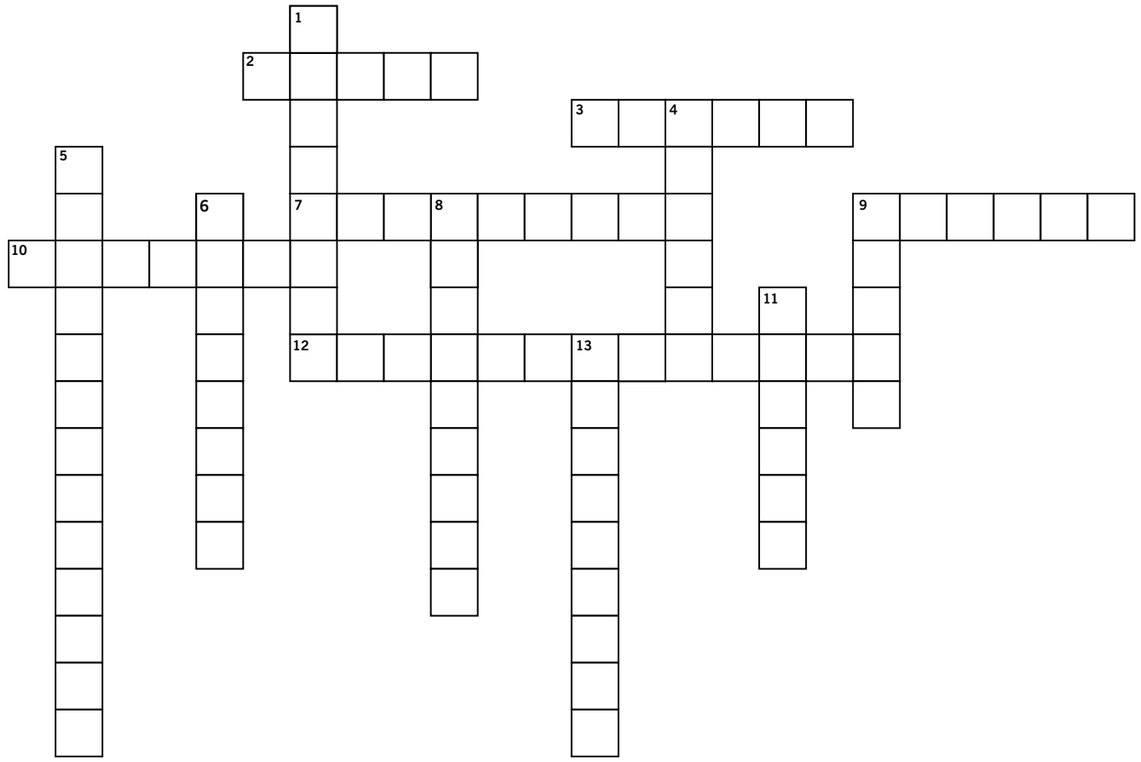
The COVID pandemic has shown unprecedented times for all of us both professionally and personally. Shortage of voluntary blood donation leading non-availability of blood products have been reported from various parts of the world. Social media engagement has played a very important role in spreading the message of shortage and that it is safe to donate blood, following COVID appropriate behavior. Similarly social media was greatly utilized to spread information about the convalescent plasma donation and research around its use. Social media is also greatly being utilized to advocate the principles of patient blood management strategies as this medium is often utilized to interact, discuss, and update the fellow clinical counterparts about the latest research on appropriate utilization of blood.

The YPC is actively participating on various platforms to create awareness and to disseminate knowledge around transfusion medicine from last few years. In case you want to get updated and be in touch with recent development in blood banking then do follow the council representative on social media:
(https://www.isbtweb.org/about-isbt/youngprofessionalscouncil)
or follow the ISBT official account on Instagram and Twitter and the hashtag #ISBTYoungBlood.

B. Abhishekh
Blood Centre, JIPMER (Jawaharlal Institute of Postgraduate Medical Education and Research) Puducherry
India

The Complement System

Test your knowledge of the Complement system with this puzzle, before peeping at the answers on the next page!



