

Africa Sanguine

ISSN 1560-8646

June 2018

Volume 19, Number 2



CONTENTS	PRODUCTION TEAM
<p>Editorial</p> <ul style="list-style-type: none">Adewuyi B..... 1 <p>Scientific Articles</p> <ul style="list-style-type: none">Partnership for safe blood in Mali: an implementation evaluation..... 4 <i>Goldberg A, Gwathmey L, Zacharias PJK, Hoglund L</i>Survey of facilities for appropriate training in blood transfusion in Anglophone West Africa..... 12 <i>Adewuyi JO, Saliu Idris A, Dada-Joel Arinola</i>Key amulets: A cultural clinical sign of epistaxis..... 18 <i>Barrett CL, Webb MJ, Malherbe J, du Plooy S</i> <p>Congress</p> <ul style="list-style-type: none">8th International Blood Transfusion Congress: Kigali, Rwanda 2016 <i>Selected abstracts from the Congress in English and French..... 22</i> <p>General Information</p> <ul style="list-style-type: none">Overview: Step-Wise Accreditation Programme..... 46 <i>Tagny C</i>Global Blood Fund..... 48AABB information..... 48Contribution guidelines – instructions to authors..... 50Membership forms..... 55	<p>Editor-in-Chief Banji Adewuyi</p> <p>French Editor Claude Tayou Tagny</p> <p>Production Editor Leesha Raman</p> <p><i>Supported by an international group of experts to peer review original papers</i></p> <p> creative commons</p> <p>Copyright resides with the authors in terms of the Creative Commons Attribution 4.0 International License Condition of use: The user may copy, distribute, transmit and adapt the work, but must recognize the authors and <i>Africa Sanguine</i>.</p> <p> AJOL AFRICAN JOURNALS ONLINE</p> <p> OPEN ACCESS</p>



Our solutions for blood processing, therapeutic apheresis and cell collection.



Collection

- Blood bags.
- Compoguard: combining safety with efficiency in whole blood donation.
- CompoSeal Mobilea II: reliable technology for portable and safe sealing.
- Etc.



Manual Blood Processing

- CompoSeal Universal: tube sealing system.
- Compodock: sterile PVC tube connections in just two steps.
- Compomat G5: the new generation of automated blood component separators
- Etc.



Therapeutic Apheresis

- Com.Tec: therapeutic apheresis and cell collection.
- Amicus: cell separator.



Donor Apheresis

- AmiCORE: a new level of platelet collection.
- Aurora: plasmapheresis separator.

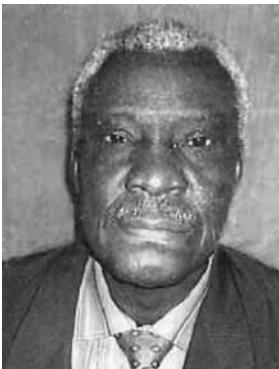
For more information :

www.fresenius-kabi.com



**FRESENIUS
KABI**
caring for life

EDITORIAL



Banji Adewuyi
Outgoing Editor-in-Chief



AfSBT @ 21

After some period of consultations among some African blood transfusion practitioners, the AfSBT was inaugurated in 1997, at an AIDS Conference in Abidjan. That was 21 years ago, and *Africa Sanguine* is glad to celebrate, in this edition, a Society that has truly come of age. The Society has come a long way in fulfilling its objectives. It has served as a forum for bringing together blood transfusion practitioners, both from within and outside the continent, for exchange of information and ideas. Continental biennial Congresses have been held all over Africa, often in collaboration with some related local organizations. Some of the six geopolitical Regions into which the Society has been divided for wider local impact, have also held regional conferences. Through these rotational congresses, greater awareness has been generated about blood transfusion, and that agenda has been brought closer to the front burner in many African countries. Indeed the Society has become the authoritative voice of blood transfusion on the continent. The existence of AfSBT was further formalized in 2011 by registration as a not-for-profit organization in Johannesburg, South Africa.

Step-Wise accreditation of blood services

One of the major achievements of AfSBT is the creation of what is called the 'stepwise accreditation programme' which is unique and tailor-made for Africa. Many national blood services in Africa are still developing, and cannot be expected to attain so quickly, full accreditation status by international standard of blood transfusion practice. The AfSBT therefore drew up minimum standards of practice at three levels, 1,2 and 3, the 3 being the peak or full accreditation. Blood services which desire to be assessed at a particular level may request for assessment, success at which will indicate, at least, some progress. Two national blood services have so far been assessed, and granted level 3 accreditation, while some 20 others have applied for assessment and are at various stages of preparation. For now, assessment is done in collaboration with one of our partners, the AABB, while the Society is in the process of training its own assessors, with a view to AfSBT attaining the status of a full accreditation agency in the near future.

Africa Sanguine

Publication of *Africa Sanguine*, the official scientific journal of the AfSBT is another major achievement of the Society. Since shortly after the inception of AfSBT, *Africa Sanguine* has been published, without a break, in one volume of two editions every year, this edition being the second of volume 19. Since volume 17 of the journal, *Africa Sanguine* has been accepted for indexing by the Africa-Journals-on-Line, AJOL. *Africa Sanguine* wishes to use this medium to salute our founding fathers, (and mothers!) all of who, by God's grace are still with us today, and many still in the saddle of the organization. Particular recognition is due to the pioneer Editor-in-Chief, the indefatigable Beryl Armstrong from whom I took over five volumes of the journal ago.

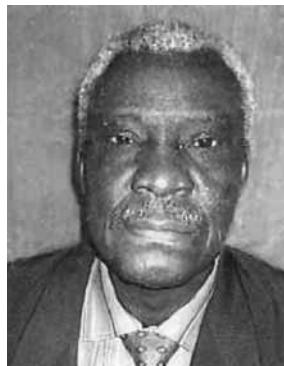
Development and funding partners

The achievements of AfSBT could not have happened without the support of our many technical and donor partners. The AABB has given technical support particularly in the evolution of our stepwise accreditation programme, and in the provision of technical manuals. The ISBT has always supported our congresses with an opening 'academy day' of state-of-the-art presentations. The CDC of USA has been a major sponsor of speakers and delegates to our congresses, and of special workshops. The NBI of South Africa has, singlehandedly sponsored the production and distribution of our journal from inception, till date. Other partners in progress include the IDTM (Gronigen), Global Blood Fund, WHO-Afro, and ASLM. Equipment companies, too numerous to list, have supported our congresses with exhibitions paid for, and speakers sponsored for special sessions. Government agencies of hosting countries have also, often lent a helping hand in the success of our congresses. *Africa Sanguine* says THANK YOU to all of our partners, listed and unlisted.

Adieu

This year 2018 is a landmark in another way. At this year's Arusha Tanzania congress, the baton will change hands at the head of *Africa Sanguine*. As I bow out after overseeing the journal through five volumes, (15-19) I welcome my successor, Dr. Claire Armour Barrett of South Africa as the new Editor-in-Chief, and wish her well. I also wish to thank all those who have assisted to make my tenure the huge success it has been. These include, but not limited to the Editors and Reviewers on the outgoing Editorial Board, the article contributors, the production team at SANBS and NBI, the indexing outfit AJOL, and the Management of the Society. Long live the *Africa Sanguine*, long live the AfSBT.

Éditorial



Banji Adewuyi
Rédacteur en Chef sortant

SATS @ 21

Après une période de consultations entre certains praticiens africains de la transfusion sanguine, la SATS a été créée en 1997 à Abidjan lors d'une conférence sur le SIDA. C'était il y a 21 ans, et *Africa Sanguine* est heureuse de célébrer, dans cette édition, une Société qui a vraiment atteint sa maturité. La Société a parcouru un long chemin pour la réalisation de ses objectifs. Elle a servi de plateforme pour le rassemblement des praticiens de la transfusion sanguine, à l'intérieur et à l'extérieur du continent, pour échanger des informations et des idées. Des congrès biennaux continentaux ont eu lieu partout en Afrique, souvent en collaboration avec des organisations locales connexes. Certaines des six régions géopolitiques en lesquelles la Société a été divisée pour un impact local plus large ont également tenu des conférences régionales. Grâce à ces congrès rotatifs, une plus grande sensibilisation sur la transfusion sanguine a été faite, et ce programme a gagné en importance dans de nombreux pays africains. En effet, la Société est devenue la voix faisant autorité de la transfusion sanguine sur le continent. L'existence de la SATS a été formalisée en 2011 par son enregistrement en tant qu'organisation à but non lucratif à Johannesburg, en Afrique du Sud.

Accréditation par étapes des services de sang

L'une des réalisations majeures de la SATS est la création de ce qu'on appelle le "programme d'accréditation par étapes", unique et conçu sur mesure pour l'Afrique. De nombreux services nationaux de transfusion sanguine en Afrique sont encore en train de se développer, et l'on ne peut s'attendre à ce qu'ils obtiennent un statut d'accréditation aussi rapide, selon les normes internationales en matière de transfusion sanguine. La SATS a donc établi des normes minimales de pratique à trois niveaux, 1, 2 et 3, le niveau 3 étant l'accréditation. Les services de transfusion sanguine qui désirent être évalués à un niveau particulier peuvent demander une évaluation, dont l'issue indiquera au moins quelques progrès. Deux services de transfusion sanguine ont déjà été évalués et ont reçu une accréditation de niveau 3, tandis qu'une vingtaine d'autres ont soumis une demande d'évaluation et sont à divers stades de préparation. Pour le moment, l'évaluation est faite en collaboration avec l'un de nos partenaires, l'AABB, alors que la Société est en train de former ses propres évaluateurs, en vue de l'obtention d'un statut d'agence d'accréditation complète dans un proche avenir.

Africa Sanguine

La publication d'*Africa Sanguine*, la revue scientifique officielle de la SATS est une autre réalisation majeure de la Société. Depuis peu après la création de la SATS, *Africa Sanguine* a été publié, sans interruption, en un volume de deux éditions chaque année, cette édition étant la deuxième du volume 19. Depuis le volume 17 de la revue, *Africa Sanguine* a été acceptée pour indexation par Africa-Journals-on-Line, AJOL. *Africa Sanguine* souhaite utiliser ce médium pour saluer nos pères fondateurs (et mères!) qui, par la grâce de Dieu, sont toujours avec nous aujourd'hui, et beaucoup encore en sein de l'organisation. Une reconnaissance particulière est due à la pionnière Rédactrice-en chef, l'infatigable Beryl Armstrong à qui j'ai repris le flambeau pour produire cinq volumes du journal.

Partenariat au développement et au financement

Les réalisations de la SATS n'auraient pas été possibles sans le soutien de nos nombreux partenaires techniques et bailleurs de fond. L'AABB a apporté un soutien technique en particulier dans l'évolution de notre programme d'accréditation par étapes et dans la fourniture de manuels techniques. L'ISBT a toujours soutenu nos congrès avec une «journée académique» d'ouverture de présentations à la pointe de la technologie. Le CDC des Etats-Unis a été un sponsor majeur des conférenciers et des délégués à nos congrès et ateliers spéciaux. Le NBI de l'Afrique du Sud a, à lui seul, sponsorisé la production et la distribution de notre journal depuis sa création jusqu'à aujourd'hui. Les autres partenaires en cours comprennent l'IDTM (Groningen), le Global Blood Fund, l'OMS-Afro et l'ASLM. Les fournisseurs en équipement, trop nombreux pour être listés, ont soutenu nos congrès avec des expositions payées, et des conférenciers sponsorisés pour des sessions spéciales. Les agences gouvernementales des pays d'accueil ont aussi souvent prêté main forte au succès de nos congrès. *Africa Sanguine* dit MERCI à tous nos partenaires, inscrits et non-inscrits.

Adieu

Cette année 2018 est un repère d'un autre genre. Au congrès de cette année à Arusha en Tanzanie, le témoin changera de mains à la tête d'*Africa Sanguine*. Alors que je m'écarte après avoir supervisé le journal à travers cinq volumes (15-19), je souhaite la bienvenue à mon successeur, le Dr. Claire Armour Barrett d'Afrique du Sud, en tant que nouvelle Rédactrice en Chef, et lui souhaite bonne chance. Je tiens également à remercier tous ceux qui ont contribué à faire de mon mandat l'énorme succès qu'il a connu. Ceux-ci comprennent, mais sans s'y limiter, les éditeurs et relecteurs du comité de rédaction sortant, les contributeurs de l'article, l'équipe de production de la SANBS et du NBI, la société d'indexation AJOL et la direction de la Société. Vive *Africa Sanguine*, vive la SATS.



GRIFOLS

Procleix Panther system
SMART • SIMPLE • VERSATILE



Meeting tomorrow's challenge in integrated
laboratory information system management

ILEX, YOUR PARTNER FOR NAT LABORATORIES

ilex South Africa (PTY). Ltd:
+27 (0)11 804 4004 | mail@ilex.co.za | www.ilex.co.za

ilex C.R.O Ethiopia:
+25 111 5622 293 | AdinoD@ilexmedical.com | www.ilexmedical.com



SCIENTIFIC ARTICLES



Partnership for safe blood in Mali: an implementation evaluation

Partenariat pour du sang sur au Mali: evaluation d'un projet de mise en oeuvre

Goldberg A¹, Gwathmey L², Zacharias PJK³, Hoglund L⁴

1. Leader US-Advocacy and Professional Affairs, Merck & Co., Inc., USA (now retired)
2. Director of Global Health Programs, Physicians for Peace, 500 E Main Street, Suite 900, Norfolk, VA 23510 (now retired)
3. Chief Operations Officer, Safe Blood for Africa Foundation™ (SBFA), 4 de la Rey Road, Rivonia, South Africa, 2128
4. Director of Monitoring, Evaluation, and Organizational Learning, Physicians for Peace, 500 E Main Street, Suite 900, Norfolk, VA 23510 (now retired)

Correspondence

Leslie Hoglund
Email: Leslie.Hoglund@vdh.virginia.gov

Running Title

Partnership for safe blood in Mali

Key words

*blood bank, blood safety, blood services,
blood policy, Mali, political strife,
healthcare systems strengthening*

ABSTRACT

Introduction

A readily available and a safe blood supply is a great need in Sub-Saharan Africa. The Ministry of Health Mali's Blood Supply Policy requires Blood Centres in remote areas beyond the capital Bamako. With limited resources for creating blood centres, the task requires solid, committed partnerships.

Aim

Physicians for Peace with the Safe Blood for Africa Foundation™, along with the American National Red Cross and *Hôpital Nianankoro Fomba* (HNF) in Ségou, united with the aim of developing a blood bank and testing centre.

Methods

The planning and implementation of this project occurred over five years and data collection began in 2012.

Results

Evaluation of this project revealed in 2012, 9% donors were volunteers vs. 23% in 2013. Safe blood is now available, however, supply does not match requests. In 2012, there was a shortfall of 644 units and 747 in 2013. Discarded blood accounted for 20% loss (2012) and 26% (2013). Transfusion-Transmissible Infections accounted for the majority of losses; e.g. HepB accounted for 50% in 2013.

Discussion and Conclusion

Many factors aid in on-going challenges related to sustaining the blood centre. The nature of working across multiple cultures and geographic areas, requiring clearly defined partner roles, and financial constraints cause strain on the timing and delivery of project goals. The partnership developed the Ségou region's first blood centre at HNF, with trained staff and an equipped facility, serving a community who previously had limited access to Safe Blood. Recommendations and next steps are made to promote sustainability of blood services in Mali.

RÉSUMÉ

Introduction

Le besoin en approvisionnement en sang disponible et sûr est grand en Afrique subsaharienne. La politique d'approvisionnement en sang du Ministère de la santé du Mali exige des centres de transfusion dans les zones reculées au-delà de la capitale Bamako. Compte tenu des ressources limitées à la création des centres de transfusion sanguine, la tâche exige des partenariats solides et engagés.

Objectif

Les Physicians for Peace, the Safe Blood for Africa Foundation™, the American National Red Cross et l'Hôpital *Nianankoro Fomba* (HNF) à Ségou, se sont unis pour développer une banque de sang et un centre de dépistage.

Méthodes

La planification et la mise en œuvre de ce projet ont eu lieu sur cinq ans et la collecte de données a débuté en 2012.

Résultats

L'évaluation de ce projet a révélé qu'en 2012, 9% des donneurs étaient des bénévoles contre 23% en 2013. Le sang sûr est maintenant disponible, mais l'offre ne correspond pas à la demande. En 2012, il y a eu un déficit de 644 unités et de 747 en 2013. Les pertes de sang ont représenté 20% (2012) et 26% (2013). Les infections transmissibles par la transfusion représentent la majorité des pertes; par exemple l'HepB représentait 50% en 2013.

Discussion et Conclusion

De nombreux facteurs contribuent aux défis continus liés au maintien du centre de transfusion sanguine. La nature du travail au sein de plusieurs cultures et zones géographiques, exigeant des rôles de partenaires clairement définis, et des contraintes financières mettent à rude épreuve le calendrier et la réalisation des objectifs du projet. Le partenariat a développé le premier centre de transfusion de la région de Ségou à HNF, avec un personnel formé et un établissement équipé, servant une communauté qui avait auparavant un accès limité au sang sûr. Des recommandations et les prochaines étapes sont faites pour promouvoir la pérennité des services de transfusion sanguine au Mali.

INTRODUCTION

Globally more than a billion people live in need of safe blood, which is a foundational resource for adequate healthcare as few Health System Strengthening (HSS) initiatives **DO NOT** make the assumption that adequate **SAFE** blood is available. McCullough and McCullough¹ report that about 80% of the world's population has access to only 20% of the world's blood supply. Fortunately, albeit inadequate, resources exist to combat the lack of safe blood in the developing world and an increasing number of international actors have dedicated themselves to such efforts. There is a growing action and collaboration among Ministries of Health (MOH), international blood safety organizations, international non-governmental organizations (NGOs), hospital leadership, and others to achieve shared goals due to limited funding. Additionally, such partnership allows for more efficient use of funding and resources, and greater specialization of each partner. It also requires a strong commitment to collaborate with clear definition of partner roles, while melding cultures and motivations unique to each country.

An implementation evaluation of partnerships that were formed to realize a blood donation and collection service at Hôpital Nianankoro Fomba (HNF), in Ségou, Mali will be discussed. It is critical to understand the current status of blood safety in Mali and the need for implementing and strengthening blood programs in developing countries to ensure safe blood for all. The process of developing a blood bank has inherent challenges, yet through technical assistance and partnerships, successes were achieved. Improving blood availability leads to necessary next steps and an urgent call to action¹.

Centre National de Transfusion Sanguine (CNTS) is the entity in Mali within the Ministry of Health charged with the responsibility of overseeing all blood safety activities throughout the country. In addressing this role, CNTS has developed a National Blood Transfusion Policy² with the vision that each of the health regions will develop the capability to function autonomously. The policy promotes partners working synchronously as part of an integrated system — the goal of which is to have a readily available and safe blood supply. This vision, in accordance with the World Health Organization³ recommendations, has yet to be realized for a range of reasons, including insufficient expertise and resourcing.

Currently, the only fully functioning blood bank in Mali is located in the national capital, where there is easier access for a safe blood supply with the necessary safety and testing regimes that serves Bamako and its immediate surrounds. With few exceptions the rest of the country has inadequate access. In some of the larger communities, even as blood services are scarce, testing of donated blood is performed at a rudimentary level using rapid diagnostic tests. Blood donation practices are considered high risk due to a lack of application standards for screening donors and testing blood; this places recipients of donated blood at risk of infection for life-threatening diseases. Oftentimes, the lack of a dependable blood supply means that donations are "just in time" and transfusions are often performed from one person directly to another, known as 'vein to vein' or 'family replacement' transfusion. A safe and dependable blood supply would allow for avoiding many transfusion-related complications⁴, adverse reactions and infections. Much of the current blood donor system in Mali is an informal one, consisting of family replacement donors and those paid by the family (mostly clandestinely) to donate when family members cannot. While corroborated data are difficult to obtain, of the reported national pool of collections, only about 20% are from repeat voluntary non-remunerated blood donors (VNRBD) who are recognized as the safest donor pool⁵.

The majority of these donors are in the capital region, where CNTS regularly accepts blood donations². In 2006, Mali estimated it would need to collect 150,000 units of whole blood each year to meet the WHO's recommended figure of 1% of the population donating a unit of blood. In 2010, only about 48,500 units of whole blood were collected and of these, only 1,331 units were collected in Ségou². The majority (80%) of the units collected in Mali were from family replacement donors⁶.

In areas where there is no system for procuring, testing, storage and distribution of blood, its availability is unreliable. In these areas, a system for recruiting VNRBDs is lacking. Even in Bamako, the cold chain is not managed by the CNTS but rather by family members who collect the blood and carry it, often without any refrigeration, to the family member. When patients need blood, they often receive it through direct transfusion from a family member or person paid to pose as a family member. Lucky patients will be in a hospital that has a unit or two of blood, but those cases are rare. Sometimes in cases where family members are not present or are unsuitable donors, they will find and pay individuals to donate blood.

In outlying areas, non-family donors are typically procured through institutions located near hospitals. Military installations and factories are continuously bombarded with emergency requests for blood donations but these donors often demand large sums for their blood. As is the case elsewhere in Africa, the financial burden imposed on desperate relatives by paid donation is also frequently disproportionate to their means, placing highly vulnerable persons in an untenable situation. Unfortunately, these types of commercial donors also carry higher risks of transmitting infectious diseases, especially in populations with high rates of HIV, Hepatitis B and C. Remunerated donors and blood donor recruiters, who may not have standardized stringent donor screening criteria that would exclude high risk blood donors, conspire to create a situation that is unfavourable for the safety of the blood collected^{3,7}.

Despite this, because it has no substitute, safe blood is critical to a fully-functioning health system. Furthermore, most health systems strengthening initiatives, such as those addressing HIV, obstetric health, malaria-induced anaemia in children, any surgical procedures, etc., assume there are adequate reliable supplies of safe blood – this is a failed assumption in most of sub-Saharan Africa (SSA)⁵. All robust health care systems include a component of readily available, screened and processed blood. Yet the need for safe blood in Mali remains great, as it is an irreplaceable component of maternal care, treatment of blood disorders, and trauma care.

While Mali does not record specific statistics regarding complications of maternity care, we can extrapolate Mali's situation through external analyses. In Africa alone, 34% of maternal deaths can be attributed to obstetric haemorrhage, making it the leading cause of maternal death on the continent⁸. A study of maternal mortality rates in Mali from 1990–2008 estimated the maternal mortality rate for 2008 was at 669 per 100,000 live births, ranking 166 of 181 countries⁹. While the rate did decrease by 1.2% annually over that time, there remains tremendous room for improvement. Sadly, this rate is fairly consistent with the rest of SSA, which has an overall maternal mortality rate of 640 per 100,000 per live births, with an annual decline of 1.7%¹⁰. Indeed, a meta-analysis of 37 studies on haemorrhage and maternal mortality noted a direct link between maternal death and lack of blood services.

Of those, five provided quantitative information showing that overall, 26% (16-72%) of maternal haemorrhage deaths were due to lack of safe blood¹¹. In Ségou specifically, the young population (64% under the age of 25 in 2009) lends itself to a high birth rate. Over 5,000 births are expected annually in Ségou; the crude birth rate remains at 41.6 births for every 1,000 people. On average, a woman in Ségou can expect to give birth to 5.8 children over the course of her reproductive years¹².

In addition to meeting the needs for safe childbirth, we know that access to safe blood provides a host of other services to the population. Anaemia is common in Mali, and typically results from malnutrition (particularly iron-deficiency) or severe malaria affecting children under five mostly. According to Mali's Ministry of Health², 40% of women and children are diagnosed with anaemia each year. Sickle cell anaemia is also more common among Sub-Saharan Africans, where the frequency of this genetic trait is estimated to be 15-30%^{5, 13}. While scientists note the sickle-cell trait confers some resistance to malaria in early childhood, anaemia due to malaria accounts for approximately 70% of all blood transfusions given to children in SSA^{3, 5, 13}. Indeed, in Mali alone, malaria accounts for over 17% of childhood deaths¹⁴.

METHODS

In 2007, as the evidence for the need for a blood centre in Ségou mounted, various stakeholders began to discuss opportunities to meet the need. The relationship between key implementing partners Physicians for Peace (PFP) and the Millennium Villages Project/Millennium Cities Initiative (MVP/MCI) began with an introduction by Professor Jeffrey Sachs. The mission of MVP/MCI, the incubators at the Earth Institute of Columbia University, is to apply appropriate funding and resources to under-resourced areas of the world to demonstrate that the Millennium Development Goals are achievable. With 15 villages and 11 cities throughout Africa, the sites were, at that time, just a few years along in their development. PFP is a 27 year-old, non-profit medical education and training organization, dedicated to transforming lives through training, supporting, and empowering local health professionals working with the world's underserved populations.

With the new partnership, PFP conducted a fact finding visit in 2008 to Mali to determine its potential for a new project site. PFP representatives met with Ambassadors, Ministers of Health, and community health workers, visiting health facilities in Bamako and Ségou, both Millennium Cities, and Markala, a smaller city in the Ségou region. Markala, home to a referral hospital, has technical oversight of 15 community health centres in the district, including those in two Millennium Villages. In Ségou, the team visited Hôpital Nianankoro Fomba (HNF), the regional tertiary care facility supported by the Malian Ministry of Health. It housed approximately 200 beds, but physical, financial and staffing resources were severely limited.

PFP and MVP/MCI decided to initially collaborate on general maternal and child health training programs in Ségou. In 2009, they conducted two missions to train local surgeons on how to repair obstetric fistulae, a condition resulting from prolonged obstructed labour during childbirth resulting in urinary and/or faecal incontinence. During this time, they also further developed a partnership with the host health facility for these trainings, HNF in Ségou.

While earlier fact finding teams recommended establishment of a blood bank in the district hospital in Markala, a later visit in 2011 recommended that HNF in Ségou was in need of a blood bank and a more appropriate site given that it is a regional tertiary care hospital.

HIV/AIDS is at general epidemic levels in Mali, although less so than in other parts of Africa, with an estimated prevalence rate of about 1.5%. Nevertheless, the infections remain concentrated in high risk populations: sex workers are at greatest risk and women are disproportionately infected. A study found that 5.1% of pregnant women in the Ségou region were infected⁶, nearly three and a half times the national prevalence rate. A centralized blood centre with high standards of safety and testing for communicable diseases, including HIV, would reduce the risk of infection from HIV during blood transfusion.

The unavoidable conclusion is that the need for more blood safety activities in areas outside Bamako is crucial. Clearly when blood is urgently required, it must already be collected, tested, stocked, available and accessible or the outcome is life-threatening. This is the impetus for evaluating the implementation of a blood bank in Ségou, Mali through committed partnerships.

Such a recommendation was in keeping with international standards for developing blood safety. Similar to other under-resourced health facilities, HNF had been performing blood transfusions using whole blood, with improper testing and an inadequate supply to meet the needs of its patients.

The regional hospital in Ségou was chosen as the site to develop a blood centre for several reasons. Ségou was designated a Millennium City by MCI, so it would be a perfect hub for the region. It was one of nine regional hospitals within the national health care system, so it would be a model for other regional blood centres. It also had strong support from the Director General of the hospital. The HNF location is also in accordance with CNTS' plan for developing a blood service network throughout the country. Finally, HNF's human resources are capable of providing support to a blood centre at this location, including assisting with its development and implementation. These aligned criteria would likely enhance the probability of a sustainable, viable blood centre over the long term.

The objective of the project was established to develop a fully functioning blood centre to serve the Ségou region of Mali. The objective was based on the desire to contribute to the creation of a national system for Mali to provide a readily available and safe supply of blood. The system would be operationalized through a "hub and spoke," process whereby each region is home to a fully functioning blood centre (hub) that serves the surrounding district hospitals (spokes). This concept is consistent with WHO standards³ for the collection and processing of blood into components.

It was agreed that the partners would be PFP, MVP/MCI, the American National Red Cross (ARC), the Safe Blood for Africa Foundation (SBFA) and the Malian Ministry of Health. PFP would source all of the equipment and ensure training, along with two years of consumable supplies.

MVP/MCI would act as the in-country coordinator on behalf of PFP, ensuring local oversight for the project. The Malian Ministry of Health, acting on behalf of CNTS and HNF, would provide the building, on-going training and supplies to sustain the project after its initial implementation.

It took several months for the Ministry of Health and HNF to secure financing to construct an appropriate building where the blood centre could be located on the HNF campus. The Ministry of Health and HNF sought and received a donation of \$30,000 from the government of Japan to construct the blood centre building based on a design previously provided in accordance with WHO standards and recommendations. The building was completed at the end of February 2012.

During that time, PFP began preparations to gather and ship the necessary equipment and supplies for the blood centre. Even during the discussions of where the blood centre would be located, PFP had begun developing partnerships to secure the necessary equipment, supplies and training for the eventual blood centre. The ARC agreed to donate the equipment needed to outfit a fully autonomous blood centre. Because PFP was aware that it lacked the expertise to train health workers in blood safety practices, it partnered with the Safe Blood for Africa Foundation™ (SBFA) to execute this part of the project.

The SBFA was already operating in West Africa and providing training in the exact specialties this project required. It also had developed blood safety materials in French and had trainers in West Africa who could travel to Ségou more easily than sending trainers from the United States. The engagement of SBFA was part of the effort to include all significant actors in blood safety in Mali. The American Association of Blood Banks (AABB), Centers for Disease Control and Prevention (CDC) and Malian Red Crescent Society were all made aware of the project and asked to be involved at whatever level they chose, both during the project and for the follow-up that would be needed.

On March 21, 2012, a Malian military junta staged a coup, overthrowing President Amadou Touré. As the days continued, it became obvious that the transition from coup leader General Sanogo to a democratically-elected government would not be smooth, nor would it be fast and these caused delays while we were in the process of shipping the equipment,

deploying trainers and supplying consumables. In the wake of these events, the partners met and determined that the blood centre was needed more than ever. Rather than withdraw, the partnership that had been forged during the previous years remained strong, and the need for readily available safe blood continued. The partners advanced and in December 2012, shipped a container of equipment and supplies that would form the foundation of the blood centre at HNF in Ségou.

In January 2013, PFP and the Malian Ministry of Health signed an agreement formalizing their partnership. This formal agreement would help with the processing of the blood centre equipment shipping container, but also hold all partners accountable for their project responsibilities. Partly as a result of the political uncertainty, the containers took five months and multiple interventions from officials in both the U.S. and Mali to clear customs and arrive at its destination.

Sadly, due to the security situation in Mali, partners from the U.S. were unable to be in Mali to see the equipment delivered. When the container was finally released in May 2013 and delivered to HNF, the partners deployed a regional expert from SBFA to set up the blood bank equipment, assess the need for training and develop a plan to ensure the blood centre would be functional as soon as possible.

That visit was extremely successful, as SBFA was able to install the equipment donated by the ARC, purchase several items still needed for the blood centre and meet with HNF officials to determine the training the blood centre staff would need. In July 2013, SBFA trainers returned to conduct an intensive weeklong course on blood safety and processing practices. The partners then decided to suspend training visits for a few weeks during the presidential election, given the potential for unrest during this period. Once it was found to be safe, SBFA returned to continue its training and support to the actively functioning blood bank in Ségou. The training included both the technical aspects of testing blood for Transfusion Transmissible Infections (TTI) and strategies to recruit and manage VNRBDs.

RESULTS

HNF now houses a well-resourced blood service and twelve trained technicians. Training has been conducted on Monitoring and Evaluation techniques, Good Manufacturing Practices and Quality Systems in Blood Safety, Supply Chain and Equipment Management, Data Collection Practices and Record Keeping, Understanding the Blood Safety Value Chain¹⁵, Proper Utilization of Blood Test Kits, Donor Recruitment strategies and Donor Management. During training sessions, staff showed an average improvement of 17.7% between pre- and post-theoretical training tests.

Table 1: Annual HNF Blood Bank Outputs at *Hôpital Nianankoro Fomba* (HNF) in Ségou, Mali

Year	Population	Total Donors	Volunteer Donors	Family/Replacement Donors
2012	159,000	1,716	161	1,555
2013	159,000	2,288	533	1,755

Table 2: Units of Blood Requested vs those and available at *Hôpital Nianankoro Fomba* (HNF) in Ségou, Mali

Year	Units of Blood Requested	Units of Blood Available
2012	2,147	1,503
2013	2,582	1,835

PFP and SBFA also developed a tool to monitor and evaluate the project's success. Starting with a baseline of 2012, blood bank staff has been trained to utilize the customized tool to collect and report data annually (Table 1). The information will be used to assess changes in blood collection practices over time. In two years, there was an 18% increase in the number of blood donors. Further, in the first year 9% of donors were volunteers; in 2013, that number increased to 23%. The change was due to conducting limited training on voluntary donations and mobile collections in Ségou.

Hospital-based blood services are established to rapidly respond to local need and engage local communities. Requests for blood units were made to the new blood centre and the critical objective is to ensure their timely access and enough blood available whenever it is needed¹⁶ (Table 2).

Donor and recipient demographics include age and reason for transfusion. Donors of the ages of 25-44 years were the highest supporters (Figure 1). In 2012, males were 93% of the donors. Primary reasons for transfusion in 2013 include anaemia (55%), malaria (34%), surgery (7%), haemorrhage (2%), and trauma (2%).

Figure 1: Age demographics of donors and recipients at *Hôpital Nianankoro Fomba* (HNF) in Ségou, Mali.

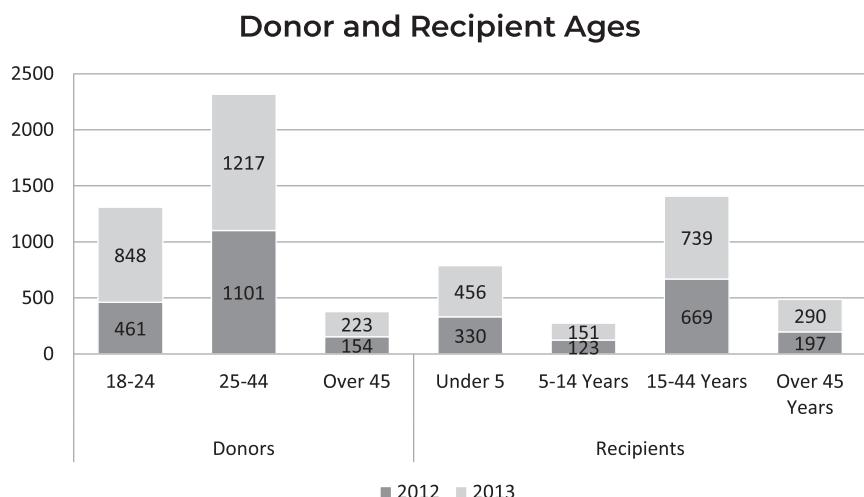


Figure 2: Reasons for discarded blood at *Hôpital Nianankoro Fomba* (HNF) in Ségou, Mali

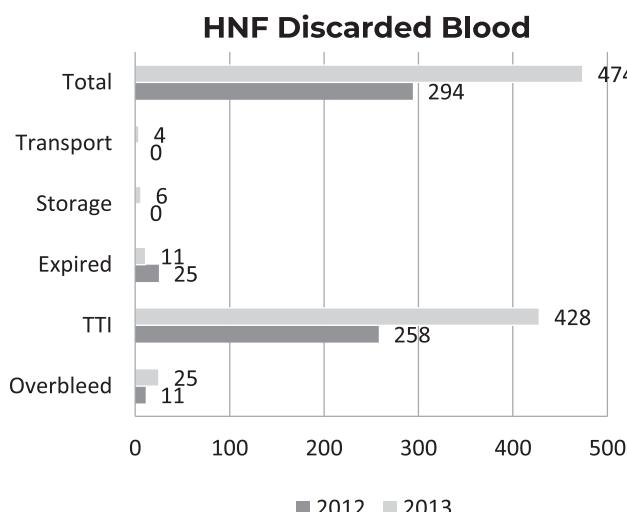
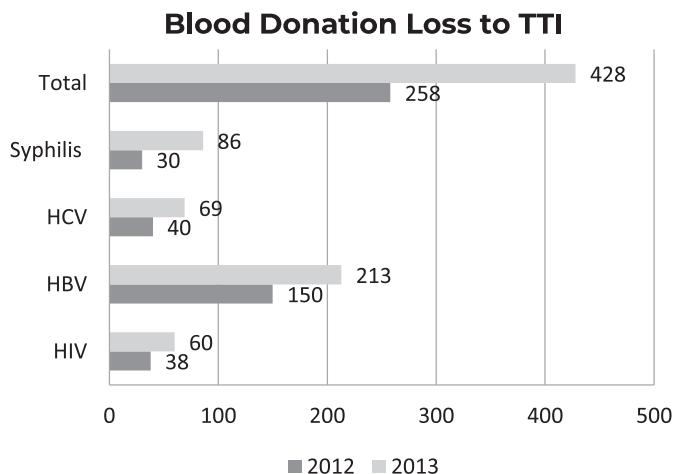


Figure 3: Blood donation loss to Transfusion Transmissible Infections (TTI) at *Hôpital Nianankoro Fomba* (HNF) in Ségou, Mali.



DISCUSSION

The challenges associated with this project are great, yet many were mitigated through careful planning, and sometimes trial and error. First, the nature of working across multiple cultures and geographic areas causes strain on the timing and sometimes the delivery of project goals. Second, collaborations require clearly defined roles from each party. Finally, financial constraints created challenges in planning, execution and partner engagement. Each of these challenges is further explored.

Communicating across cultures was the first significant challenge faced. The partners had to overcome a language barrier and six- and eight-hour time differences. This was easily navigated through careful planning, the use of translators and Francophone trainers, however, translation added time and parties to communications. The difference between translation and interpretation also became apparent as there

are few professional translators well versed in blood Safety. Physical separation proved to be a challenge as well. Once the project was near completion, the hospital hosted a ribbon-cutting ceremony, yet U.S.-based partners were unable to attend the ceremony due to security constraints.

Another challenge was all partners' access to and use of technology. In Mali, for example, the partners in Bamako and Ségou had regular access to email and Internet, so they had the ability to correspond with those in the U.S. and elsewhere. Despite that, the physical distance sometimes contributes to a lack of relationship building, causing delays in correspondence. At times, it took multiple attempts to obtain responses that meant that issues went unanswered and opportunities potentially lost.