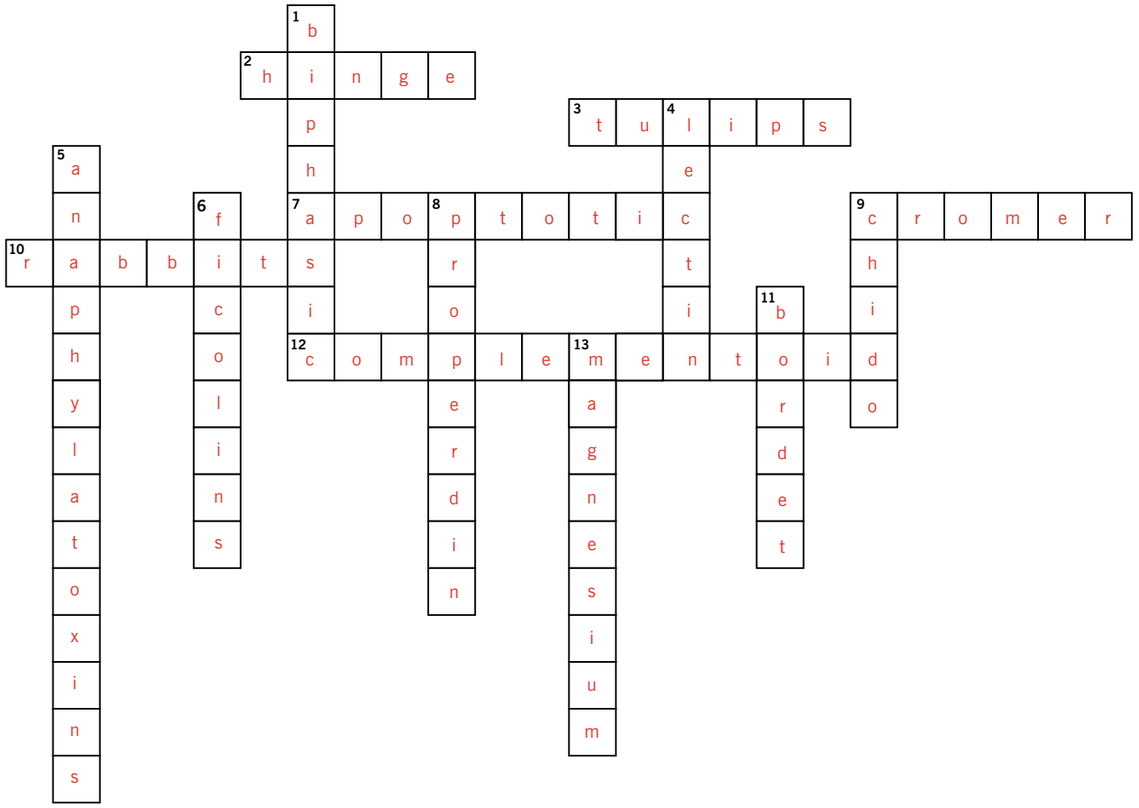
Across

2 Failure of IgG4 to bind complement is explained by its short
3 C1q is often described as having a shape like a bunch of six
7 These altered host cells are cleared by action of complement
9 Decay accelerating factor is a protein of this blood group system
10 Complement routinely used for lymphocytotoxicity tests is derived from
12 Partially damaged complement which can still bind sensitised cells but cannot cause lysis

Down

1 What type of hemolysin is anti-P
4 One of the pathways for activation of complement- also known as "antinutrient"
5 C3a, C4a, C4b are all
6 Lectins with subunits consisting of both collagen and fibrinogen like domains
8 Protein involved in stabilisation of alternative pathway
9 Partial name of a blood group whose antigens are defined by complement proteins
11 Heat inactivation of complementary activity was First described by
13 Metallic ion which has anti-complement activity

Answers to Complement Puzzle



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In Memoriam

In Memoriam – David Anstee 1946 - 2021

It is with great sadness that we note the passing of Professor David Anstee, Director of the Bristol Institute of Transfusion Science (BITS) and the International Blood Group Reference Laboratory (IBGRL), NHS Blood and Transplant. Dave had a long, brilliant and multifaceted career in transfusion medicine, including being at the forefront of research leading to understanding of the structure and function of the red cell membrane, the biochemical and molecular basis of blood groups and the potential for in-vitro culture of red cells. In recognition of this great contribution, he was the deserving recipient of many awards over the years including the ISBT Jean Julliard Prize in 1980 and ISBT Presidential Award in 2004. Dave will be greatly missed on both a professional and personal level by all at ISBT and his extensive network of friends and collaborators around the world.