Similarly, combatting the culture of aid is always a challenge. Within the NGO world, there are organizations that ‘go and do’, sometimes even causing more harm than help. This occurs when organizations determine the beneficiaries’ needs and attempt to meet them without consulting the beneficiary or accounting for the local capacity or culture. Because the Malian partners have been subjected to such treatment in the past, it took several years to establish a true working relationship based on trust. Progress moves at the speed of trust.

Solid partnerships require not only time but also clearly defined roles and expectations for all parties. Responsibilities for health care in Mali were complicated. Prior to the construction of the blood bank in Ségou, the CNTS funded the country’s only blood centre in Bamako and any blood safety activities outside that centre (whole blood collections and transfusions) were funded from the local hospital’s budget, which was sourced directly from the Ministry of Health. Thus a significant concern was who would take ownership over the new blood centre, both financially and in management. It was agreed that once the Ségou blood bank was fully functional, CNTS, which get its funds from the Ministry of Health, would be allocating a portion of its budget for the maintenance of the facility. Strategic oversight of the blood bank would come from CNTS, while the hospital provides daily management and would in part be responsible for budgeting for the routine operational aspects.

Partners engaged in the project understood the need to define roles and responsibilities. Some were clear – e.g. the ARC would donate equipment – but other actors had different interests. PFP is typically an organization that provides medical training, but blood safety was outside of the organization’s core expertise. MVP/MCI are research and advocacy organizations but not logistical experts.

The hospital partners are aware of their needs but, not having previously processed blood, did not know specifically how to set up a blood bank. The SBFA, while the most experienced in blood safety, was engaged as a consultant, not lead, on the project. This structure was due to their existing relations in Mali, working on behalf of the CDC to improve blood safety in the country. They were required to keep their CDC and PFP work separate. Challenges of defining responsibility were overcome through long-term planning informed by detailed discussions between all the concerned parties. Signing of an agreement between PFP and the Ministry of Health created an overarching construct; PFP would serve as project manager and coordinate all parties, while the Ministry of Health would plan for and provide input into the planning and long-term funding and oversight for the blood centre.

Finally, funding for this specific project was, and continues to be a significant challenge. The project was cached as part of PFP’s “maternal and child health” program to attract donors and ‘fit’ with PFP’s organizational mission. Unfortunately, PFP was unable to secure a lead donation, and had to redirect other internally sourced funds to finance the project. Ultimately, in-kind donations of equipment and time from the ARC and SBFA, and careful budgeting meant that all of the project’s original objectives were able to be met with the funding available.

There is still much to be done before the blood centre in Ségou can be sustained locally. The critical component of all future activities is the engagement of both a technical assistance partner, such as SBFA, and the Ministry of Health, who will be working together over the longer term to improve blood safety throughout Mali supported by the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) as long as this lasts.

Despite challenges in developing the project, the partners do have a robust plan to monitor the outcomes and outputs of the new blood centre. Developed according to WHO guidelines for blood safety, the project collects information on a variety of parameters including numbers of donors, numbers of recipients, and blood centre practices. Data collection is on-going and reported annually, which allows for continuing tracking of change over time. Partners also have regular check-ins to provide a real time update on blood centre operations.

Additionally, the model of partnership also lends itself to long term stability for the blood centre. Because there are stakeholders physically situated near the blood centre, they will be able to maintain a relationship even after the project is complete. This allows for continuity and long term support for the centre.

This project also had a fit-for-purpose design. After careful analysis of the existing blood safety infrastructure in the country and conversations with global experts in blood safety, the partners determined together that this blood centre would not simply replace the blood services that the hospital was already providing, but augment care through improved processing of blood components. Further, locally purchased equipment, such as a generator and freezer, would ensure that the blood centre would have in-country technicians able to service the equipment and keep it functioning for years to come.

Perhaps the greatest strength of the blood centre project is the engagement of all significant actors in the Mali blood safety sector. Partnering with organizations already engaged in regional blood projects, rather than attempting to recruit new experts, means that the blood centre staff become part of the regional blood safety network. Specifically, the CDC, through PEPFAR, is a significant funder of capacity building programs for blood safety in Mali, so the blood centre in Ségou should now be incorporated into CDC planning for the country.

There remain numerous areas for future development of the new blood centre in Ségou. First, a blood centre is useless without individuals who donate their blood optimally as volunteer non-remunerated blood donors. Second, an infrastructure to distribute blood in remote areas of the Ségou region is needed. Finally, Mali’s other eight administrative regions deserve the same access to high quality safe blood as those in Bamako and Ségou have.

During the development of the blood centre, all partners were aware that the most critical factor to its success would be the cultivation of VNRBDs. They are the lifeline for any blood safety system, providing a constant and arguably safer supply of blood that is readily available for transfusion when needed. While this project was focused on developing the actual blood centre, those who would take ownership over the centre and incorporate it into the National Blood Safety System were engaged, so that the transition would occur more easily. The development of VNRBDs is a priority for both the Ministry of Health and the CDC, so that once the blood centre is fully functional, those parties will assume responsibility for donor outreach and development. During the political conflicts, the country experienced an increase in VNRBDs, who were showing solidarity with their fellow citizens affected by the conflict. The Ministry of Health and CNTS hope to capitalize on such momentum to educate citizens on the importance of donating blood and mobilize them to do so. At the same time, the CDC is funding work that analyses barriers to donating blood and develops a plan to increase blood donations in Mali over the next several years. Once the blood centre at HNF in Ségou is fully operational as a regional hub, the Ministry of Health must develop a ‘spoke’ system, to push blood out to the referral hospital centres as well as extend its donor network.

While blood will only be processed in Ségou, its components should be stocked in the regional health centres, so that patients who need transfusions but cannot come to the tertiary care hospital can receive them. Further, a fully developed hub and spoke system would include the collection of blood donations in satellite facilities, which would then be transported to the blood centre in Ségou for processing, then distributed out where needed. Some mobile collection and distribution has already begun on an inconsistent basis, but such practices need to be more strategic. This will be achieved through more directed training in mobile collection practices, although the blood bank has already begun mobile collections on an infrequent basis, displaying their enthusiasm and commitment to long term sustainability.

Sadly, while this initiative to develop a blood centre in Ségou was a huge effort on the part of all stakeholders, it is only a small advancement toward improving Mali's health care system. Now, only Bamako and Ségou have blood centres known to conform to WHO guidelines³, but even more aspiring is that the country's eight other districts would have blood services integrated into a nationally coordinated competency under the CNTS. Once the Ségou region has a well-developed blood safety system, the government and international investors must replicate this throughout Mali. They will have the experience and resources from this project to assist in a smoother development process.

As this implementation evaluation emphasizes, safe blood is one of the foundations of a fully-functioning health system, yet Mali's blood safety system is woefully under-resourced and underdeveloped.

REFERENCES

- McCullough, T, and McCullough, J. Strengthening blood programs in developing countries. 2013; *Transfusion and Apheresis Science*, 49(3): 408-415
- Mali Ministry of Health. National policy for blood transfusions. 2009; Bamako, Mali: Centre National de Transfusion Sanguine (CNTS)
- World Health Organization. Developing a national blood system: Aide-mémoire for Ministries of Health. 2011; <http://bit.ly/1w2pRu0>
- Bugge H, Karlsen N, Oydna E, Rake M, Wexels N, et al. A study of blood transfusion services at a district hospital in Malawi. 2013; *Vox Sanguinis*, 104:37–45. doi:10.1111/j.1423-0410.2012.01628.x
- Lund T, Hume H, Allain J, McCullough J, Dzik W. The blood supply in Sub-Saharan Africa: needs, challenges, and solutions. 2013; *Transfusion and Apheresis Science*, 49(3): 416-421. doi: 10.1016/j.transci.2013.06.014
- World Health Organization. Sub-Saharan Africa: 2006 AIDS epidemic update. 2006 http://www.who.int/hiv/mediacentre/04-Sub_Saharan_Africa_2006_EpiUpdate_eng.pdf
- Asenso-Mensah K, Achina G, Appiah R, Owusu-Ofori S, and Allain JP. Can family replacement blood donors become regular volunteer donors? 2014; *Transfusion*, 54:797–804. doi:10.1111/trf.12216
- Taylor-Smith K, Zachariah R, Manzi M, Van den Boogaard W, Nyandwi G, et al. Achieving the Millennium Development Goal of reducing maternal mortality in rural Africa: an experience from Burundi. 2013; *Tropical Medicine & International Health*, 18:166-174. doi:10.1111/tmi.12022
- Hogan M, Foreman K, Mohsen N, Ahn S, Wang M, et al. Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. 2010; *The Lancet*, 375(9726): 1609-1623. doi:10.1016/S0140-6736(10)60518-1
- World Health Organization. Trends in maternal mortality: 1990–2008. Estimates developed by WHO, UNICEF, UNFPA and The World Bank. 2010; Switzerland: Department of Reproductive Health and Research
- Bates I, Chapotera GK, McKew S, and van den Broek, N. Maternal mortality in Sub-Saharan Africa: the contribution of ineffective blood services. 2008; *BJOG*, 115(11):1331–9. doi: 10.1111/j.1471-0528.2008.01866.x
- Hoy R, Sidibé A, & Millennium Cities Initiative. Health needs assessment for the City of Ségou, Mali. 2010; MCI Social Sector Working Paper Series, N. 18/2010. New York, NY: MCI, Columbia University
- World Health Organization. Sickle-cell anaemia: report by the Secretariat. 2006; http://apps.who.int/gb/archive/pdf_files/WHA59/A59_9-en.pdf
- Ousmane T, Salimata K, Sissok S, Diarra E, Niangaly A, et al. Human genetic determinants of severe malaria in Mali. 2012; MalariaGEN, <http://www.malariagen.net/community/partner-studies/cp1-mali>
- Zacharias PJK. The Blood Safety Value Chain (BSVC). 2015; The Safe Blood for Africa Foundation™, Rivonia, South Africa, 2 pp
- Ala F, Allain JP, Bates I, Boukef K, Boulton F, et al. External financial aid to blood transfusion services in Sub-Saharan Africa: a need for reflection. 2012; *PLoS Med* 9(9): e1001309. doi: 10.1371/journal.pmed.1001309
- Jacobs B, Mercer A. Feasibility of hospital-based blood banking: a Tanzanian case study. 1999; *Health Policy & Planning*, 14(4): 354-362
- Mafirakureva N, Nyoni H, Nkomo SZ, Jacob JS, Chikwereti R, Musekiwa Z, Khoza S, Mvere DA, Emmanuel JC, Postma MJ and van Hulst M. The costs of producing a unit of blood in Zimbabwe. 2016; *Transfusion* 56: 628–636.
- Schantz-Dunn J, Nour N. The use of blood in obstetrics and gynecology in the developing world. 2011; *Reviews in Obstetrics & Gynecology*, 4(2): 86-91. doi: 10.3909/riog0160

While the development of a blood bank in Ségou was a critical step in advancing the country's health care system, much remains to be done to ensure that citizens have access to quality care wherever it is needed. Until such a time, haphazard blood collection and transfusion will occur in the absence of reliable testing for TTIs, and the population will experience unnecessary deaths. Because of this partnership, the Ségou region has taken important formative steps towards securing a safe and more readily available blood supply.

Recent (October 2016) communication with the Hospital Director indicates that the Blood Bank continues to function and adds value to the general hospital services. However, resources remain a significant challenge and they are largely dependant on donor funding to maintain the standards of blood safety needed.

ACKNOWLEDGEMENTS

Our sincerest gratitude goes to our partners in the Mali Ministry of Health, the staff of Safe Blood for Africa Foundation™, Physicians for Peace, Millennium Villages Project/Millennium Cities Initiative and the American National Red Cross. We thank our donors who provided funds and equipment to bring a blood centre to Ségou, Mali. The field work was ably conducted by Andy Numbi and Juliette Koster (RIP) both previously of the Safe Blood for Africa Foundation™ (SBFA).



Survey of facilities for appropriate training in blood transfusion in Anglophone West Africa

Les établissement de sang d'Afrique de l'Ouest Anglophone

Adewuyi JO¹, Saliu Idris A², Dada-Joel Arinola³

1. Consultant Haematologist, University of Ilorin Teaching Hospital, Nigeria
2. Country Director, Safe Blood for Africa Foundation Abuja, Nigeria
3. Nurse Tutor, School of Nursing, University of Ilorin Teaching Hospital, Nigeria

Correspondence

Prof Banji Adewuyi

Email: jamesesie@yahoo.com
Telephone: +234(0)803 713 5170

Key words

Training, Blood Transfusion, Blood Services,
West Africa

Running title

Training in Blood Transfusion in West Africa

Mots-clés:

Formation, Transfusion Sanguine,
Etablissements de sang, Afrique de l'Ouest

Titre abrégé

Training in Blood Transfusion in West Africa

ABSTRACT

Background

Several different categories of professionals, including graduate and specialist medical personnel, nurses and medical laboratory scientists amongst others are engaged in blood transfusion establishments worldwide. Some knowledge by workers outside their own specific specialty and a high degree of integration are required for effectiveness in blood services.

Objective

To survey training facilities for blood transfusion in Anglophone West Africa for appropriateness, and to identify areas of deficiency requiring rectification.

Methods

The contents of training curricula of various institutions were scrutinized. Serving members of blood establishments were interviewed to ascertain their background professional training and present role in their blood establishments.

Results

Sufficient numbers of graduate and specialist medical personnel nurses and medical laboratory scientists are being produced in the Region, to provide workforce for blood transfusion establishments. However, there is deficiency of knowledge across professions with resultant suboptimal integration of roles, and effectiveness of the services. Some categories of personnel are not appropriately trained and not placed in career schemes.

Recommendations

Supplementary training is recommended for all categories of personnel, to promote efficiency and effectiveness in blood establishments.

RÉSUMÉ

Contexte

Plusieurs catégories différentes de professionnels, y compris des personnels médicaux diplômés et spécialisés, des infirmières et des scientifiques du laboratoire médical, entre autres, sont recrutés dans des établissements de transfusion sanguine dans le monde entier. Certaines connaissances des travailleurs en dehors de leur spécialité spécifique et un haut degré d'intégration sont nécessaires pour être efficaces dans les services de sang.

Objectif

Mener des enquêtes sur les établissements de formation en transfusion sanguine en Afrique de l'Ouest anglophone pour déterminer leur pertinence et identifier les domaines d'insuffisance nécessitant une amélioration.

Méthodes

Le contenu des programmes de formation de diverses institutions a été examiné. Des membres des établissements de transfusion sanguine ont été interrogés pour déterminer leur formation professionnelle de base et leur rôle actuel dans leurs établissements de transfusion sanguine.

Résultats

Un nombre suffisant d'infirmiers diplômés et de personnel médical spécialisé et de scientifiques de laboratoire médical sont produits dans la Région, pour fournir de la main-d'œuvre aux établissements de transfusion sanguine. Cependant, il y a un manque de connaissances dans les professions, ce qui entraîne une intégration insuffisante des rôles et une efficacité militée des services. Certaines catégories de personnel ne sont pas correctement formées et ne sont pas intégrés dans des plans de carrière.

Recommendations

Une formation complémentaire est recommandée pour toutes les catégories de personnel afin de promouvoir l'efficience et l'efficacité dans les établissements de transfusion sanguine.

INTRODUCTION

A standard blood service is a multi-disciplinary organization in which many different professionals are engaged. These include majorly, the medical, the scientific and technical, and the nursing personnel.

The effectiveness of a blood service is determined not only by the availability of suitable equipment and other working materials in a conducive working environment, but also by the adequacy and efficiency of personnel who are suitably trained for the roles they have to perform in the service. For each category of professionals, different basic academic and professional qualifications are required, but there are also abilities that are peculiar to blood handling and management, which are required by all cadres. Availability of facilities and systems for relevant training is one of the factors that make for an effective and efficient blood service. This article is the report of a survey of available institutions and programs in the Anglophone West Africa, for the training of personnel for work in blood transfusion.

Information was gathered from the published curricula of various training institutions and programmes. Teachers and students in the institutions and workers in blood services and hospital blood transfusion departments also supplied information through self-administered, structured questionnaires, and by direct interviews in some cases.

THE TRAINING OF MEDICAL PERSONNEL FOR BLOOD TRANSFUSION SERVICE

Basic Training

In the Anglophone West African Countries, namely Nigeria, Ghana, Liberia, Sierra Leone and the Gambia, the training of medical doctors as in most other places, is based in the Universities. In most Universities in the Region, students enter into the medical undergraduate programme after completing secondary or grammar school education and obtaining the West African School Certificate, (WASC) with at least credit passes in English Language, Mathematics and the core science subjects of biology, chemistry and physics. The WASC is the equivalent of the GCE ordinary level of the United Kingdom, the former colonial masters. A few students enter with the Higher school certificate (HSC) which is equivalent to the GCE Advanced Level or with a first university degree in any related science discipline.

The WASC entrants spend six years to qualify as medical doctors, while the HSC and B.Sc. entrants are exempted from the first undergraduate year and spend five years to qualify.

The second (200level) and third (300 level) years of the Medical Undergraduate Programme are devoted to the preclinical basic science studies, the fourth (400 level) to pathology and pharmacology and the fifth (500L) and sixth (600L) years to the clinical studies of internal and community medicine, surgery and obstetrics and gynecology. Some universities introduce variations into the basic arrangement of courses to achieve greater integration. It is in the pathology course that students learn about the theoretical and laboratory aspects of blood transfusion. Although blood transfusion is taught at this level as a subspecialty of the broader Haematology discipline, there is sufficient content of blood transfusion for the level of training up to the first medical degree of MBBS or MBCHB.

However, while the fresh medical graduate is sufficiently equipped to apply the knowledge of blood transfusion to patientcare, he or she is not anywhere near being prepared to work in a blood transfusion service.

POSTGRADUATE PROFESSIONAL OR SPECIALIST TRAINING

In contrast to the undergraduate medical programme, the professional training of pathologists or haematologists is not based in the University. Like in the British system which was inherited by the erstwhile Anglophone Colonies, Postgraduate Professional Medical Training including haematology is undertaken under the auspices of a body of specialists called a College.

Individual countries like Nigeria, and more recently, Ghana, have their National Postgraduate Medical College while the five Anglophone West African Countries jointly operate a West African Postgraduate Medical College. This system of professional medical training is called a Residency Programme and the trainees are called Resident Doctors. The graduates of the colleges are called Fellows of the respective colleges. There is a published training curriculum¹ for pathologists, which is very similar for all the colleges, and there is reciprocity of recognition of the qualification across the five countries. Pathologist training covers a minimum period of 4 years but could extend to 5 or 6 depending on the trainee's progress.

In the first half of the training programme (Part I) the resident doctor rotates through the four major division of pathology, while in the Part II, he/she concentrates on the one subspecialty of choice such as haematology and blood transfusion. The programme is a mixture of theoretical course work, module by module, (table 1) bench practicals undertaken in the laboratory of an adjoining tertiary hospital accredited for the training, and clinical apprenticeship under a designated supervisor.

A newly qualified Fellow in the subspecialty of haematology and blood transfusion enters professional service at the level of a Consultant Haematologist in the routine laboratory of a tertiary hospital, or a National Blood Service, or as a lecturer in a medical school. The Fellow is able to function well professionally at any of these positions.

Thus with the regular output of Fellows from the Colleges, as shown in Table 2, there should be no shortage of specialist personnel to work in the blood services in Anglophone West Africa. However, the managerial skills required at this high entry point still have to be acquired on the job, as they do not appear to be well covered in the fellowship training programme.

ACADEMIC POSTGRADUATE TRAINING

In contrast to the Fellowship training programme an alternative route of specialization in blood transfusion or scientific graduates from the university undergo further studies to acquire a Master's degree (Msc) or Postgraduate diploma (PGD) in blood transfusion.

In West Africa, the MSc or PGD course in blood transfusion is not well developed, being offered in only one or two centres, such as in the College of Medicine of the University of Lagos, according to information supplied by the Head of Haematology department². In other parts of Africa also, only few centres offer the MSc or PGD course in blood transfusion science. Examples are Tunisia³, and South Africa⁴. The notable benefits of the academic postgraduate are two-fold. It prepares the candidates better for an academic career, and also promotes improvement of research capacity in blood transfusion.

This is part of the objective of the T-REC programme sponsored in Africa by the Liverpool School of Tropical Medicine and Hygiene, in collaboration with the Africa Society for Blood Transfusion (AfSBT)⁵.

The MSc or PGD programme is yet to make significant impact in the management of blood services in Africa.

TRAINING OF MEDICAL LABORATORY SCIENTISTS IN BLOOD TRANSFUSION SCIENCE IN NIGERIA

Historical Perspective

Training in Medical Laboratory Science (MLSc) in Nigeria was an offshoot of the system in Britain, the former colonial master. The training consisted of a five year programme in two parts; Intermediate and Final. The intermediate level was a 3 year training in all the disciplines of pathology, while the final 2 years took up training in one discipline of choice such as haematology and blood transfusion science (BTSc).

At both levels, hospital laboratory postings were sandwiched between classroom lectures and practicals. Initially, the intermediate training was done in Nigeria, while successful candidates travelled to England for the Final training.

When the Institute of Medical Laboratory Technology of Nigeria (IMLTN) was established by decree 56 of 1968, that body took over the control of the profession of Medical laboratory science in Nigeria including the training and certification of the professionals. However, the final training of the medical laboratory scientists continued to take place in England until in 1971 when the IMLTN introduced a 4-Part (1,2,3 and 4) training programme, leading to the award of what was called the Associate of the IMLTN or AIMLT. In that programme, BTSc was taught in the latter parts (3 and 4) of the programme.

A fellowship programme was later introduced in which Associates could study to become Fellows either by course work, which was essentially a repeat of parts 3 and 4 in a different subspecialty of pathology or by project and thesis.

Meanwhile, the IMLTN went through a series of reorganization until in 2003, it assumed the present name of Medical Laboratory Science Council of Nigeria, MSLCN. The Council, by legislation now performs both certification and regulatory control of the medical laboratory science profession⁶.

CURRENT TRAINING IN MLSc IN NIGERIA

MLSc training by Associate system continued until 1980 when two universities, and in 1983, two others, introduced a 4-year degree programme leading to the award of Bachelor of Medical Laboratory Science, BMLS, qualification. Then in 1987, the MSLCN developed a 5-year harmonized programme in MLSc training which was approved by the National Universities Commission for all universities offering a first degree programme in MLSc⁷.

Entry requirements for the BMLS are, at least credit passes at WASC or GCE O'Level, in English language, mathematics, chemistry, biology, and physics. Prospective candidates also have to pass a common entrance examination called the Unified Tertiary Matriculation Examination, UTME, without which, unless exempted nobody can be admitted into undergraduate studies in Nigeria.

In the first year of the 5 years BMLS programme (100 Level) students study advanced mathematics, chemistry, biology and physics and at 200level (second year) they study the basic health sciences like anatomy, physiology, biochemistry and pharmacology. The 3rd, 4th and 5th years are devoted to laboratory studies in blood transfusion science.

The programme in the 5th year includes a mandatory research project to be conducted, written up and defended. With about 20 universities now offering the BMLS degree programme, the associate programme has been discontinued in Nigeria. A few universities are now beginning to offer postgraduate courses in MLSc up to the Masters and Doctorate Levels.

THE ROLE OF THE MEDICAL LABORATORY SCIENTIST IN BLOOD TRANSFUSION PRACTICE

A qualified medical laboratory scientist in the BTSc specialty is expected to possess and demonstrate the following abilities;

1. Knowledge of the serological characteristics of all blood group systems and their clinical importance.
2. Proficiency in all laboratory procedures for the serological and microbiological safety of blood.
3. Preparation and standardization of antisera and other reagents used in blood transfusion processes.
4. Proficiency in blood donation procedures, and the transportation, storage and processing of blood and blood components and products.
5. Resolution of abnormal and adverse events, and medico-legal issues in blood transfusion practice.
6. Knowledge of quality management systems (QMS) and assurance, and good manufacturing practices in the blood transfusion laboratory.
7. Knowledge of automation and the use of blood enterprise computer systems (BECS)
8. Knowledge of the immunology of haemopoietic stem cell transplantation and the laboratory procedures in the process.

With these competencies assured, the training of medical laboratory scientists in Nigeria provides personnel that can function effectively in the purely laboratory aspects of any blood service or hospital department of blood transfusion.

Training in Blood Transfusion at the Technical Level

In 1985, the MSLCN introduced a 3 – year training programme in medical laboratory science, leading to the award of the medical laboratory technician certificate⁸. Entry requirements are slightly lower than for the degree programme and the course content less intensive.

Medical laboratory technicians are expected to assist, and be supervised by registered medical laboratory scientists. A medical laboratory technician may be admitted into the BMLS degree programme at the second year (200) level provided entry requirement deficiencies are remedied.

In-Service Training in Blood Transfusion practice

On the job training of laboratory personnel of various cadres in blood transfusion practice has been made available in Nigeria for several years by the Safe Blood for Africa Foundation (SBFAF) with funding from PEPFAR, a programme of the United States of America.

This training which is often held in the blood transfusion laboratory of the hosting institution, is aimed at improving the proficiency of personnel, and updating workers knowledge of standard and best practices in blood transfusion procedures. However, with the progressive cutback in donor funding this service may not be sustained for long.

TRAINING OF NURSES FOR BLOOD TRANSFUSION SERVICE

Nurses are a key component of the team for the practice of blood transfusion all over the world. Nurses work in the blood services most commonly in the areas of donor recruitment and management and in the administration of blood and blood products in clinical settings.

In Anglophone West Africa, there are two routes for nursing training. The major one is in schools of nursing attached to tertiary hospitals. Trainees enter with WASC or GCE O'level, and spend 4 years to qualify as State Registered Nurse (SRN), and may spend another one year to add on, the qualification of State Registered Midwife (SRM). These qualifications are registrable with the Nursing and Midwifery Council of each country. The Council is the authority set up by Government to regulate the Nursing Profession. In the Nursing School training programme, classroom work is closely integrated with bedside clinical training.

The second route of Nursing Training is in the Universities. Trainees enter with good pass in UTME, and credit passes in English language, mathematics, and some core science subjects, and spend

4 years to qualify with BSc Nursing. During the 4 year programme, trainees are intermittently posted to affiliated tertiary hospitals for clinical nursing training.

Although the BScN system may impart wider scientific knowledge to the trainees than in the nursing school system, the integration of theoretical knowledge with clinical proficiency may not be as close. The places for University nursing training are few, but the system is still preferred by the more brilliant students for one reason. The establishment system in a country like Nigeria, places greater premium on any university qualification for employment rating, than a non-university qualification even though the university graduate may not be as well trained professionally as the non-university graduate.

Nonetheless, graduates of both systems are required to register their qualifications with the Nursing and Midwifery Council before they can go into employment in hospitals and clinics as general nurses. In Nigeria, to equip nurses with skills to work better in specialized nursing areas, the Council has created a special training scheme called the "post-basic nursing programme". The specialized areas of nursing for which this programme trains nurses include nephrology, oncology, neonatology, theatre nursing and others.

Places for post-basic nursing training are very few, because the accreditation conditions are very stringent. While the general nurse may acquire these specialist skills over time on the job, the post-basic qualified nurse is equipped to go straight into specialist nursing service and the qualification is recognized for enhanced career progression in the nursing services. As desirable as it is, post-basic nursing training in blood transfusion is not yet well developed even in Nigeria, the most advanced of the Anglophone West African countries.

DISCUSSION

Medical doctors, nurses and medical laboratory scientists who can work in blood transfusion services are not scarce in Anglophone West Africa, particularly Nigeria. These professionals are well trained in their own specific disciplines.

However, because a blood service is a multi disciplinary set up where different professionals must work harmoniously and seamlessly together vein to vein, for effectiveness, it is desirable that one set of professionals should know something about the role of the other

sets of professional in the service. This is particularly so for those in managerial or supervisory positions. This concept of integration seems to be lacking in the training of personnel for blood transfusion services.

There is also the issue of other ancillary personnel outside the three major professional groups. These include blood donor organizers and recruiters and phlebotomists. From the evidence in this survey there is no specific system of training for this group and their position in the career schemes of service is not clearly established

RECOMMENDATIONS

National blood services, with assistance from regional and /or continental AfSBT, should design a training scheme for blood donor organizers, recruiters and phlebotomists, and other ancillary personnel. National blood services should also sensitize and pressurize their Ministries of Health and other relevant authorities to recognize and place on appropriate schemes of service this category of blood transfusion workers after successful training.

An integrated training scheme for intending entrants into the blood service is highly desirable. Doctors, nurses and medical laboratory scientists may be admitted into this training for a period of say, six to nine months. The training course should be service oriented, preferably outside the university system and should lead to the award of a certificate which may be called the post basic certificate in blood transfusion.

The curriculum may be set in modules such as the clinical module, the technical module, the quality module, the marketing and human relations module, and an organization and management module. Participants may be exempted from the module of their primary or basic training. The certificate should be registrable with the Health Professions Authority of each country, and should count for career progression.

While the full course is being developed a shorter version of it lasting say 4-6 weeks, may be designed, without certification, as an orientation course for new entrants into blood services.

The AfSBT, perhaps through its education committee, may help to develop these ideas to be sold to national blood services for implementation.

A survey, similar to the one reported here may be conducted in other Regions of AfSBT to provide a continental perspective.

Table 1: Transfusion Medicine and Haemolytic Disease of the Newborn

S/N	Topic
1.	The Blood Bank: organization, infrastructure & basic equipment, counseling room, bleeding room, donor resting room
2.	Blood Donor Organisation: donor organisers, phlebotomists, types of blood donors, donor care
3.	Donor blood screening for transmissible infections: HBV, HCV, HIV, Syphilis, etc.
4.	Medical screening of blood donors; Bleeding room procedures
5.	Grouping antisera: sources; avidity; antigen/antibody reaction enhancing agents
6.	Laboratory procedures: ABO and Rh blood grouping (Tile and Tube techniques); antibody screening, direct and indirect anti-human globulin tests, Cross matching;
7.	Laboratory procedures: Component preparation, red cell concentrates, fresh frozen plasma (FFP), frozen plasma (FP), platelet concentrates, cryoprecipitate, etc.; indications for component use
8.	Clinical transfusion practice: checking of donor/recipient data at bed side; hazards of blood transfusion, investigation and management of transfusion reactions
9.	Red cell substitutes
10.	Parentage dispute and blood group serology
11.	Haemolytic disease of the newborn (ABO, Rh, others): diagnosis and management
12.	Laboratory safety and quality assurance in transfusion practice.

Table 2: New Fellows, by year in the last 10 years, in the Haematology and Blood Transfusion specialty of the National Postgraduate Medical College of Nigeria (NPMCN)

Year	Number of New Fellows	Year	Number of New Fellows
2008	9	2013	2
2009	1	2014	10
2010	5	2015	17
2011	8	2016	15
2012	8	2017	17

Source: *Academic Registrar's Office, NPMCN, 2018.*

REFERENCES

- National Postgraduate Medical College of Nigeria: Training Curriculum for Residency programme in Pathology 2013.
- Akanmu A.S. Masters Programme in Haematology and Blood Transfusion at the department of Haematology, College of Medicine, University of Lagos 2014 (Personal Communication)
- Bookef Kamel, Postgraduate Programme in blood transfusion, Tunisia National Blood Service 2014 (Personal Communication)
- University of the Free State, RSA, Postgraduate Diploma in Transfusion medicine. Africa Sanguine 2013 Vol 16(2):p96
- Alison Dun, Daniel Ansong, David Mvere et al T-REC: strengthening capacity for blood transfusion research in Ghana and Zimbabwe Afr. Sang 2014 Vol 16(2):14 – 18
- Association of Medical Laboratory Scientists of Nigeria. Evolution of Medical Laboratory Science Profession in Nigeria 2014
- Medical Laboratory Science Council of Nigeria: Curriculum for the Medical Laboratory Science degree programme 2014
- Medical Laboratory Science Council of Nigeria: New curriculum for Technician Training Programme 2013



Key amulets: a cultural clinical sign of epistaxis

Les amulettes en forme de cle: un signe culturel de l'epitaxis

Barrett CL¹, Webb MJ², Malherbe J³, du Plooy S⁴

1. Department of Internal Medicine, University of the Free State, Bloemfontein, M.B., Ch.B., PG Dipl (Transfusion medicine), M.Med (Internal Medicine), FCP(SA)
2. Department of Internal Medicine, University of the Free State, Bloemfontein, M.B., Ch.B., M.Med (Internal Medicine), Cert Clin Haem (CMSA), Division of Clinical Haematology
3. Department of Internal Medicine, University of the Free State, Bloemfontein, M.B., Ch.B., M.Med (Internal Medicine), Cert Clin Haem (CMSA), Division of Clinical Haematology
4. Department of Anthropology, IT 22, University of the Free State, Bloemfontein, M.Soc.Sc (Anthropology),

ABSTRACT

An association between key amulets/ talismans worn by Black South African patients and epistaxis was observed by the researchers.

Objective

To explore the link between epistaxis and wearing a key amulet around the neck.

Methodology

The possible association between wearing a key amulet was explored using a literature search as well as informal unstructured interviews to determine whether there was any link between wearing a key amulet and epistaxis.

Results

Four patients who were noted to be wearing a small key as an amulet were included in a case series. All patients had clinically significant epistaxis; two had immune thrombocytopenic purpura and two had uraemic platelet dysfunction. All patients informed us that they had been advised by their ‘elders’ to wear a key amulet as a measure to treat epistaxis. A traditional practitioner confirmed that wearing a small key is the local traditional treatment of epistaxis. Wearing of a key amulet as treatment or prevention of epistaxis has not been noted in medical literature, however the researchers were able to find a single reference to this on the social media.

Conclusion

All patients whom we noted to be wearing a key amulet had clinically significant causes of epistaxis. We believe that a patient noted to be wearing a key amulet should prompt medical practitioners to enquire specifically about epistaxis and initiate further investigations of the cause if present. Early identification of the cause of epistaxis may reduce long term morbidity and reduce need for transfusion at later stage.

RÉSUMÉ

Une association entre les amulettes / talismans en forme de clé portés par les patients sud-africains noirs et l'épistaxis a été observée par les chercheurs.

Objectif

Explorer le lien entre l'épistaxis et le port d'une amulette autour du cou.

Méthodologie

L'association possible entre le port d'une amulette a été explorée en utilisant une recherche documentaire ainsi que des entrevues informelles non structurées pour déterminer s'il y avait un lien entre le port d'une amulette et l'épistaxis.

Résultats

Quatre patients qui portaient une petite clé en guise d'amulette ont été inclus dans une série de cas. Tous les patients avaient une épistaxis cliniquement significative; deux avaient un purpura thrombocytopénique immunitaire et deux avaient un dysfonctionnement plaquettaire urémique. Tous les patients nous ont informés que leurs «aînés» leur avaient conseillé de porter une amulette pour traiter l'épistaxis. Un pratiquant traditionnel a confirmé que le port d'une petite clé est le traitement traditionnel local de l'épistaxis. Le port d'une amulette en tant que traitement ou prévention de l'épistaxis n'a pas été noté dans la littérature médicale, cependant les chercheurs ont pu trouver une référence unique sur les médias sociaux.

Conclusion

Tous les patients portant une amulette avaient des causes cliniquement significatives de l'épistaxis. Nous croyons qu'un patient portant une amulette devrait inciter les praticiens médicaux à s'enquérir spécifiquement de l'épistaxis et à entreprendre d'autres investigations sur la cause si elle est présente. L'identification précoce de la cause de l'épistaxis peut réduire la morbidité à long terme et réduire le besoin de transfusion à un stade ultérieur.

INTRODUCTION

The researchers observed an association key amulet/talisman worn by Black South African patients and epistaxis. According to our knowledge the relationship between wearing a key amulet/talisman and epistaxis has not been described in formal literature before. Cold keys placed on the back of the neck has been described in Western cultures as a folk remedy for epistaxis.¹ This practice has been said to cause vasoconstriction of nasal blood vessels, however this is

not supported by evidence.² Pinching the nose to halt epistaxis, is a practice that was first described by Hippocrates, and is still in use today. Other ancient methods have been described to control epistaxis. These include the use of the patient's blood to write magical words on the forehead and encouraging the patient to sniff their fried blood up the nostril.³ Wearing a preferably red-tinted amulet has also been described as an old remedy for epistaxis.³

OBJECTIVES

To explore the link between epistaxis and wearing a key amulet around the neck.

METHODOLOGY

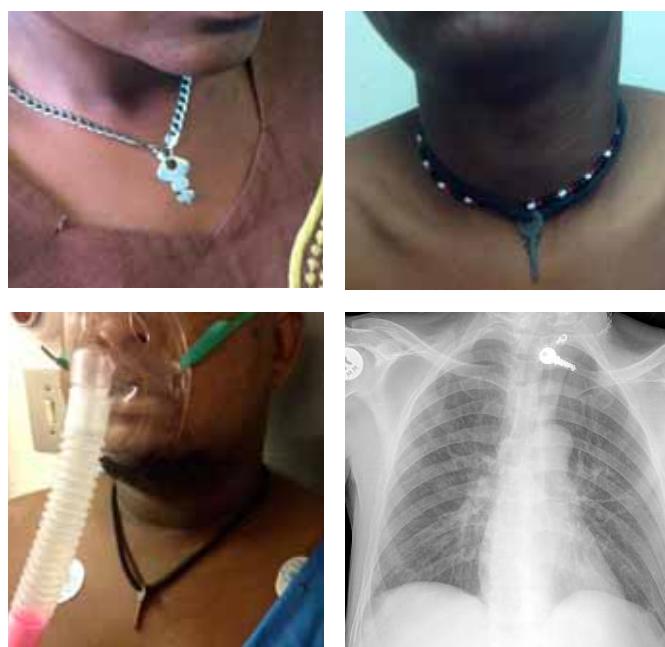
The possible association between wearing a key amulet/talisman from a string, chain or leather thong fastened around the neck and epistaxis was explored. A literature search, as well as unstructured,

informal interviews was conducted to determine if there is a link, as well as establish the significance, if any, of wearing a key and its association with epistaxis. Permission to present this case series was granted by the Ethics Committee of the University of the Free State.

RESULTS

Four patients who were included in the case series were treated by the researchers in two of the training hospitals in Bloemfontein, in the central Free State, South Africa. The patients were incidentally found to be wearing key amulet necklaces when they presented to the hospital with clinically significant epistaxis, amongst other problems. Two of the patients had epistaxis due to immune thrombocytopaenic purpura and the other two patients had epistaxis due to uraemic platelet dysfunction associated with renal failure. The keys were all small, but otherwise not similar (Figure 1).

Figure 1: Key amulets worn by patients with epistaxis.