Jenny White, Executive Director, ISBT

In Memoriam – Anneke Brand 1946 - 2021

Anneke Brand, Professor in Haematology and Transfusion Medicine, passed away Sunday 21 November 2021 at the age of 75. She was a pioneer in both the immunological and the clinical aspects of blood transfusion. Her research led to the universal leukocyte-reduction of all cellular blood components in many countries. She further studied transfusion related immunomodulation (TRIM), which had a beneficial effect on the outcome of kidney transplantation. In the 1970s she developed a laboratory test to select suitable blood donors for patients with HLA antibodies. She established a registry of blood donors that are homozygous for certain HLA alleles, and studied the clinical effect of HLA-matched platelets. In 2000 she was the first to be become professor of Transfusion Medicine in Leiden. As promotor and co-promotor, she supervised over 20 PhD students and co-authored more than 350 papers. She received numerous awards for her contributions to the field, including the ISBT Presidential Award in 2020 and the Landsteiner Award in 2021.
She had a tremendous scientific drive and encyclopedic up-to-date knowledge in many fields of medicine, was well-respected by her colleagues and was adored by her patients.
She will be deeply missed.

Masja DE HAAS (MD, PhD), ISBT Vice President
Department of Immunohematology Diagnostic Services, Sanquin, Amsterdam, The Netherlands
Department of Hematology, Leiden University Hospital, Leiden, The Netherlands
Cynthia SO-OSMAN (MD, PhD), ISBT Regional Director for Europe
Department of Hematology, Erasmus Medical Center, Rotterdam, The Netherlands
Dept Unit Transfusion Medicine, Sanquin Blood Supply Foundation, Amsterdam, Netherlands

Noor e Saba
Regional Blood Centre
(RBC) Peshawar,
Pakistan

World Hepatitis Day 2021: Hepatitis and Blood Safety in Pakistan

A seminar was organized by the Peshawar Regional Blood Centre in collaboration with the International Society for Blood Transfusion (ISBT) to mark World Hepatitis Day (WHD) 2021. The seminar participants included policy-makers from the provincial ministry of health, clinicians, blood bank managers, haematologists, microbiologists, and postgraduate residents.

The objectives of the seminar were to brief the participants on the World Hepatitis Day 2021 and its significance; to update the participants on the spread of hepatitis through the blood transfusion process; to shed light on the rising prevalence of hepatitis B and C in replacement blood donors; and to formulate recommendations for the government especially to stringently regulate the blood services and quality check on the use of poor quality rapid screening devices.

The WHD was observed under this year's theme, 'Hepatitis Can't Wait', with the aim of bringing the world together under a single theme to raise awareness of the global burden of viral hepatitis to influence real change and to act without any further delay to stop this manic.

The speakers of the seminar included eminent public health specialists, haematologists, microbiologists, and physicians. The speakers briefed about the global, regional, and national aspects of the hepatitis epidemic. The global strategy and response to halt and prevent the spread of hepatitis were also discussed. The speakers informed that the international effort led by the World Health Organization is supported by all the member states of the United Nations. Pakistan is also a signatory to these international commitments made in the UN General Assembly in 2015 which adopted the 2030 Agenda for Sustainable Development that called on the international community to eliminate hepatitis. These commitments were articulated in the 'Global Health Sector Strategy on Viral Hepatitis (2017-21)' presented in the World Health Assembly in 2016.

The speakers emphasized that Pakistan faces a high socioeconomic burden of infectious diseases including hepatitis. All five main types of viral hepatitis (A, B, C, D, and E) are epidemic in the country. Viral hepatitis claims nearly 150,000 lives every year being a direct cause of death or as co-morbidity and it means that over 400 people are losing life to hepatitis every day here in the country. One of the important modes of transmission of hepatitis in Pakistan is unsafe contaminated blood transfusions. Some population groups are heavily affected by hepatitis B and hepatitis C including transfusion-dependent thalassaemia patients. Preliminary data were presented on the detection of Hepatitis E and Hepatitis D among the blood donor population and their potential as emerging transfusion-transmitted infections.

The panel discussion deliberated on the fact that there are various types of screening assays available for the screening of blood. However, not all assays are suitable in all situations and each assay has its limitations that need to be understood and taken into consideration when selecting assays. In Pakistan, poor quality rapid devices are being used in most parts of the country. As a result, the multi-transfused patients in particular and other recipients in general, carry a high risk of acquiring hepatitis B and C.

Regarding the ongoing pandemic of COVID-19 and the troubles it has caused, the hepatitis crisis has become even more serious. The COVID-19 pandemic has affected hepatitis prevention, testing, treatment, and vaccination services globally including Pakistan. Hepatitis B and C are bigger killers compared to the ongoing pandemic of COVID-19.