The researchers asked the patients in this case series whether there is any cultural-medical significance of this practice, and all the patients confirmed that they had been advised by their elders to wear a key around their necks to prevent further nose bleeds. The patients did not all agree that this practice improved their epistaxis.

According to Sesotho-speaker informants, the practice of wearing a key amulet/talisman treats epistaxis. Although there is no literature in the medical and other academic sources that this is a treatment of epistaxis, the researchers identified a case in the social media (Twitter), where two people were sharing medical advice (in Sesotho) regarding nose bleeds, where one advised the other to wear a key around his neck.⁴

A traditional practitioner from the Bloemfontein area was asked about the practice, and she confirmed that a key amulet might be used to treat epistaxis. She also stated that it is not necessary that the key should be prescribed by a traditional practitioner, and that a patient could simply buy a small padlock, and wear the key around their neck. The padlock, should then be put away and not used. According to her, the key should be small, for no reason other than it is more comfortable to wear a small key than a larger one.

The most complete explanation that was obtained was that if a person suffering from epistaxis obtained a padlock and its respective key, and that the padlock were locked and not unlocked again, that the epistaxis would not recur. In a sense the locking of the padlock "locked away" the bleeding. The key is then worn about the neck to ensure that it is not able to unlock the padlock, and thus prevent further bleeding. The patients were not averse to us removing the amulet to inspect it – as it was not the fact that the amulet was around their neck, but rather that the padlock was still locked that was seen to prevent the bleeding. It was interesting to note that some of the patients had simply been told to wear a key around their neck to stop the epistaxis, while others had been instructed to lock a padlock and prevent it from being unlocked by wearing the key about their neck.

DISCUSSION

As all the patients in this case series had clinically significant causes of epistaxis, the researchers believe that this is an important socio-medical relationship in patients who are treated in our district. Subsequent to obtaining ethical approval for this case series, we have noted that many patients who present at our hospital with epistaxis wear a key amulet/talisman.

With regard to variety in response, this should not be considered as one refuting the other. Instead, we may consider the idea of dominant and alternative narratives about key wearing and their connection to nose bleeds. Neither should be viewed in absolutistic and static terms. Rather, that key wearing narratives are constantly in a state of development/becoming.

CONCLUSION

We believe that this cultural clinical sign should alert medical practitioners to specifically ask patients about the presence of nose bleeds, when a patient is noted to be wearing a key amulet/talisman

A recommendation is to further explore the phraseology batho ba baholo (directly translated as elders). It may be a general reference to elders, the wise ones in communities. It may be a reference to ancestors (badimo) who in essence are the ultimate ‘elders’. In some cosmological conceptions ancestors may instruct descendants to follow certain treatment regimens, and wearing a key may be just such a regimen. Distinguishing ancestors and guardian angels (baholo ba hao) as two categories of elders (baholo) may be a fruitful avenue of investigation. A further possibility is that in a country where patients are all too familiar with the dictate that traditional health practices should not simultaneously be pursued with biomedical treatment, patients may use this vague reference to elders to avoid chastisement from the consulting medical practitioners.

around his/her neck. This may suggest quantitative or qualitative platelet pathology, which should be investigated and treated if necessary.

REFERENCES

1. Gradon J. Why cold keys stop nosebleeds. The Peoples’ pharmacy. <https://www.peoplespharmacy.com/2008/04/28/why-cold-keys-s/> [Cited 31 January 2018].
2. Teymoortash A, et al. Efficacy of ice packs in the management of epistaxis. Clin Otolaryngol Allied Sci. 2003 Dec;28(6):545-7.
3. Bertrand B, et al. Guidelines to the management of epistaxis. B-ENT, 2005, 1, Suppl. 1, 27-43.
4. Twitter. [Online] [Cited: 25 March 2014.] <https://twitter/nosferatu17/status/306897239987609600>.

8th International Blood Transfusion Congress

Kigali, Rwanda 2016



Informed Consent in Transfusion Medicine

Consentement éclairé en médecine transfusionnelle

Dr Greg Bellairs,

Western Province Blood Transfusion Service

ABSTRACT

Informed consent applies at both ends of the vein-to-vein chain in blood transfusion medicine – to blood donors, and to blood recipients.

General principles of informed consent are:

- It is a discussion between parties regarding a medical procedure.
- The risks and benefits must be explained, as well as alternatives (and the risks and benefits of the alternatives).
- Communications should be clear, and understandable appropriate to the level of the patient.
- A resultant decision should be reached, and ideally robustly documented.

Consent to donate blood:

Donors are exposed to information to make the donation process as safe as possible, for the donor themselves as well as for the recipients of blood, primarily using the content of the donor self-exclusion questionnaire and other educational material at blood donation clinics. The commonest risks are immediate vasovagal events and local injuries (e.g. bruising, painful arm). Consent is documented and signed, and the balance between risks and benefits emphasises the risks of donating. However, research in the USA published in 2009 indicated that not all of the generally accepted elements of informed consent were provided in the documentation, prompting a proposal for national guidelines. In South Africa a Regulation was promulgated in 2012 which required donors aged 16 and 17 years to have parental consent prior to donation.

RÉSUMÉ

Le consentement éclairé s'applique aux deux extrémités de la chaîne transfusionnelle de veine-à-veine dans les médicaments de transfusion sanguine - aux donneurs de sang et aux receveurs de sang.

Les principes généraux du consentement éclairé sont:

- Il s'agit d'une discussion entre les parties concernant une procédure médicale.
- Les risques et les avantages doivent être expliqués, ainsi que les alternatives (et les risques et avantages des alternatives).
- Les communications doivent être claires et compréhensibles au niveau du patient.
- Une décision doit être prise et idéalement documentée de manière robuste.

Consentement à donner du sang:

Les donneurs sont exposés à l'information pour rendre le processus de don aussi sûr que possible, aussi bien pour les donneurs que pour les receveurs de sang, en utilisant principalement le questionnaire d'autodéclaration des donneurs et d'autres matériaux éducatifs dans les cliniques de dons de sang. Les risques les plus courants sont les événements vasovagaux immédiats et les blessures locales (par exemple, ecchymoses, bras douloureux). Le consentement est documenté et signé, et l'équilibre entre les risques et les avantages met l'accent sur les risques liés au don. Cependant, des recherches menées aux États-Unis

This Regulation is currently being amended to align the autonomy of this age group with that of other medical procedures.

Consent for blood transfusion:

The ethical principles underlying informed consent for a medical procedure include:

- Autonomy – the patient alone has the right to decide whether to accept or refuse a treatment.
- Beneficence – the clinician should act in the best interests of the patient.
- No maleficence – no harm should be done to the patient.
- Dignity and honesty are implicit in the process, and include for example communication in understandable terms.

Risks and benefits of transfusion should be clearly explained in layman's terms, and based on proven therapeutic claims and safety data. In contrast with consent to donate blood, for transfusion recipients there is considerable variation in the content and comprehension of the risks and benefits, as well as the consistency of the documentation of the consent process. Suggested improvements include following published clinical guidelines, education of clinicians, and clearly communicating the blood services' haemovigilance and residual risk data.

en 2009 ont indiqué que tous les éléments généralement acceptés du consentement éclairé n'étaient pas inclus dans la documentation, ce qui a incité à proposer des lignes directrices nationales. En Afrique du Sud, un règlement a été promulgué en 2012 qui exigeait que les donneurs âgés de 16 et 17 ans aient un consentement parental avant le don. Ce règlement est en cours de modification pour aligner l'autonomie de ce groupe d'âge sur celle des autres procédures médicales.

Consentement pour la transfusion sanguine:

Les principes éthiques sous-jacents au consentement éclairé pour une procédure médicale comprennent:

- Autonomie - le patient a seul le droit de décider s'il accepte ou refuse un traitement.
- Bienfaisance - le clinicien doit agir dans le meilleur intérêt du patient.
- Aucune malfaissance - aucun mal ne doit être fait au patient.
- La dignité et l'honnêteté sont implicites dans le processus et incluent par exemple la communication en termes compréhensibles.

Les risques et les avantages de la transfusion doivent être clairement expliqués en termes simples et basés sur des allégations thérapeutiques et des données d'innocuité prouvées. Contrairement au consentement pour le don de sang, le contenu et la compréhension des risques et des avantages varient énormément pour les bénéficiaires d'une transfusion, ainsi que pour la cohérence de la documentation du processus de consentement. Les améliorations suggérées comprennent le suivi des lignes directrices cliniques publiées, la formation des cliniciens et la communication claire des données sur l'hémovigilance et les risques résiduels des services de transfusion sanguine.



Transfusion en réanimation au CHU HJRA Antananarivo

Transfusion in Resuscitation service at CHU HJRA Antananarivo

Rakoto Alson AO, Randriamampianina T, Randriamandrato TAV, Rajaonera ATH
CHU HJRA Antananarivo Madagascar

RÉSUMÉ

Introduction

Les services de réanimation figurent parmi les plus grands utilisateurs de PSL en milieu hospitalier. Les auteurs ont voulu décrire les besoins transfusionnels des patients au service de réanimation chirurgicale de l'Hôpital HU JRA à Antananarivo.

Méthodologie

Une étude rétrospective, descriptive monocentrique pendant le mois de mai 2015 a inclus les patients admis au service de réanimation chirurgicale ayant nécessité une transfusion de PSL. Les variables étudiées étaient l'âge, le sexe, l'indication clinique ainsi que le PSL utilisé.

Résultats

Sur les 197 patients hospitalisés pendant cette période, 61 ont eu besoin de transfusion de PSL soit 30,96%. Le sex ratio H/F était de 2,25. Le maximum de transfusion était retrouvé dans la tranche d'âge 60-70 ans (19,7%) puis 30-40 ans (18,03%) et 40-50 ans (16,4%).

Les principales indications étaient pour une hémorragie digestive (47,5%) suivies des situations de post opératives (37,7%).

En ce qui concerne la qualité des PSL, le CGR étaient transfusés dans 61,5% suivi du PFC dans 22,6%, du PRP dans 12,4% et du sang total dans 3,1%.

Le nombre de PSL demandé était 522 mais seulement 281 étaient livrés. Le bon de PSL était honoré seulement dans 53,8%.

Discussion

La transfusion en réanimation est souvent incontournable mais la disponibilité de PSL limite la pratique transfusionnelle. Les donneurs bénévoles réguliers au Centre National de Transfusion sanguine ne couvrent effectivement que les 25% des besoins au CHU d'Antananarivo.

Conclusion

Une mobilisation sociale doit être renforcée pour augmenter et fidéliser les donneurs bénévoles. Les services de réanimation demeurent les principaux utilisateurs de PSL à Antananarivo après les services de gynécologie obstétrique.

ABSTRACT

Introduction

Resuscitation services are among the largest users of labile blood products (LBP) in hospitals. The authors wanted to describe the transfusion needs of patients in the surgical resuscitation department of CHU JRA Hospital in Antananarivo.

Methodology

A retrospective, descriptive study conducted in May 2015 included patients admitted to the surgical resuscitation department and who required transfusion of LBP. The variables studied were age, sex, clinical indication and LBP used.

Results

Of the 197 patients admitted to hospital during this period, 61 required transfusion of LBP (30.96%). The sex ratio m / f was 2.25. The maximum transfusion was found in the age group 60-70 years (19.7%) then 30-40 years (18.03%) and 40-50 years (16.4%).

The main indications were gastrointestinal hemorrhage (47.5%) followed by postoperative situations (37.7%).

Regarding the quality of LBP, the RCC was transfused in 61.5% followed by FFP in 22.6%, PRP in 12.4% and whole blood in 3.1%. The number of LBP requested was 522 but only 281 were delivered. The LBP request was fulfilled only in 53.8%.

Discussion

Transfusion in intensive care is often unavoidable but the availability of LBP limits transfusion practice. Regular voluntary donors to the National Blood Transfusion Center only cover the 25% of the needs at Antananarivo University Hospital.

Conclusion

A social mobilization must be strengthened to increase and retain voluntary donors. Resuscitation services remain the main users of LBP in Antananarivo after obstetrics and gynecology.



Diagnosis and Reporting of Hemophilia in Africa

Diagnostic et point de la situation de l'hémophilie en Afrique

Magdy El Ekiaby, MD & Assad Haffar, MD

ABSTRACT

Hemophilia is a sex linked hereditary bleeding disorder, where males are affected and females act as carriers. There are two types of hemophilia; A due to deficiency of coagulation factor number 8 (FVIII) and B due to deficiency of coagulation factor number 9 (FIX). Hemophilia A has a global prevalence of 1/10,000 population and B is 5 times less common. Both disorders are considered rare hereditary disorders. In addition both types have 3 degrees of severity; severe, moderate and mild; where factor levels are less than 1%, 2 - 5% and 5 - 35% consecutively.

Diagnosis of hemophilia requires several elements that includes community awareness, general knowledge of health care professionals about the disease as well as the availability of specialized laboratories capable of running diagnostic tests for general hemostasis as well as specialized coagulation factor assays. In addition to the diagnosis; each country should establish a registry for the diagnosed patients. This registry can be hosted at a main hemophilia treatment center, national hemophilia society or ministry of health. The importance of the registry is that it can give accurate information to health authority about the number of patients and their related needs of health care and the procurement of their medicines, which are expensive and not easy to supply in countries with low economic resources.

Except for North African countries and South Africa; diagnosis and registry is very limited in the rest of the African continent. For example the numbers of diagnosed and registered patients in Algeria, Egypt and South Africa are 2066, 5,246 and 2124. On the other hand we find that other African countries with large population have very low diagnosed and registered numbers such as Nigeria and Ethiopia with only 203 and 175 patients.

World Federation of Hemophilia (WFH) is a non-governmental organization established in 1963 in Montreal. The organization has 127 member states and is trying to globally improve standards of care for patients with hemophilia. Its vision is “treatment for all”. To achieve this vision it has established several programs to include hemophilia care in the national health programs in its member states. These programs have 5 pillars; early diagnosis, national registry, knowledgeable health care professionals and strong patient organization.

RÉSUMÉ

L'hémophilie est un trouble de saignement héréditaire lié au sexe, où les sujets de sexe masculin sont atteints et ceux de sexe féminin agissent comme porteurs. Il y a deux types d'hémophilie; l'hémophilie A en raison de la déficience du facteur de coagulation numéro 8 (FVIII) et l'hémophilie B en raison de la déficience du facteur de coagulation numéro 9 (FIX). L'hémophilie A a une prévalence globale de 1/10 000 et l'hémophilie B est 5 fois moins fréquente. Les deux troubles sont considérés comme des troubles héréditaires rares. En outre, les deux types ont 3 degrés de gravité; sévère, modéré et léger correspondant à des niveaux de facteur inférieur à 1%, entre 2 - 5% et entre 5 - 35% respectivement.

Le diagnostic de l'hémophilie nécessite plusieurs éléments qui comprennent la sensibilisation de la communauté, les connaissances générales des professionnels de la santé sur la maladie ainsi que la disponibilité de laboratoires spécialisés capables d'effectuer des tests diagnostiques pour l'hémostase générale ainsi que des tests spécialisés de facteurs de coagulation. En plus du diagnostic, chaque pays devrait établir un registre pour les patients diagnostiqués. Ce registre peut être hébergé dans un centre principal de traitement de l'hémophilie, une société nationale de l'hémophilie ou un ministère de la Santé. L'importance du registre est qu'il peut fournir des informations précises à l'autorité sanitaire sur le nombre de patients et leurs besoins connexes en soins de santé et l'achat de leurs médicaments, qui sont chers et difficiles à acquérir dans les pays à faibles ressources économiques. En dehors des pays d'Afrique du Nord et l'Afrique du Sud, le diagnostic et l'enregistrement de l'hémophilie sont très limités dans le reste du continent africain. Par exemple, le nombre de patients diagnostiqués et enregistrés en Algérie, en Egypte et en Afrique du Sud est de 2066, 5246 et 2124. D'autre part, nous constatons que d'autres pays africains à forte population ont des taux diagnostiques et enregistrés très faibles, entre 175 et 203 patients.

La Fédération mondiale de l'hémophilie (FMH) est une organisation non gouvernementale établie en 1963 à Montréal. L'organisation compte 127 États membres et tente d'améliorer globalement les normes de soins pour les patients hémophiles. Sa vision est “un traitement pour tous”. Pour réaliser cette vision, il a mis en place plusieurs programmes visant à inclure les soins hémophiliques dans les programmes nationaux de santé de ses États membres. Ces programmes ont 5 piliers; diagnostic précoce, registre national, professionnels de la santé bien informés et forte organisation des patients.

In less affluent African Countries; WFH started since 2013 a program called Corner Stone. The aim of this program is to increase awareness about hemophilia in Sub Saharan Africa and other African countries where national programs for hemophilia care do not exist. The aim of this program is to educate health care professionals about hemophilia, establish a unit for laboratory diagnosis, a patient organization and a registry for the diagnosed patients with hemophilia. The program is running in several African countries such as Nigeria and Kenya. As a result new patients in these countries are diagnosed and registered.

Dans les pays africains moins riches, WFH a commencé depuis 2013 un programme appelé Corner Stone. Le but de ce programme est d'accroître la sensibilisation à l'hémophilie en Afrique subsaharienne et dans d'autres pays africains où les programmes nationaux de prise en charge de l'hémophilie n'existent pas. Le but de ce programme est d'éduquer les professionnels de la santé sur l'hémophilie, de créer une unité de diagnostic en laboratoire, une organisation de patients et un registre pour les hémophiles diagnostiqués. Le programme est en cours dans plusieurs pays africains tels que le Nigeria et le Kenya. En conséquence, de nouveaux patients dans ces pays sont diagnostiqués et enregistrés.



Research capacity in National Blood Service Ghana: Review of current situation, evaluation of T-REC project and recommendations

Capacité de recherche au service national du sang du Ghana: état de la situation? Evaluation du projet T-REC et recommandations

Asamoah-Akuoko L^{1,2}, Bates I², Dei E N¹, Owusu-Ofori S³, Sarkodie F³, Ansah J K¹

1. National Blood Service, Ghana
2. Liverpool School of Tropical Medicine, United Kingdom
3. Komfo Anokye Teaching Hospital, Ghana

ABSTRACT

Background

The National Blood Service Ghana (NBSG) partnered in the Transfusion Research Capacity (T-REC) project from 2011 to 2015. T-REC, funded by the European Union, aimed to strengthen research capacity in blood services in Africa. Research capacity building activities within the NBSG were initiated at the onset of the T-REC collaboration. Infrastructure establishment for research in NBSG, however, was formally initiated in July 2014. An evaluation of the project in NBSG was undertaken in May 2015 to inform future similar projects. The evaluation complements one undertaken in NBS Zimbabwe in February 2015.

Body of work

The evaluation was combined with a review of the NBSG's current research capacity and a workshop with senior NBSG staff and national stakeholders. Information was obtained from structured discussions with 47 NBSG stakeholders including students, staff and external stakeholders collaborating or regulating national research and blood service activities. The discussion guide focused on successes and challenges, and solicited suggestions for improvements to enhance Research Capacity Strengthening in the NBSG. The benchmark against which NBSG's research capacity was reviewed was adapted from one used previously to review African universities' research systems. Information on each topic was obtained from at least two different sources and any discrepancies were resolved through discussions with NBSG senior staff. Recommendations emanating from the discussions were validated during the workshop to plan the Service's next steps in strengthening its research capacity

RÉSUMÉ

Contexte

Le Service National du Sang du Ghana (SNSG) s'est associé au projet T-REC de 2011 à 2015. T-REC, financé par l'Union européenne, visait à renforcer les capacités de recherche dans les services de transfusion sanguine en Afrique. Les activités de renforcement des capacités de recherche au sein du SNSG ont débuté au début de la collaboration T-REC. La mise en place d'infrastructures pour la recherche sur les SNSG a toutefois été officiellement initiée en juillet 2014. Une évaluation du projet dans le SNSG a été entreprise en mai 2015 pour éclairer de futurs projets similaires. L'évaluation complète a été réalisée au Zimbabwe, en février 2015.