The panel discussion provided an excellent opportunity for an interactive session where the participants engaged in a knowledgeable debate with eminent experts about hepatitis control, and prevention. A consensus was developed that a national baseline survey is imperative to confirm the actual frequency of hepatitis viruses across the country in various settings that in turn may lead to better management of the hepatitis syndrome in the country. The government should enforce policies to guarantee only quality assured screening kits are imported in the country.

The organizing team and the participants lauded the efforts of ISBT to support the event. Souvenirs and certificates were awarded to the speakers and participants respectively.

Beatrice Tingo
Northern Zone Blood Transfusion Centre (NZBTC)
Tanzania

Workshop on heamovigilance system among blood transfusing facilities

Haemovigilance is a set of surveillance procedures covering the entire transfusion chain, from the donation to patients. It includes monitoring, reporting, investigation and analysis of adverse events related to the donation, processing and transfusion of blood, and taking actions to prevent their occurrence/recurrence. The overall goal is to improve donor and patient safety. It involves staff of Blood Transfusion Services, hospital clinical and laboratory staff, hospital transfusion committees, regulatory agency and other health authorities.

This workshop aimed to train medical doctors, nurses and laboratory staff from selected transfusing facilities from Arusha, Manyara, Tanga and Kilimanjaro regions on principles and practices of Haemovigilance system. The workshop was conducted at Kilimanjaro Centre for Community Ophthalmology (KCCO) conference hall at KCMC Hospital Moshi, Kilimanjaro from 08:00 hours to 17:00 hours for two days on July 8 and 9, 2021. Teaching methodology included lecture presentations and practical sessions with interactive discussions. Finally, a WhatsApp group was formed which includes all participants and some members from Northern Zone Blood Transfusion Centre(NZBTC) in order to facilitate easy communications and sharing experience with each other as well as linking with Hematologists for consultation when needed.

Goal and objectives

1 To train Medical Doctors, Nurses and Laboratory staff on principles and practices of Haemovigilance system

Specific Objectives

1 To enable facilities to understand the general concept of Haemovigilance system, benefits and its characteristics
2 Identification, documenting, investigations and management of donor and transfusion adverse events
3 Look back program

Action plan

The following action items were agreed and that all participants will have do their best to achieve the set targets:

1 To appoint Haemovigilance focal person at each of the transfusing facilities
2 Dissemination of Haemovigilance training materials, forms, standards operating procedures and guidelines to their fellow coworkers at their facilities
3 Each transfusing facility to start a monthly submission of Haemovigilance report to Northern Zone Blood Transfusion Centre (NZBTC)

Evaluation of the workshop

At the end of the sessions, participants had the chance to evaluate the workshop. Participants were asked to assess the general performance of the workshop, training objectives, its relevancy, contents, schedule, condition of facility, facilitator's performance and methods used for facilitation. Each category was evaluated and scored on a five score marks; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree and N/A=Not Applicable. The overall performance was 5=strongly agree

Acknowledgement

Northern Zone Blood Transfusion Centre (NZBTC) would like to give special thanks to International Society of Blood Transfusion (ISBT) and its Academy for their continuing support in improving blood safety activities in Tanzania through these workshops. We would like to thank the Ministry of Health –Tanzania, the Tanzania National Blood Transfusion Service (Headquarter Office), facilitators and participants for making this possible.

Main Facilitator:

Beatrice Tingo

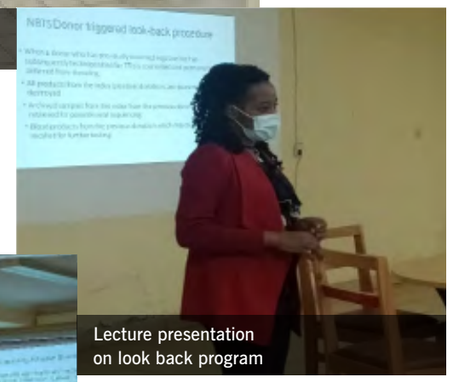
Other facilitators include:

Edson Mollel (Zonal Manager -NZBTC)
Mariam Monah (Quality System Officer-WZBTC)
SamwelMduma (Quality System Officer -EZBTC)
Joseph Kessy (Nursing Officer/Phlebotomist -NZBTC)

Lecture presentation on donor adverse events

Participants

Lecture presentation on Transfusion adverse reactions



Lecture presentation on look back program

Lecture presentation on the purpose of reporting adverse events

Academy

Emmanuel Nene Dei
National Blood Service Ghana
Ghana

Ruby Ann Sackeyfio
National Blood Service Ghana
Ghana

Social media for blood donor engagement

Background

Social media, a widely accepted marketing tool, has been proven to encourage positive blood donor behaviour and promote blood donation. Its ability to reach more people quickly makes it vital for donor education, recruitment and retention, which are vital for maintaining a regular donor base. As such, blood establishments continue to utilize social media to help retain donors.

In 2019, the National Blood Service, Ghana (NBSG) started operating a Donor Contact Centre (DCC) to foster relationships with blood donors. Its operations were hinged around maintaining effective engagements with donors, including managing queries, providing feedback, support and regular educational updates on voluntary blood donations through social media. However, the DCC does not have a substantive social media strategy under which it operates.

As social media is becoming increasingly crucial for motivating regular blood donations, the NBSG implemented a one-month social media campaign in June 2021 to encourage positive donor behaviour by educating its social media audience on blood donation issues. This article explores the extent of audience engagement with posts of the campaign.

Activities

The campaign, which was on blood and blood donation facts, was implemented as part of World Blood Donor Day celebrations. With the guidance of a posting schedule, we shared posts via the NBSG's Facebook, Twitter, Instagram and LinkedIn platforms at pre-determined days and times. Each posting consisted of an info-graph depicting a fact and accompanying words to promote voluntary blood donations. The analytics tools of each platform were used to assess user engagement with the posts.

Results

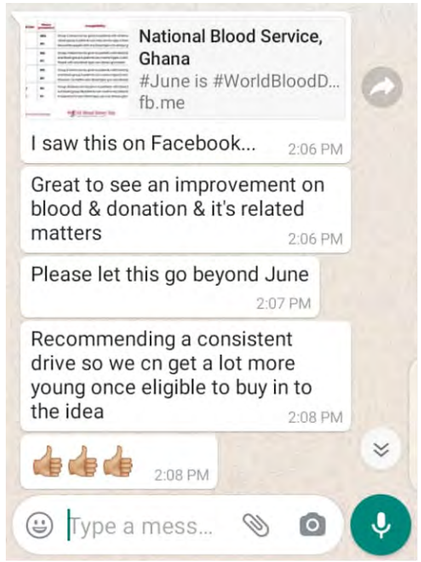
Within the period, a total of 104 posts were shared across all four platforms. We reached 5,259 users on Facebook (186% vs May) and 360 accounts on Instagram (5,900% vs May). In terms of engagement and impressions (reactions, comments, shares and clicks), we achieved a total of 4,242 content interactions (Facebook, n=778, 571% vs May; Twitter, n=2,658; LinkedIn, n=612; Instagram, n=194, 1,663% vs May). We also attained an engagement rate of 13.57% and 3.3% on LinkedIn and Twitter, respectively.

We gained 18 net followers on Facebook (200% vs May), 15 followers on Instagram and 74 on LinkedIn. In terms of user demographics, our primary Instagram audience for the month (88.9%) was within the active blood donor age range (18-54 years), which compares with our primary engaged Facebook audience within the same age range (90.0%). We also found that the most active times to post content on Instagram were 9am – 6pm, each day.

Opportunity

Analytics metrics from our assessment provided valuable insights on user interaction. Inference from the metrics depict that active social media posting presents a significant opportunity to engage potential and existing blood donors in Ghana. It also serves as a medium to keep the conversation on voluntary blood donation going while dispelling misconceptions, reducing donor anxiety and encouraging first-time donations. Ultimately, it justifies the need for the NBSG to constitute a functional social media team and implement an active social media strategy as part of its public education and donor retention efforts.

Figure 1: Screenshot of message received from a social media user recommending the continuous use social media to educate the public on blood and blood donation issues



Hela Menif
Regional Centre for Blood transfusion of Sfax (CRTS)
Tunisia

Blood donor's management during SARS-CoV-2 pandemic : A report from a Tunisian Blood Centre

The availability of blood and blood donors (BD) was a matter of concern during SARS-COv-2 pandemic. In Tunisia, the first SARS-CoV-2 case occurred at the beginning of March 2020. A strict lockdown until mid-May (with 10% of remaining daily activity) and a reduced lockdown afterward preceded the large spread of SARS-COv-2 (from September onwards).

Here we report our experience in BD management during the SARS-CoV-2 pandemic with a system based on a majority (99.5%) of indoor compensation donations (IDCD).