Corps de travail

L'évaluation a été combinée avec une révision de la capacité de recherche actuelle du SNSG, un atelier avec le personnel de haut niveau du SNSG et les parties prenantes nationales. L'information a été obtenue à partir de discussions structurées avec 47 parties prenantes du SNSG, y compris les étudiants, le personnel et les parties prenantes externes collaborant ou réglementant les activités nationales de recherche et de services de sang. Le guide de discussion a mis l'accent sur les réussites et les défis, et a sollicité des suggestions d'amélioration pour améliorer le renforcement des capacités de recherche dans le SNSG. Le point de référence par rapport auquel la capacité de recherche a été examinée a été adapté de celui utilisé précédemment pour examiner les systèmes de recherche des universités africaines. L'information sur chaque sujet a été obtenue d'au moins deux sources différentes et toutes les divergences ont été résolues grâce à des discussions avec les cadres supérieurs de T-REC. Les recommandations issues des discussions ont été validées lors de l'atelier afin de planifier les prochaines étapes du Service pour renforcer sa capacité de recherche

Results

T-REC had been successful in generating research interest and expertise among professional staff in NBSG and in enhancing the research ethos across the whole Service. Although it is too early to see significant impact on policies or practice from the T-REC research findings, there has clearly been strengthening of research infrastructure in NBSG including formal processes for reviewing research proposals and for taking decisions on utilizing research outputs. Key areas for improvement includes the need for better dissemination of NBSG's research priorities, closer ties with academics and their institutions, higher visibility of NBSG in the national research arena and identifying funding for NBSG research.

Closing remarks

The findings and recommendations from the review will be circulated widely, including to those who contributed information. These recommendations will be discussed across NBSG in a process led by the Research and Development department and transformed into a prioritized action plan.

Résultats

T-REC a réussi à susciter l'intérêt et l'expertise de la recherche parmi le personnel professionnel du SNSG et à améliorer l'éthique de la recherche dans l'ensemble du Service. Bien qu'il soit trop tôt pour voir un impact significatif sur les politiques ou la pratique des résultats de recherche T-REC, il y a clairement eu un renforcement de l'infrastructure de recherche dans les SNSG incluant des processus formels pour examiner les propositions de recherche et pour prendre des décisions. Les principaux domaines d'amélioration comprennent la nécessité d'une meilleure diffusion des priorités de recherche , des liens plus étroits avec les universitaires et leurs institutions, une plus grande visibilité du SNSG dans l'arène de recherche nationale et l'identification de financement pour la recherche.

Remarques finales

Les conclusions et recommandations de l'examen seront largement diffusées, y compris à celles qui ont fourni des informations. Ces recommandations seront discutées avec le SNSG dans un processus dirigé par le département de recherche et développement et transformé en un plan d'action priorisé.



Prevalence of alloantibodies in red blood cell recipients: Zimbabwe situation.

Prévalence des allo anticorps chez les receveurs de Globules rouges: situation au Zimbabwe.

George Mavunganidze¹, Sisodwa Z. Nkomo¹, Ngonidzashe Makuni¹, Prosper Dube, Garland Vera¹
National Blood Service Zimbabwe, P O Box A101, Avondale, Harare, Zimbabwe

ABSTRACT

Background

Safe and sustainable Blood Services in Africa will not be achieved unless blood recipients are screened for unexpected antibodies before transfusion is commenced. Naturally occurring Anti-A and Anti-B are the only red cell antibodies that are regularly found in normal human serum or plasma. All other antibodies are called unexpected red cell antibodies. There are two types of unexpected antibodies as follows; alloantibodies (when someone produces an antibody to an antigen that he or she lacks) and autoantibodies (when someone produces an antibody to an antigen that he or she possesses). Alloantibodies were found in 0.3% to 38% of patients or donors studied in the United States of America. Immunization to red cell antigens may result from pregnancy, transfusion, transplantation, hematopoietic progenitor cells (HPCs), or injections of immunogenic material. In some instances, no specific immunizing event can be identified whilst some antibodies are passively acquired. Currently, there is no published data available in transfusing institutions in Zimbabwe on prevalence of alloantibodies as pre-transfusion antibody screening is not routinely performed.

Aims and Objectives

To determine the prevalence of red cell alloantibody detected during pre-transfusion testing at the National Blood Service Zimbabwe (NBSZ) laboratories.

Study Design and Methods

A cross-sectional study was done at three NBSZ laboratories in three major cities in Zimbabwe (Harare, Bulawayo and Mutare). The data was retrospectively retrieved from the e-delphyn blood bank laboratory information system for the period 1 October 2012 to 31 December 2015. A total of 22 751 patients' blood samples were subjected for pre-transfusion testing. Samples were tested for ABO and Rhesus typing, antibody screening and antibody identification where antibody screening was positive. The antibody screening was done by indirect antiglobulin test (AHG). All tests were performed using the manual tube method. For antibody screening, 2-cell screening panels (SANBS) were used. The positive results were then further identified for antibody specificity by the South African National Blood Service-SANBS (9 cell panel).

RÉSUMÉ

Contexte

Les services de transfusion sanguine sûrs et durables en Afrique ne seront pas établis à moins que les receveurs de sang ne fassent l'objet d'un dépistage d'anticorps irréguliers avant le début de la transfusion. Les anticorps anti-A et anti-B d'origine naturelle sont les seuls anticorps anti-érythrocytes que l'on trouve régulièrement dans le sérum ou le plasma humain normal. Tous les autres anticorps sont appelés anticorps anti-érythrocytaires irréguliers. Il existe deux types d'anticorps irréguliers : les alloanticorps (lorsque quelqu'un produit un anticorps contre un antigène qui lui manque) et auto-anticorps (lorsque quelqu'un produit un anticorps contre un antigène qu'il possède). Des allo-anticorps ont été trouvés chez 0,3% à 38% des patients ou des donneurs étudiés aux États-Unis d'Amérique. L'immunisation contre les antigènes érythrocytaires peut résulter de la grossesse, de la transfusion, de la transplantation, de cellules progénitrices hématopoïétiques (HPC) ou d'injections de matériel immunogène. Dans certains cas, aucun événement immunisant spécifique ne peut être identifié alors que certains anticorps sont acquis passivement. Actuellement, il n'y a pas de données publiées disponibles dans les établissements de transfusion au Zimbabwe sur la prévalence des allo-anticorps car le dépistage des anticorps pré-transfusionnel n'est pas systématiquement effectué.

Buts et objectifs

Déterminer la prévalence des alloanticorps anti-érythrocytaires détectés lors des tests pré-transfusionnels dans les laboratoires du Service National du Sang du Zimbabwe (SNSZ).

Conception et méthodes de l'étude

Une étude transversale a été réalisée dans trois laboratoires du SNSZ dans trois grandes villes du Zimbabwe (Harare, Bulawayo et Mutare). Les données ont été extraites rétrospectivement du système d'information e-delphyn du laboratoire de la banque de sang pour la période du 1er octobre 2012 au 31 décembre 2015. Un total de 22 751 échantillons de sang de patients a été soumis à des tests pré-transfusionnels. Les échantillons ont été testés pour le groupe ABO et Rhésus, le dépistage des anticorps et l'identification des anticorps

Results

Antibody screening tests were positive in 79 patients (0.35%) out of 22 751 patient samples processed. The overall prevalence of alloantibodies in transfused patients was 67/22 751 (0.29%). Anti-D being the most common antibody detected 48/22 751 (0.21%) followed by anti-C (0.026%), anti-Lea (0.013%), three cold agglutinin antibodies (0.013%), anti-Cw (0.009%), anti-Leb (0.004%), anti-E (0.004%), anti-Lua (0.004%), anti-Lub (0.004%), and anti-M (0.004%). The highest prevalence of alloantibodies was observed in patients of obstetrics. Only 0.009% of the patients tested had antibodies which were clinically insignificant, Leb and M specificity.

Conclusion/ Summary

The majority of alloantibodies detected in our study were clinically significant. Therefore, pre-transfusion antibody screening on patients' sample prior to cross-match needs to be fully implemented in all transfusing institutions in Zimbabwe to ensure safe and sustainable transfusion practice in Zimbabwe. As alloimmunization complicates the transfusion outcomes, it is recommended that pre-transfusion antibody screening and issue Rhesus matched blood to patients who warrant high transfusion requirements in future.

lorsque le dépistage des anticorps était positif. La recherche d'anticorps a été effectuée par un test indirect à l'antiglobuline (AHG). Tous les tests ont été effectués en utilisant la méthode du tube manuel. Pour la recherche d'anticorps, des panels de criblage à deux cellules (SANBS) ont été utilisés. Les résultats positifs ont ensuite été davantage identifiés pour la spécificité d'anticorps par le National Blood Service-SANBS sud-africain (panel de 9 cellules).

Résultats

Les tests de dépistage des anticorps ont été positifs chez 79 patients (0,35%) sur 22 751 échantillons de patients traités. La prévalence globale des allo-anticorps chez les patients transfusés était de 67/22 751 (0,29%). L'anti-D étant l'anticorps le plus commun détecté 48/22 751 (0,21%) suivi d'anti-C (0,026%), anti-Lea (0,013%), trois anticorps anti-agglutinine (0,013%), anti-Cw (0,009%), anti-Leb (0,004%), anti-E (0,004%), anti-Lua (0,004%), anti-Lub (0,004%), et anti-M (0,004%). La prévalence la plus élevée d'allo-anticorps a été observée chez les patients du service d'obstétrique. Seuls 0,009% des patients testés avaient des anticorps cliniquement non significatifs, la spécificité de Leb et M.

Conclusion / Résumé

La majorité des allo-anticorps détectés dans notre étude étaient cliniquement significatifs. Par conséquent, le dépistage des anticorps pré-transfusionnels sur l'échantillon des patients avant la compatibilité croisée doit être pleinement mis en œuvre dans toutes les institutions de transfusion au Zimbabwe pour assurer une pratique transfusionnelle sûre et durable au Zimbabwe. Comme l'allo-immunisation complique les résultats transfusionnels, il est recommandé que le dépistage des anticorps pré-transfusionnels et la question Rhésus correspondent au sang des patients qui justifient des exigences transfusionnelles élevées à l'avenir.



Sustaining voluntary blood donation in Uganda through the Community Resource Persons (CRP) program

Soutenir le don sanguin volontaire en Ouganda par le biais du programme communautaire de ressources humaines

William Mugisha

Uganda Blood Transfusion Service (UBTS)

ABSTRACT

Background

Uganda's population today stands at 34 million people but only 0.5% donate blood which is below the WHO requirement of at least 1% for the developing world. Blood Donation in Uganda is 100% voluntary the main source being students who account for 60% of all donor blood, the rest of the community contributing only 40%. To better this situation, a novel approach was conceived in which partnerships were formed with communities by creating synergy teams that boosted voluntary blood donation through enhanced mobilization and education on blood donation. These community-based synergy teams are now known as "Community Resource Persons for blood donation or simply CRPs, implemented under "THE CRP PROGRAM". The program has led to improved collaboration between communities and the National Blood Service (UBTS) contributing to sustained blood supply in Uganda.

Aims

Uganda Blood Transfusion Service needed to broaden its blood donor base by enhancing Voluntary blood donations within its communities. To achieve this, key individuals in the community that would convey required blood donation information to the rest of the public were identified and trained. The program aimed at reducing heavy reliance on schools as the main source of blood so as to solve the problem of low blood stocks when schools close for holidays.

Methods

The CRP program was first implemented on pilot basis at one of UBTS's Blood Collection Centers.

To begin with, the area Blood Donor Recruitment Officer at the center identified suitable persons for training and engagement as CRPs employing a set of guidelines.

For future relationship with the UBTS, a memorandum of Understanding was entered into between the UBTS and small working groups of CRP's from close localities.

RÉSUMÉ

Contexte

La population de l'Ouganda s'élève aujourd'hui à 34 millions de personnes, mais seulement 0,5% donne du sang, ce qui est inférieur à l'exigence de l'OMS d'au moins 1% pour le monde en développement. Le don de sang en Ouganda est 100% volontaire, la source principale étant les étudiants qui représentent 60% de tous les dons de sang, le reste de la communauté ne contribuant qu'à 40%. Pour améliorer cette situation, une approche novatrice a été conçue dans le cadre de laquelle des partenariats ont été formés avec les communautés en créant des équipes de synergie qui ont stimulé le don de sang volontaire par une mobilisation et une éducation accrues sur le don de sang. Ces équipes de synergie à base communautaire sont maintenant connues sous le nom de "Personnes ressources communautaires pour le don de sang ou simplement CRP, mises en œuvre dans le cadre du" PROGRAMME CRP". Le programme a conduit à une amélioration de la collaboration entre les communautés et le Service national du sang (UBTS) contribuant à l'approvisionnement en sang durable en Ouganda.

Objectifs

Le Service de transfusion sanguine de l'Ouganda devait élargir sa base de donneurs de sang en améliorant les dons de sang volontaires dans ses communautés. Pour ce faire, des personnes clés de la communauté qui transmettaient les informations requises sur le don de sang au reste du public ont été identifiées et formées. Le programme visait à réduire la forte dépendance à l'égard des écoles en tant que principale source de sang afin de résoudre le problème des stocks de sang trop bas lorsque les écoles ferment leurs portes pour les vacances.

Méthodes

Le programme CRP a été mis en œuvre pour la première fois dans un des centres de collecte de sang de l'UBTS.

Pour commencer, l'agent de recrutement des donneurs de sang du centre a identifié des personnes aptes à la formation et à l'engagement comme CRP en utilisant un ensemble de directives.

A year later, the program was rolled out throughout the entire country. This involved dividing the country into two operational zones and to be headed by coordinators who worked hand in hand with Regional Blood Bank Directors.

Results

2500 community resource persons were trained and engaged as community educators and mobilizers. Blood collection in the pilot area increased from 730 to 1100 units per year. Thus far, results from the rest of the country indicate that blood collection over similar periods has improved significantly between previous years (210,000 Units) and this year we are set to collect 342,000 units of blood that includes collection from CRP (100,000 units)

Discussion

UBTS collects blood from five major sources namely; secondary schools and tertiary institutions which are the primary sources of blood, with the rest coming from secondary sources such as corporate institutions, faith based organizations, and community based blood donor clubs. However, Heavy reliance on students persists leading to dwindling stocks with shortages in hospitals when schools close for holidays. This problem led the UBTS to initiate a new approach to enhance community participation in blood donation. The aim was to develop a strong blood donor base in the communities so as to attain sustained adequacy in blood supply.

Conclusion

The CRP program is a renewed formal promise to bring about sustained adequacy in blood supply in the country throughout the year.

Pour les relations futures avec l'UBTS, un mémorandum d'accord a été conclu entre l'UBTS et de petits groupes de travail de CRP de localités proches.

Un an plus tard, le programme a été déployé dans tout le pays. Cela impliquait de diviser le pays en deux zones opérationnelles et d'être dirigé par des coordinateurs qui travaillaient main dans la main avec les directeurs régionaux des banques de sang.

Résultats

2 500 personnes-ressources communautaires ont été formées et engagées en tant qu'éducatrices et mobilisatrices communautaires. La collecte de sang dans la zone pilote est passée de 730 à 1100 unités par an. Jusqu'à présent, les résultats du reste du pays indiquent que la collecte de sang au cours de périodes similaires s'est améliorée de manière significative entre les années précédentes (210 000 unités) et cette année, nous allons collecter 342 000 unités de sang.

Discussion

UBTS recueille le sang de cinq sources principales à savoir; les écoles secondaires et les établissements d'enseignement supérieur qui sont les principales sources de sang, le reste provenant de sources secondaires telles que les institutions commerciales, les organisations confessionnelles et les clubs communautaires de donneurs de sang. Cependant, une forte dépendance vis-à-vis des étudiants persiste, entraînant une diminution des stocks avec des pénuries dans les hôpitaux lorsque les écoles ferment pour les vacances. Ce problème a conduit l'UBTS à initier une nouvelle approche pour améliorer la participation communautaire au don de sang. L'objectif était de développer une forte base de donneurs de sang dans les communautés afin d'atteindre une adéquation durable dans l'approvisionnement en sang.

Conclusion

Le programme CRP est une promesse formelle renouvelée d'assurer une adéquation durable de l'approvisionnement en sang dans le pays tout au long de l'année.



Aspects éthiques dans la recherche

Ethical aspects in research

Claude Tayou Tagny,

Faculty of Medicine and Biomedical Sciences, University of Yaounde I, Cameroon

RÉSUMÉ

La recherche sur l'être humain se fait sur une personne vivante dans le but d'obtenir des données par le biais d'une intervention ou l'interaction avec ses informations privées. Ceci doit réduire au maximum la probabilité de préjudice (physique, psychologique, social ou économique) survenant à la suite de la participation à un projet de recherche. La probabilité ne devrait pas être plus grande que ce qui est habituellement rencontré dans la vie quotidienne ou à l'examen habituel.

L'histoire révèle qu'en raison d'une triste période d'essais des médecins nazis, la Déclaration d'Helsinki en 1964 et sa révision en 1975 étaient essentielles pour définir et surveiller le respect des principes éthiques pour la recherche médicale impliquant des sujets humains. Ces principes sont généralement décrits en 3 sections principales: le respect des personnes, le bénéfice et la justice. Des considérations particulières pour les sujets vulnérables sont essentielles lors de recherche du fait de leur statut spécial (enfants, prisonniers, femmes enceintes, mentalement incomptétents etc ...).

Lors d'une recherche sur le corps humain, les enquêteurs ont d'énormes responsabilités et doivent les accepter pour tous les aspects de la recherche, y compris les conflits d'intérêts. Toutes les recherches doivent être soumises à un comité d'examen institutionnel (comité d'éthique), local ou national qui déterminera et certifiera que le projet est conforme aux règlements et aux politiques. Un point critique de l'examen est les règles Belmont pour des sujets humains et les conflits d'intérêts pour le bénéfice des chercheurs.

ABSTRACT

Human subject in research involves a living individual in order to obtain data through intervention or interaction with the individual or identifiable private information. It must reduce at its maximum the probability of harm (physical, psychological, social, or economic) occurring as a result of participation in a research study. The probability should not be greater than what is ordinarily encountered in daily life or usual examination.

History reveals that due to sad period of Nazi doctors trials, Declaration of Helsinki in 1964 and its revision in 1975 were essentials to define and monitor respect of ethical principles for medical research involving human subjects. These are usually described in 3 main sections: respect for persons, beneficence and justice. Special considerations for vulnerable subjects are essential when considering their particular status (children, prisoners, pregnant women, mentally incompetent etc...).

When conducting a research on human bodies, investigators have huge responsibilities and must accept them for all aspects of the research including conflict of interest. All research must be submitted to an institutional review board, local or national that will determine and certify that the project conforms to regulations and policies. Critical points of the review are Belmont rules for human subjects and conflict of interest for researchers' benefits.