Total BD, age and site of donation [Indoors voluntary (IDVD) or compensation donation (IDCD) and out-doors voluntary drive donation (ODVD)] were edited by software Hematos II G3.8 (MedInfo). chi2 test was performed to compare features between 2019 and 2020. Significance level was set at 0.05.

During 2020, number of BD and IDCD have significantly dropped between 2019 and 2020, respectively from 30690 to 24153;($p<0.01$) (with a decline of 21%) and from 28610 to 22002; $p<0.01$ (-23%). On the contrary the total voluntary donations showed significant increase of 3.4% from 2080 to 2151 ($p<0.01$) The voluntary donors rate has increased among the total BD from 6,8% during 2019 to 8,9% during 2020. In fact IDVD has significantly increased from 1178 to 1614; $p<0.01$ (+37%) while ODVD has significantly decreased from 902 to 537; $p<0.01$ (-40%). During the period between March to December 2020, there was an overall decrease in the monthly blood collection of -19% (August) to -52% (April) except in June (+5%), including IDCD with less 9% (June) to -57% (April). However IDVD showed monthly increase from March (23%) to June (232%) followed by a decrease from September to reach -29% in December. The monthly collection thru ODVD showed a decrease as well, ranging from -10 to -100% except in June (+228%) compared to 2019.

In Tunisia, dynamics of DB reflected the pandemic situation as well as the government lockdown policy and recruitment of BD. As reported, we had to address new challenges, during SARS-COv-2 pandemic, leading to lockdown and generating fears among BD, not only about SARS-COv-2 but movement restrictions as well. Starting from March to April: few SARS-COv-2 cases were reported, both IDCD and ODVD dropped along with supplied blood as result to the lockdown. By Mid-march, we tried to increase voluntary BD recruitment thru a large social media communication campaign on: needs for blood, SARS-COv-2 prevention measures in blood centre and issuing of police passes for blood donors. Soon after, civil association took over recruitment & communication. From March to May, IDVD insured availability of fresh blood and platelets concentrates. During June, in conjunction with WBDD and easing of the curfew, voluntary donors significantly increased. From September onwards, after the large spread of SARS-COv-2, and the end of strict lockdown, IDCD increased and IDVD were no more recruited.

During SARS-CoV-2 pandemic in Tunisia, compensation donors seemed to be less motivated during the lockdown that during the outbreak itself. During lockdown, easily motivated voluntary BD remained the gold standard to insure blood safety & availability with adequate communication and appropriate venue. This was the lesson learned to switch from compensation to volunteer BD. And this is what we have to work on in the future.

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Blood transfusion services in Afghanistan during the humanitarian crisis

With a population of over 38 million, Afghanistan is a landlocked multiethnic country lying along the legendary 'Silk Road' at the junction of south and central Asia. It borders Pakistan, Iran, China, Tajikistan, Turkmenistan, and Uzbekistan. For the last four decades, Afghanistan has suffered the catastrophic effects of civil war and the ensuing conflicts and humanitarian crisis.
Over the years, the characteristics of conflicts have become more complex, rendering prevention and response further difficult, thus, backsliding the national development targets set to accomplish the Sustainable Development Goals (SDGs).

The safety and availability of blood and blood components is a great concern for the Afghan population with an ongoing humanitarian crisis where the public health system has been destabilized. As a result, the blood management in such emergencies is patchy and inadequate lacking coordinated response. The staff is less in number and those available lack capacity to cope with the crisis situation. Over 10 million Afghan people are internally displaced. The refugees have been accommodated in temporary camps with insufficient healthcare facilities and burden the existing local healthcare especially posing risks to safe motherhood. The transfusion needs in such situations generally remain neglected and unmet.[1]

Until 2008, there was no national counterpart to tackle blood safety and availability issues in Afghanistan. The Ministry of Public Health, in early 2009, established a Blood Safety Advisory Group which led to the formation of the Afghanistan National Blood Safety and Transfusion Service (ANBSTS). The ANBSTS is steered by a Task Force comprising of individuals from the Ministries of Public Health, Defense, Interior, Environment, along with private and NGO sector organizations involved in blood banking and transfusion services. In the year 2020, ANBSTS collected 223,565 blood donations from 284 blood banks across the country. This is a considerable increase compared to the year 2015 when the number of donations was 64,126.

The ANBSTS, which serves as the nerve centre of Afghanistan's unified strategy to ensure the safe and timely provision of blood, is facing grave challenges during ongoing humanitarian emergencies. In addition to the political instability, it consists of a fragmented blood transfusion service, lack of adequate budget, standards, guidelines, trained manpower, equipment maintenance, consumables/kits unavailability, inadequate infrastructure, and lack of blood donors, especially negative groups. In fact, it is not the actual shortage of blood but a disruption of the delivery system and an articulated coordinated mechanism to manage the situation, similar to what is reported from earlier experiences elsewhere.[2]

The national narrative of Afghanistan's government, the ANBSTS Blood Policy (2012-2015) does not adequately address the issue of blood management in humanitarian crisis. The only statement mentioned in the policy states that in case of emergency and disaster situations, agreements need to be made with the blood banks of neighboring countries.[3] This may not be an all-inclusive approach, nevertheless, the ANBSTS has planned to develop linkages with bordering countries, e.g. the Iranian Blood Transfusion Organization (IBTO) in Iran, and the Peshawar Regional Blood Centre in Pakistan which is only 45 kilometers to the Afghan border.

It is very vital to sensitize and advocate both health ministry and blood bank staff to their roles and responsibilities in emergencies, taking into account priorities, needs, and the local capacity for immediate response.

The ANBSTS requires support from international partners including the WHO, other relevant UN agencies, and the ISBT, in formulating an overarching national strategy backed by a regulatory framework for the challenges posed to the blood transfusion services. Even though there are armed conflicts and emergencies faced by the country, the ANBSTS team is committed to continuing working for the public's health and safety.

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Blood Shortages Planning in Canada

In Canada, blood is considered a national resource collected from volunteer blood donors. The preparation for and management of a national blood shortage involves three key groups: Canadian Blood Services, as the largest blood operator serving all provinces and territories (except Quebec), which collects, tests and supplies blood components and distributes plasma protein products to hospitals; the Provincial/Territorial (P/T) Ministries of Health, who fund the universal healthcare and blood system; and the National Advisory Committee on Blood and Blood Products (NAC), as a standing interprovincial technical committee that serves as an advisory body to both Canadian Blood Services and the P/T Ministries of Health.

The Plan

The Canadian National Plan for Shortages of Labile Blood Components (the Plan)[1] developed by the NAC provides a framework for managing local, jurisdictional, and national blood inventory constraints. All jurisdictions have a responsibility to review the Plan and ensure the existence of local blood contingency plans, which are complimentary and congruent with national guidance, for use in the event of a blood shortage. The local and national plans are based on specific blood inventory phases, detailed in the table below.

The Emergency Framework for Rationing of Blood for Massively Bleeding Patients during a Red Phase Blood Shortage[1] is available as a supplement to the Plan and includes ethical considerations and guidance for blood triaging in the event of a critical blood shortage.

Inventory phase declarations as defined by the Plan

Phase	Description
Green	Normal blood component inventory levels exist and supply general meets demand;
Green Advisory	Persistent limited blood component supply which may serve as a warning of imminent shortage risk, prompting review of hospital inventory levels and enhanced national visibility of hospital inventory, serving as a signal for hospitals and provinces to implement any potential conservation strategies to help avoid a shortage;
Amber	National blood inventory is insufficient to continue with routine transfusion practices and implementation of specific measures are required to reduce blood usage;
Red	Blood inventory levels are insufficient to ensure patients with non-elective indications will receive transfusion
Recovery	Blood component inventories have begun to increase and are expected to be maintained at a level which would enable gradual return to Green Phase.

The National Emergency Blood Management Committee

The Plan details the structure and mandate of the National Emergency Blood Management Committee (NEBMC). The NEBMC, which is comprised of NAC members, P/T government officials, and leaders from Canadian Blood Services, is convened during impending or actual shortage of blood components or plasma protein products. The NEBMC can declare a blood shortage phase advisory applicable to any blood component (ex. platelets) and/or specific blood groups (ex. O-negative red blood cells) and provides specific guidance to provincial jurisdictions with the goal of mitigating the shortage. Blood shortage phase communications are disseminated broadly and posted online.[2]

National Inventory Tracking

Inventory reports including both Canadian Blood Services' and hospital inventories are generated to assess inventory across our national blood system. In addition to daily summaries of available supply within its distribution sites, Canadian Blood Services has created an online portal to enable regular hospital inventory reporting of available red blood cells (by ABO/Rh blood group), platelets and intravenous immune globulin (IVIG). Hospitals are asked to report inventory weekly during Green Phase (baseline levels). During blood shortage advisory declarations, daily reporting is required to determine blood system supply availability and the risk of patient impact.