Blood transfusion research experiences in a resource-limited setting: difficulties and challenges

Evaluation de la recherche en transfusion sanguine dans un contexte de ressources limitées : difficultés et défis

Mbanya DN

Faculty of Medicine & Biomedical Sciences, University of Yaoundé I, and the Yaoundé University Teaching Hospital, Cameroon

Key words

Blood transfusion; research challenges; resource-limited setting

ABSTRACT

Context

Blood transfusion therapy is indispensable, but requires that blood be safe at all levels of the blood safety chain. Research has contributed significantly towards blood safety in various ways as it provides relevant information that influence transfusion practices as well as transfusion-related policies and their implementation. However, there are several difficulties and challenges associated with research activities, especially in resource-limited settings. These may range from the absence of policies, legislations and government commitment, to financial, logistics, structural and organizational issues.

Analysis

While we have impacted transfusion activities positively through our research findings in the Yaoundé University Teaching Hospital, in Cameroon, we have also faced various challenges and difficulties. Because there is no national Blood Transfusion Service in Cameroon, there is no formal organized arm in transfusion research. Hence, research activities tend to be uncoordinated in our setting. Thus, each structure may carry out research relevant to its purposes. For example, in evaluating reduction in residual risk for HIV infection, or screening for hepatitis C in blood donors in the Yaoundé University Teaching Hospital, we sought and obtained external collaborative assistance both in obtaining appropriate research reagents, as well as in exporting donor samples for genomic testing abroad. Occasionally, even when financial resources were available, certain products could not be directly imported into the country because of the absence of sales representatives and other administrative procedures. And yet in other instances, relevant techniques were either unavailable or not mastered locally. Thus, the major challenges identified include the lack of trained and motivated personnel geared towards research; the inappropriateness of infrastructure, the absence of collaborative work, as well as financial constraints, responsible for several other setbacks.

Mots clés

Transfusion sanguine; Défis de la recherche; Contexte de ressources limitées

RÉSUMÉ

Contexte

La transfusion sanguine est indispensable mais nécessite que le sang soit sécurisé à tous les niveaux de la chaîne de sécurité transfusionnelle. La recherche a contribué significativement à la sécurité transfusionnelle de plusieurs manières car elle fournit des informations pertinentes qui influencent la pratique transfusionnelle, ainsi que les politiques transfusionnelle et leur mise en œuvre. Cependant, il existe quelques difficultés et défis liés aux activités de recherche, en particulier dans les pays à ressources limitées. Cela va de l'absence de politique, l'absence de législation, et le manque de volonté du gouvernement, aux questions financières, logistiques, structurelles et organisationnelles.

Analyse

Bien que nous ayons eu un impact positif sur les activités de transfusion sanguine grâce aux résultats de nos recherches au Centre Hospitalier Universitaire de Yaoundé au Cameroun, nous avons tout de même été confrontés à de nombreux défis et difficultés. Parce qu'il n'existe pas de Centre National de Transfusion Sanguine au Cameroun, il n'y a aucune organisation officielle de la recherche en Transfusion Sanguine. Par conséquent, les activités de recherche ont tendance à ne pas être coordonnées dans notre contexte. Ainsi, chaque structure peut effectuer des recherches pertinentes à ses propres fins. Par exemple, pour l'évaluation de la réduction du risque résiduel pour l'infection à VIH ou pour le dépistage de l'hépatite C chez les donneurs de sang au Centre Hospitalier Universitaire de Yaoundé, nous avons demandé et obtenu une assistance externe aussi bien pour l'obtention des réactifs de recherche appropriés que pour l'envoie, des échantillons des donneurs pour les tests génomiques à l'étranger. Parfois, même lorsque les ressources financières étaient disponibles, certains produits ne pouvaient pas directement être importés à l'intérieur du pays à cause de l'absence de représentant de la firme ou encore d'autre procédure administrative.

Conclusions

Targeted staff training, North-South partnerships, local collaborative work and with professional bodies as well as increased government commitment will contribute significantly in organizing transfusion-related research in these settings.

Cependant, dans d'autres cas, les techniques appropriées n'étaient pas disponibles ou pas maitrisées localement. Ainsi, les principaux défis identifiés sont le manque de personnel qualifié et motivé orientés vers la recherche; l'inadaptation des infrastructures, l'absence de collaboration dans le travail, ainsi que des contraintes financières, responsables de plusieurs autres revers.

Conclusion

La formation ciblée du personnel, les partenariats Nord-Sud, la collaboration locale et avec les organismes professionnels ainsi que l'engagement accru du gouvernement contribueront de manière significative à organiser la recherche liée à la transfusion dans notre contexte.



Challenges providing safe blood in resource-limited settings: Testing for TTIs in a Hospital Blood Bank of Yaoundé, Cameroon

Défis de l'approvisionnement en sang sécurisé dans les milieux à ressources limitées: Recherche des ITT dans une banque de sang hospitalière de Yaoundé au Cameroun

Mbanya DN¹, Tayou Tagny C¹, Nduumba Mintya A¹

Faculty of Medicine & Biomedical Sciences, University of Yaoundé I, and Yaoundé University Teaching Hospital, Cameroon

Key words

Blood safety, transfusion transmissible infections, Blood Bank

ABSTRACT

Introduction and context

There are several challenges providing safe blood in resource-limited settings. The absence of appropriate infrastructures and logistics, the lack of blood donor recruitment and retention programmes as well as the high prevalence of transfusion transmissible infections (TTI) make blood safety an issue of concern in many resource-limited settings, especially of sub-Saharan Africa. This is further compromised by the minimal resources available for screening for these TTIs. Rapid diagnostic tests are mostly available and used in these settings, though not always the best option. In Cameroon, a National Blood Transfusion Program was only recently created, and while waiting for the implementation of its recommendations, the Hospital Blood Banking system is still widely used.

Mots clés

Sécurité transfusionnelle, Infections transmissibles par transfusion, Banque de sang

RÉSUMÉ

Introduction et contexte

Il y a plusieurs défis à l'approvisionnement en sang sécurisé dans les milieux aux ressources limitées. L'absence d'infrastructures et de logistique appropriés, le manque de recrutement et de fidélisation des donneurs de sang ainsi que la forte prévalence des infections transmissibles par transfusion (ITT) font de la sécurité transfusionnelle un sujet de préoccupation dans de nombreux milieux à ressources limitées, en particulier en Afrique sub-saharienne. Tout cela est davantage compromis par les ressources minimales disponibles pour le dépistage de ces ITT. Les tests de diagnostics rapides sont pour la plupart disponibles et utilisés dans ce contexte mais ne sont pas toujours la meilleure option. Au Cameroun, un programme national de transfusion sanguine a été récemment créé, et en attendant la mise en œuvre de ses recommandations, le système de banque de sang hospitalière est encore largement utilisé.

Your Partner in Blood Management Equipment and Consumables



SSEM Mthembu Medical (Pty) Ltd
is a leading distributor of electro-medical devices and medical consumables throughout Southern Africa.

SSEM boasts a full portfolio of quality blood management equipment and consumables.



■ Blood Collection Tubes and Needles



■ Blood Bags and Blood Collection Equipment



■ Blood Collection Chairs



Johannesburg
011 430-7000
Cape Town
021 983-1300

East London
043 727-1241
Durban
031 266-5518

Port Elizabeth
041 363-4928
Bloemfontein
051 448-2183

Sharecall
086 111 7736
Website
www.ssemthembu.co.za

..... *The Pulse of Technology*



Issue

In the quest to provide safe blood, the Blood Bank of the Yaoundé University Teaching Hospital (YUTH) has taken various measures over the years, with evident improvement in some blood safety markers. For example, the prevalence of various TTI has dramatically decreased over the years as will be discussed in the presentations. These measures have included an increase in mobile collections of blood from voluntary donors, in-house training of our staff and external training where available. The stringent use of documentation and standard operating procedures, as well as subscription to External Quality Assurance Schemes; collaborative studies and advocacy using research findings have all been indispensable aids. Nevertheless, this has not been without difficulties and challenges. Maintaining a sustainable supply of good quality reagents has been challenging, besides obtaining and retaining appropriately trained staff who are frequently muted to other services. On the other hand frequent water and power cuts complicate storage issues.

Conclusions

Even with minimal resources, the onus to provide safe blood remains and efforts must be relentless to ensure this.

Problématique

Dans le souci de fournir du sang sécurisé, la banque de sang du Centre Hospitalier Universitaire de Yaoundé (CHUY) a pris diverses mesures au fil des années, avec une amélioration évidente dans certains marqueurs de sécurité transfusionnelle. Par exemple, la prévalence des différentes ITT a considérablement diminué au fil des ans comme on le verra dans les présentations. Ces mesures ont inclus une augmentation des collectes mobiles de sang provenant de donneurs bénévoles, la formation interne de notre personnel et la formation externe selon les disponibilités. L'utilisation rigoureuse de la documentation et des procédures opératoires standards, l'abonnement à des programmes d'Assurance Qualité Externe, les études en partenariat et les plaidoyers sur la base des résultats des recherches, tous ont été des supports indispensables. Néanmoins, cela n'a pas été sans difficultés et défis. Le maintien d'un approvisionnement durable de réactifs de bonne qualité a été difficile, de même qu'obtenir et conserver les personnels qualifiés car ceux-ci sont fréquemment mutés dans d'autres services. D'autre part les coupures fréquentes d'eau et d'électricité compliquent les problèmes de stockage.

Conclusion

Même avec un minimum de ressources, l'obligation de fournir du sang sécurisé est présente et des efforts doivent être constants pour cela.



Blood safety and availability in Africa: current status

Sécurité et disponibilité du sang en Afrique: état actuel

Loua A.

WHO Regional Office for Africa, Brazzaville, Congo

Key words

Africa, WHO, GDBS, blood safety and availability

ABSTRACT

Blood transfusion is life-saving in many circumstances in Africa, namely: hemorrhage with complications related to pregnancy and childbirth, children suffering of severe anemia due to malarial and malnutrition, victims of trauma and patients suffering of other acute or chronic pathologies. When the safe blood and blood products are not available, the development and success of some initiatives, such as the achievement of health-related sustainable development goals, universal health coverage and the reproductive maternal newborn and child health, are limited. In order to improve blood safety, WHO has adopted several resolutions that urged Members States to take provisions for the availability, safety and quality of blood and blood products. To strengthen the blood transfusion services, WHO has also developed recognized international norms and standards, guidelines, assessment tools, effective strategies for screening of blood; and has supported the training of stakeholders involved in blood safety.

The objectives of this presentation are to describe the current status of blood safety and availability in Africa in order to share best practices, identify challenges and define priority actions to be undertaken for improvement of blood safety in the Africa Region. This status is based on the 2013 data using the questionnaire on the Global Database on Blood Safety (GDBS). These data were collected from August 2015 to February 2016, analysed and compared to the indicators previously published in the report of 2010 Survey.

A total number of 4.4 million units of blood were collected giving a donation rate of 4.75 per 1000 inhabitants of the annual requirements of blood and blood products. In 21 countries, at least 80% of blood donations were collected from voluntary non-remunerated blood donations. Regarding the screening of transfusion transmitted infections, 44 countries were conducting 100% HIV testing of all blood units, while 42 countries did so for HBV and HCV and 40 for syphilis. The proportion of blood units transfused as whole blood was 26.1%, as red cell concentrate 53.4% and as fresh frozen plasma 6.4%. With regard to the plasma derived medicinal products, in 45 countries out of 46, they are imported from abroad.

Mots clés

Afrique, OMS, GDBS, sécurité et disponibilité du sang

RÉSUMÉ

La transfusion sanguine sauve des vies dans de nombreuses circonstances en Afrique, notamment en cas d'hémorragies liées à la grossesse et à l'accouchement, chez les enfants souffrant d'anémie sévère due au paludisme et à la malnutrition, chez les victimes de traumatismes et patients souffrant d'autres pathologies aiguës ou chroniques. Lorsque le sang et les produits sanguins sûrs ne sont pas disponibles, le développement et le succès de certaines initiatives, telles que la réalisation des objectifs de développement durable liés à la santé, la couverture sanitaire universelle et la santé reproductive des nouveau-nés et des enfants sont limités. Afin d'améliorer la sécurité transfusionnelle, l'OMS a adopté plusieurs résolutions exhortant les États Membres à prendre des dispositions concernant la disponibilité, la sécurité et la qualité du sang et des produits sanguins. Pour renforcer les services de transfusion sanguine, l'OMS a également élaboré des normes et règles internationales reconnues, des directives, des outils d'évaluation, des stratégies efficaces pour le dépistage du sang et a soutenu la formation des intervenants impliqués dans la sécurité du sang.

Les objectifs de cette présentation sont de décrire l'état actuel de la sécurité et de la disponibilité du sang en Afrique afin de partager les meilleures pratiques, identifier les défis et définir les actions prioritaires à entreprendre pour améliorer la sécurité du sang dans la Région Afrique. Cet état des lieux est basé sur les données de 2013 en utilisant le questionnaire de la base de données mondiale sur la sécurité du sang (GDBS). Ces données ont été collectées d'août 2015 à février 2016, analysées et comparées aux indicateurs précédemment publiés dans le rapport de l'enquête 2010.

Au total, 4,4 millions d'unités de sang ont été collectées, ce qui donne en besoins annuels en sang et en produits sanguins un taux de don de 4,75 pour 1000 habitants. Dans 21 pays, au moins 80% des dons de sang provenaient de dons de sang volontaires non rémunérés. En ce qui concerne le dépistage des infections transmissibles par transfusion, 44 pays effectuaient un test VIH à 100% de toutes les unités de sang, tandis que 42 pays le faisaient pour le VHB et le VHC et 40 pour la syphilis.

Despite the progress made, significant challenges still remain in Africa. Indeed, strategies to increase the collection of blood from voluntary blood donors have limitations; the funding of blood safety and expenditures mechanisms are inadequate in most countries and the Ebola outbreaks highlighted the weak capacities of national blood services to make available the appropriate blood products. These challenges call for concrete measures, such as the strong advocacy by all partners and commitment from governments, updating of guidelines taking into account the emerging and re-emerging infections and strengthening networks for sharing best practices on blood safety to ensure blood safety and availability in Africa.

La proportion d'unités de sang transfusées sous forme de sang total était de 26,1%, de 53,4% pour le concentré de globules rouges et de 6,4% plasma frais congelé. En ce qui concerne les médicaments dérivés du plasma, ils sont importés de l'étranger dans 45 pays sur 46.

Malgré les progrès réalisés, d'importants défis demeurent en Afrique. En effet, les stratégies visant à augmenter la collecte de sang par des donneurs de sang volontaires ont des limites; le financement de la sécurité du sang et des mécanismes de dépenses est inadéquat dans la plupart des pays et les flambées d'Ebola ont mis en évidence les faibles capacités des services de transfusion sanguine nationaux à mettre à disposition les produits sanguins appropriés. Ces défis appellent des mesures concrètes, telles que le plaidoyer solide de tous les partenaires et l'engagement des gouvernements, la mise à jour des lignes directrices tenant compte des infections émergentes et réémergentes et le renforcement des réseaux pour partager les meilleures pratiques en matière de sécurité transfusionnelle.



Optimising the Donor's Gift by implementing quality systems that ensure the suitability of Plasma for Fractionation and Plasma Derived Medicines for Patients

Optimiser le don du donneur en mettant en œuvre des systèmes de qualité qui garantissent l'adéquation du plasma pour le fractionnement et des médicaments dérivés du plasma pour les patients

Pam Larkin,

Head: Strategic Resources and Market Development, National Bioproducts Institute

ABSTRACT

There are distinct public health and economic benefits to strengthening blood transfusion services and making good use of the resultant improved quality fresh frozen plasma (FFP). Not least of these is that it allows the optimisation of the donor's gift in pursuit of delivering essential medicines that improve patient care. Plasma derived medicinal products (PDMP) are needed to treat a variety of bleeding and immunological disorders and to prevent infectious diseases. One way to ensure the availability of PDMP is to fractionate plasma that is surplus to therapeutic FFP requirements.

Plasma recovered from whole blood donations is a major resource for countries seeking to access products, but failure to achieve quality standards set by regulators is a major cause for non-usage of this plasma. Plasma for fractionation should meet the quality and safety criteria necessary as a starting material for the manufacture of PDMP. It should comply with the requirements of the fractionator and those of the medicines regulatory authorities involved. Ensuring the traceability of plasma between blood plasma donations and final plasma products are key considerations. Demonstrable and documented evidence of key quality systems are essential including donor selection, blood collection, blood processing into components (plasma), testing of blood products, storage and cold chain management.

The AfsBT Step-Wise accreditation programme can make a significant contribution towards reaching requisite quality standards in Blood Establishments in Africa. Over and above these, fractionators must ensure that any additional quality requirements set by regulators for plasma for fractionation are also met in order secure regulatory approval. The WHO and WHO Afro region are also playing an important role in promoting regulatory harmonisation to enable access. IPFA by facilitating meetings of fractionators and plasma providers add to the overall effort. Preparing plasma that meets international quality requirements for fractionation also enhances the quality and safety of all blood components and contributes to better patient care.

RÉSUMÉ

La santé publique et les avantages économiques du renforcement des services de transfusion sanguine et de la bonne utilisation du plasma frais congelé (PFC) ainsi obtenu sont distincts. L'un des plus importants est que cela permet d'optimiser le don du donneur dans la recherche de médicaments essentiels qui améliorent les soins aux patients. Les médicaments dérivés du plasma (MDP) sont nécessaires pour traiter une variété de troubles hémorragiques et immunologiques et pour prévenir les maladies infectieuses. Un moyen d'assurer la disponibilité du MDP est de fractionner le plasma qui est excédentaire par rapport aux exigences thérapeutiques de la PFC.

Le plasma récupéré à partir de dons de sang total est une ressource majeure pour les pays cherchant à accéder aux produits, mais l'incapacité à atteindre les normes de qualité fixées par les régulateurs est une cause majeure de non utilisation de ce plasma. Le plasma destiné au fractionnement doit répondre aux critères de qualité et de sécurité nécessaires en tant que matière première pour la fabrication du MDP. Il doit être conforme aux exigences du fractionneur et à celles des autorités de réglementation des médicaments concernées. Assurer la traçabilité du plasma entre les dons de plasma sanguin et les produits plasmatiques finaux sont des considérations clés. Des preuves démontrables et documentées des principaux systèmes de qualité sont essentielles, y compris la sélection des donneurs, la collecte de sang, le traitement du sang dans les composants (plasma), les tests de produits sanguins, le stockage et la gestion de la chaîne du froid.

Le programme d'accréditation par étapes de la SATS peut contribuer de manière significative à l'atteinte des normes de qualité requises dans les établissements de transfusion sanguine en Afrique. En plus de cela, les fractionneurs doivent s'assurer que toutes les exigences de qualité supplémentaires fixées par les régulateurs pour le plasma pour le fractionnement sont également satisfaites afin de sécuriser l'approbation réglementaire. La région afro de l'OMS et de l'OMS joue également un rôle important dans la promotion de l'harmonisation réglementaire pour permettre l'accès. L'IPFA en facilitant les réunions des fractionneurs et des fournisseurs de plasma ajoute à l'effort global. La préparation de plasma répondant aux exigences internationales de qualité en matière de fractionnement améliore également la qualité et la sécurité de tous les composants sanguins et contribue à améliorer les soins aux patients.