COVID-19 and Canadian Blood Supply[3]

Shortly after the declaration of the COVID-19 pandemic, the NEBMC was convened due to concerns regarding sufficient blood supply following a 20% decrease in donor attendance. Media messaging reaffirmed blood donation sites as places of wellness and donors responded to this call. As detailed in the figure, in April-May 2020, there was an unexpected, profound decrease in hospital demand which led to excessive red blood cell outdates within the blood system (5-times baseline values). Active dialogue at NEBMC meetings helped inform Canadian Blood Services' collections planning, which ultimately led to blood system inventory stabilization into autumn 2020.

In parallel, the NEBMC was acutely aware of ongoing global IVIG inventory constraints. At the request of the NEBMC, the National Plan for Management of Shortages of Immunoglobulin Products - Interim Guidance was developed and published in September 2020 to help guide IVIG utilization in the setting of potential future shortages.[1]

In July 2021, a brief Green Advisory Phase was declared for O-negative red blood cells attributable to decreased donor attendance and increased blood demand by hospitals. After 4 weeks of enhanced donor communications and improved attendance, the blood system inventory stabilized. Continuous monitoring of our blood system inventories remains an essential asset in ensuring an adequate supply in hospitals to reduce the risk of any patient care impacts.

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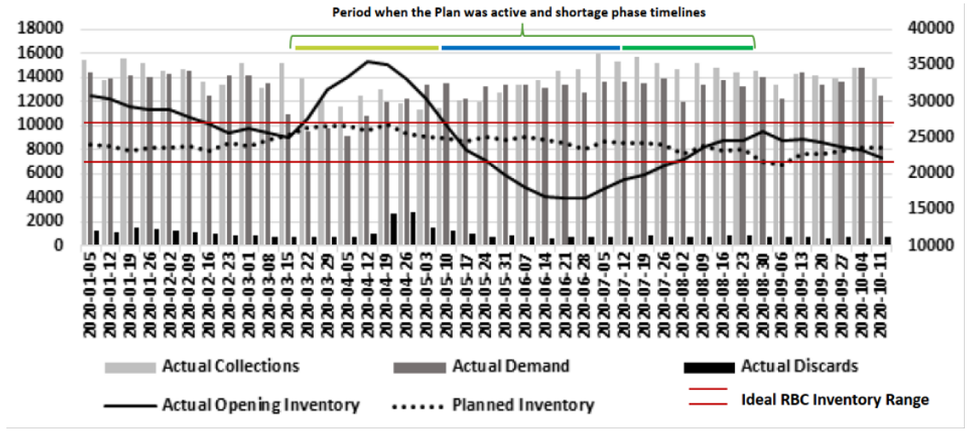
Canadian Blood Services Red Blood Cell Inventory Patterns in the initial months of the COVID-19 pandemic: January-October 2020
The number of actual total red blood cell (RBC) units collected, discarded onsite, and issued to hospitals (demand) from Canadian Blood Services is depicted by the bars (y-axis left). The solid and dotted lines represent actual and planned total number of RBC units in inventory (y-axis right). The red lines show the ideal RBC inventory range within Canadian Blood Services inventory (22,000-27,000 RBC units at week open). Coloured lines at the top denote the inventory phases declared while the Plan was activated, beginning with Green Phase Advisory, progressing to Recovery Phase, followed by a return to normal Green Phase.
Figure originally published in Transfusion: 2021;1-9. Reproduced with permission, including minor modifications.



Are you aware of **the continuing risk** of septic transfusion reactions?

~1/1.900 platelet concentrates are bacterially contaminated[1].

Of those, **25 - 43%** will cause a septic transfusion reaction in the patient[2].

Of those, **13 - 23%** will be fatal for the patient[3].

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1. Mean bacterial contamination rates differs by production method: buffy coat=1/893; apheresis=1/4.348; platelet rich plasma= 1/2.632. (SK White et al; Transfusion 2020;60;986–996)
2. 25-43 % of bacterial contaminated platelet concentrates will cause a septic transfusion reaction in the patient. (HX Hong et al; Blood 2016;127, 380-381 | MR Jacobs et al; Clin Infect Dis. 2008;15;46(8):1214-20)
3. 13-23 % of those confirmed septic transfusion reactions will be fatal for the patient. (AF Eder et al; Transfusion 2007 Jul;47(7):1134-42 | PEI Hemovigilance Report 1997-2008 | SHOT-report 2007; cumulative data 1996-2007)
4. AM Fillet et al; Transfusion 2016;56(12):3033-3041 | PL Fedele et al; Transfusion 2016; 56: 2455-2465