Home grown research in SSA: the Role of a Transfusion Research Agenda

Expertise locale de recherche en Afrique subsaharienne : Rôle d'un Programme de Recherche Transfusionnelle

Shirley Owusu Ofori,

ABSTRACT

Without home-grown expertise to initiate and carry out high quality research, the capacity of blood transfusion services in sub-Saharan Africa to produce context-specific evidence to inform policy and practice is limited.

The need for more local research in African blood services; has been the loud message from national blood services in Africa since 2008. The Mombasa meeting of experts and practitioners acknowledged that and set out to define priority areas for transfusion research in SSA. The research agenda developed in 2008; was used to seek for funding for T-REC project; an international group of researchers and blood service managers who collaborated to strengthen research capacity for blood transfusion in SSA. From 2011-2015, T-REC partners have successfully worked together to undertake a number of research projects within the 2008 priority areas and have made this happen in Ghana and Zimbabwe.

A revised research agenda has been developed in Pretoria by African researchers and blood service staff with international colleagues in 2015. Few thoughts shared by African health professionals who attended this event were, ‘Inadequate capacity for undertaking health research in Africa badly affects the ability of policymakers and governments to have locally relevant evidence to guide their work and help save lives’ and ‘Health professionals are not research-oriented, but rather service-oriented and they lack the necessary skills to undertake health research’. The meeting concluded that blood services had similar problems and the following emerging challenges were agreed upon:

1. An urgent need to investigate pragmatic and culturally-sensitive approaches to blood donor recruitment.
2. A persistent lack of good evidence on the costs and effectiveness of different blood service models.
3. A critical need for appropriate IT systems to manage and optimize blood stocks and blood donor recruitment and tracking.
4. Much to be gained by sharing information and tools and by collaborating to share successes and avoid duplication of effort.

RÉSUMÉ

Sans expertise locale capable d'initier et de mener des recherches de haute qualité, la capacité des services de transfusion sanguine en Afrique sub-saharienne à produire des données spécifiques au contexte pour éclairer les politiques et la pratique est limitée.

La nécessité d'une recherche plus locale dans les services de sang africain a été le message fort des services nationaux de transfusion sanguine en Afrique depuis 2008. La réunion de Mombasa qui a rassemblé des experts et des praticiens a reconnu cela et a défini les domaines prioritaires pour la recherche transfusionnelle en Afrique subsaharienne. Le programme de recherche développé en 2008 a été utilisé pour chercher un financement pour le projet T-REC, un groupe international de chercheurs et de responsables de services de sang qui ont collaboré pour renforcer la capacité de recherche pour la transfusion sanguine en Afrique subsaharienne. De 2011 à 2015, les partenaires T-REC ont travaillé ensemble avec succès pour entreprendre un certain nombre de projets de recherche dans les domaines prioritaires de 2008 et ont rendu cela possible au Ghana et au Zimbabwe.

Un programme de recherche révisé a été développé à Pretoria par les chercheurs africains et le personnel de service de sang avec des collègues internationaux en 2015. Quelques réflexions partagées par les professionnels de santé africains qui ont assisté à cet événement étaient: “La capacité d'action insuffisante pour entreprendre la recherche en santé en Afrique affecte gravement la capacité des décideurs et des gouvernements d'avoir des preuves pertinentes au niveau local pour guider leur travail et contribuer à sauver des vies” et “les professionnels de la santé sont pas orienté vers la recherche, mais sont plutôt axé sur le service et ils ne possèdent pas les compétences nécessaires pour entreprendre la recherche en santé”. La réunion a conclu que les services de sang avaient des problèmes similaires et les nouveaux défis suivants ont été approuvés:

1. Un besoin urgent d'enquêter sur des approches pragmatiques et culturellement sensibles pour le recrutement des donneurs de sang.
2. Un manque persistant de données probantes sur les coûts et l'efficacité des différents modèles de services de sang.
3. Un besoin critique en logiciels informatiques appropriés pour gérer et optimiser les stocks de sang de même que le recrutement et le suivi des donneurs de sang.
4. Beaucoup à gagner en partageant les informations et les outils et en collaborant pour partager les réussites et éviter le double emploi.

The new agenda of burning issues highlighted fell under themes with research questions under each theme. The broad themes are namely:

1. Biological safety
2. Blood donors and donation
3. Hospital management of blood and blood transfusions
4. Adequate supplies and equitable distribution of blood
5. Transfusion systems and sustainable financing

A lack of research funding opportunities targeted specifically towards blood transfusion should and can be addressed to be able to carry out identified topics of need. With an agenda such as this outlined by experts, it therefore becomes imperative that prospective SSA transfusion researchers earnestly seek funding with relevant areas; from National Governments, Donor Organisations and any possible funding agency to support local research.

Le nouvel ordre du jour des questions brûlantes et actuellement mises en exergue est tombé sous thèmes avec des questions de recherche pour chaque thème. Les grands thèmes sont notamment:

1. La Sécurité biologique
2. Les donneurs de sang et le don
3. Gestion du sang et des transfusions sanguines à l'Hôpital
4. Des approvisionnements adéquats et une répartition équitable du sang
5. Les Systèmes de transfusion et le financement durable

Un manque de possibilités de financement de recherche ciblées spécifiquement vers la transfusion sanguine doit et peut être examiné pour être en mesure de mener à bien les sujets relatifs aux besoins. Avec un ordre du jour tel que celui décrit par les experts, il devient donc impératif que les futurs chercheurs de transfusion ASS cherchent ardemment le financement des domaines correspondants; des gouvernements nationaux, des organisations de donneurs de sang et tout autre organisme de financement possible pour soutenir la recherche locale.



Contribution of pathogen reduction technologies to blood components safety - the Belgian experience

Contribution des technologies de réduction des pathogènes à la sécurité des composants sanguins - l'expérience Belge

Najdovski T¹, de Valensart N¹

1. Belgian Red Cross – Service du Sang

ABSTRACT

Background

Pathogen Reduction Technologies (PRT) for some Blood Components (BC) like plasma (PL) or platelets concentrates (PC) are commercially available almost since decades. PRT contributed significantly to reduction of transfusion Transmitted Infections (TTI) especially Bacterial Infections due to contaminated PC.

Aims

Belgian Red Cross Service du Sang introduced PRT for PC in 2009. This study gives a summary of the Belgian experience and makes the point on platelet yields and costs of the technologies. Furthermore the situation if PRT for Whole Blood (WB), Red Blood Cells and PL is summarised.

Methods

Since May 2009, Belgian Red Cross introduced PRT for PC using Intercept treatment set from Cerus. This technology uses Amotosalen a psoralen derived compound activated by UVA. The process data have been summarised and processing time, platelet yields and QC data are analysed. Hemovigilance data are reported.

Results

Since May 2009, 175000 PC have been produced by Belgian Red Cross Service du Sang. 105000 are apheresis platelets and WB derived PC obtained by pooling 6 buffy coats. 149000 PC (85%) were PRT Treated and have been issued to 43 Belgian hospitals. PRT treatment process causes a volume loss of 35 ml in average per PC and consequently a loss of approximately 0.5×10^{11} platelets. Platelets are produced and PRT processed within 18 to 36 hours after collection. PRT treatment contributes to this processing time for at least 6 hours causing a delay in platelet availability for issuing to hospitals.

RÉSUMÉ

Contexte

Les technologies de réduction des agents pathogènes (PRT) pour certains types de plasma sanguin (PL) ou de concentrés plaquettaires (PC) sont disponibles dans le commerce depuis des décennies. La PRT a contribué de manière significative à la réduction des infections transmissibles par transfusion (ITT), en particulier des infections bactériennes dues aux PC contaminés.

Objectifs

La Croix-Rouge belge du Service du Sang a introduit le PRT pour PC en 2009. Cette étude donne un résumé de l'expérience belge et fait le point sur les rendements plaquettaires et les coûts des technologies. En outre, la situation si PRT pour sang total (WB), globules rouges et PL est résumée.

Méthodes

Depuis mai 2009, la Croix-Rouge belge a introduit le PRT pour PC en utilisant le kit de traitement Intercept de Cerus. Cette technologie utilise Amotosalen, un composé dérivé du psoralène activé par les UVA. Les données du procédé ont été résumées et le temps de traitement, les rendements en plaquettes et les données de CQ sont analysés. Les données d'hémovigilance sont rapportées.

Résultats

Depuis mai 2009, 175000 PC ont été produits par la Croix-Rouge belge Service du Sang. 105000 sont des plaquettes d'aphérèse et du PC dérivé de WB obtenu en regroupant 6 couches leucocytaires. 149000 PC (85%) ont été traités par PRT et ont été délivrés à 43 hôpitaux belges. Le traitement par PRT provoque une perte de volume de 35 ml en moyenne par PC et par conséquent une perte d'environ $0,5 \times 10^{11}$ plaquettes.

Hemovigilance data for this period reported 0 bacterial infection and 0 TTI caused by PRT treated PC (<1/149000).

Summary / Conclusions

PRT treatment for PC was successfully introduced in Belgium in May 2009. The Intercept treatment caused loss of platelets yield in PC of approximately 7 to 15% compared to untreated compound and an additional processing time. Nevertheless PRT treated platelets contributed to significantly reduce the risk of bacterial infections caused by PC from 1/38000 to <1/149000.

Les plaquettes sont produites et traitées PRT dans les 18 à 36 heures après le prélèvement. Le traitement PRT contribue à ce temps de traitement pendant au moins 6 heures, ce qui retarde la disponibilité des plaquettes pour les hôpitaux. Les données d'hémovigilance pour cette période ont rapporté 0 infection bactérienne et 0 TTI causée par un CPR traité par PRT (<1/149000).

Résumé / Conclusions

Le traitement PRT pour PC a été introduit avec succès en Belgique en mai 2009. Le traitement Intercept a entraîné une perte de plaquettes en PC d'environ 7 à 15% par rapport au composé non traité et un temps de traitement supplémentaire. Néanmoins, les plaquettes traitées par PRT ont contribué à réduire de manière significative le risque d'infections bactériennes causées par le PC de 1/38000 à <1/149000.

GENERAL INFORMATION



AfSBT Step-Wise Accreditation Programme Overview

Claude Tayou Tagny

PRINCIPLE

The AfSBT Step-Wise Accreditation Programme (SWAP), has been implemented with the goal of maintaining and enhancing the quality and safety of blood transfusion in Africa. The accreditation programme is based on Standards prepared by a sub-group of the Task Team for Accreditation established by AfSBT.

Accreditation by the AfSBT provides formal recognition that the blood transfusion facility meets all the requirements of the stipulated step of the *AfSBT Standards: Step-Wise Accreditation Programme (ACR-R01)*. The competence of the facility to perform the functions

to be accredited will be assessed through a formal process designed to show that the functions routinely satisfy the stipulated criteria and that the documented Quality System is fully implemented to support these functions.

The programme takes cognisance of the fact that blood services operate at different levels of development and therefore cannot be inspected for accreditation purposes at the same level. The step-wise system enables facilities to progress from basic quality and operational requirements to an intermediate stage then to full accreditation at international standard.

BENEFITS

1. The reputation of the organization is enhanced internationally, particularly amongst its peers.
2. Accreditation provides visible evidence of the organization's commitment to quality and to the delivery of safe and effective blood components.
3. It provides confidence that the organization is providing services that meet the highest standards.
4. It acknowledges a level of organizational competence that is on a par with other accredited organizations.

5. It provides the assurance that the organization is continually working to improve the quality of its services.
6. It provides the opportunity, at the time of the accreditation assessment, to receive objective feedback from well trained and skilled peers. This is also an opportunity to learn best practices that may be adopted by the organization.
7. Staff morale is improved as training and competency programmes ensure that all employees know exactly what they are doing and also because they are made aware of the excellent standard of the services being delivered.

ACCREDITATION STEPS

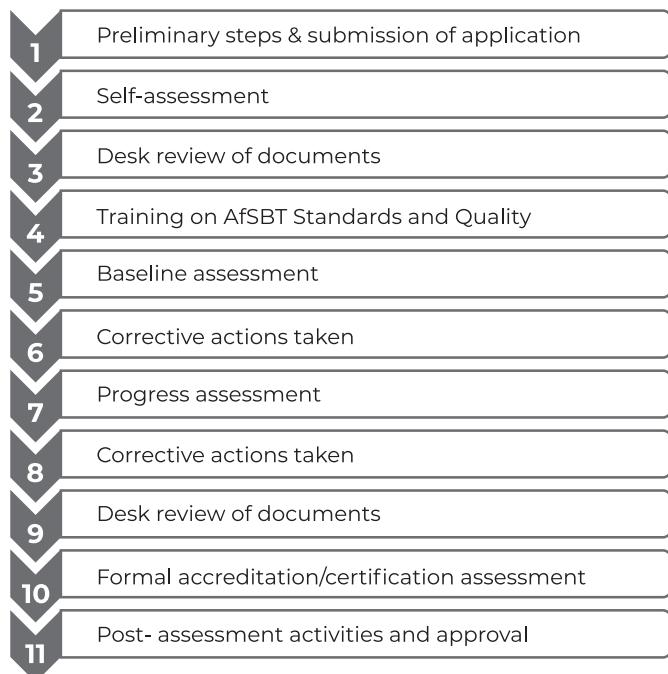
1. The AfSBT Step-Wise Accreditation Programme accredits or certifies at the following three steps:
 - **Step 1 Certification:**
The facility demonstrates conformance with the AfSBT Standards required at Step 1.
 - **Step 2 Certification:**
The facility demonstrates conformance with the AfSBT Standards required at Step 2.
 - **Step 3 Accreditation:**
The facility demonstrates conformance with the AfSBT Standards required at Step 3.
2. Facilities certified or accredited at any of the three steps will be added to the AfSBT Accreditation Register.

TYPES OF ASSESSMENTS

Various types of assessments will be conducted during the AfSBT Step-Wise Accreditation Programme:

- **Baseline assessment** - Initial assessment to determine preparedness of facility for accreditation
- **Progress assessment** - Assessment to confirm progress made since baseline assessment
- **Formal assessment** - Assessment for granting accreditation or certification
- **Re-assessment** - Where an assessment is re-done for a specific reason
- **Surveillance assessment** - Follow-up assessment after granting of accreditation/certification
- **Repeat assessment** - Repeat assessment in new cycle.

STAGES OF THE ACCREDITATION PROCESS



GENERAL CONDITIONS FOR ACCREDITATION

1. The official language of the AfSBT Step-Wise Accreditation Programme is English, and although documents may be translated into French and Portuguese, and assessments conducted in these languages, in the event of a dispute the English version of any AfSBT document shall be considered definitive.
2. There are two AfSBT Committees that oversee the administration of the Step-Wise Accreditation Programme, as follows:
 - The AfSBT Standards Committee, which sets the AfSBT Standards, ensures that they are kept up to date, and rules on requests for variances that may be made by a facility during the assessment process.
 - The AfSBT Accreditation Committee, which oversees the procedure followed in each assessment, reviews the findings and recommends to the AfSBT Board whether or not certification or accreditation should be conferred on the facility.
3. A facility which is accredited, or which has applied for accreditation, has the following responsibilities in terms of this programme:
 - To correspond with AfSBT through personnel who have the appropriate authority to handle the correspondence and to deal with all correspondence and requests from AfSBT promptly.
 - To request a variance from an accreditation standard, should this be required. (A variance is an alternative method or approach that deviates from, but meets the intent of, the AfSBT Standards, and does not increase the safety risks to donors and/or transfusion recipients.)
 - To complete agreed corrective actions arising from non-conformances within the specified time.
 - To inform AfSBT of any changes to the organogram, with respect to key employees within the organisation.

TIME FRAMES

1. The stages shown in the diagram above provide an outline of the accreditation process. This is provided as a guide only, and points may be omitted or changed as dictated by circumstances.
2. The timescale for carrying out listed tasks will be decided jointly between AfSBT and the applicant.
3. The time taken for accreditation to be achieved will depend on several factors, including the state of preparedness of the facility when the application is made; the extent to which training and technical assistance are required; the availability of AfSBT assessors/educators and the availability of funding.

BUDGET AND CONTRACTING

1. AfSBT will develop and share with the facility a budget for all assessments steps.
2. AfSBT will share with the facility the provisional role and responsibility of all parties involved in the process.
3. The facility and AfSBT will agree to the budget and responsibilities by signing a formal contract.

PRINCIPLES OF CONDUCTING AN ASSESSMENT

AfSBT follows six principles that are fundamental to making an assessment an effective tool to support management policies through the provision of information that can be used for continuous improvement. These principles are:

• Integrity

Assessors, Educators and others involved with the accreditation programme should perform their duties competently, honestly, diligently and responsibly, complying with any applicable legal requirements. Duties should be carried out in an unbiased and impartial way, and gifts or other inducements that could influence their judgement should never be accepted.

• Fair presentation

Findings, conclusions and reports should fairly and accurately reflect the activities being assessed.

• Due professional care

Assessors and educators have a responsibility to act with due professional care as befits the trust that the client has placed in them.

• Confidentiality

Assessors and educators may become privy to sensitive information during an assessment, and should never disclose or discuss this information with a third party, or use this information for personal gain.

• Independence

Assessors and educators should be independent of the activity which they are assessing and should have no conflicts of interest with the facility being assessed. All findings and reports should be based only on the evidence disclosed during the assessment and not influenced by pre-conceived or personal opinions.

• Evidence-based approach

Because of time and other constraints, assessments are usually based on samples of the information available, but it is important that appropriate use of sampling is made, and that the evidence is verifiable.

For any information, please contact the **AfSBT Management Office:** info@afsbt.org
AfSBT Administration Officer: **Molly Gondwe:** molly.gondwe@afsbt.org

GENERAL INFORMATION



Editorial Board of *Africa Sanguine*

Banji Adewuyi (Nigeria – Editor in chief)
Claude Tayou Tagny (Cameroon – French Editor)
Leesha Raman (South Africa – Production Editor)

Other Editors

Ludovic Anani	(Benin)	Isaac Kajja	(Uganda)
Justina Ansah	(Ghana)	Robin Knight	(United Kingdom)
Kamel Boukef	(Tunisia)	Malcolm Needs	(United Kingdom)
David Chama	(Zambia)	Jean-Baptiste Tapko	(Cameroon)
John Eggington	(United Kingdom)	Tracy Thurgood	(United Kingdom)
Olivier Garraud	(France)	Mark Williams	(United Kingdom)

ACKNOWLEDGEMENTS

AfSBT acknowledges with gratitude the support of the **National Bioproducts Institute NPC** in covering the cost of production of the journal, *Africa Sanguine*.

DISCLAIMER

The AfSBT and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the view and opinions expressed do not necessarily reflect those of the AfSBT and Editors, neither does the publication of advertisements constitute any endorsement by the AfSBT and Editors of the products advertised.



Global Blood Fund

extracted from website (<http://www.globalbloodfund.org>)

Global Blood Fund is a non-profit established in 2008 and registered as a charity in both the US and UK. It is run by practising blood banking professionals who share a deep concern about the huge global inequalities in access to safe blood and a determination to do something about this problem.

Our Aim

The aim is simple; to save lives by improving the availability and safety of blood in some of the world's poorest nations. GBF focuses particularly on enabling blood services in resource-poor countries to nurture that most precious of resources – their blood donors. In rich world and poor, the people that freely give their blood are the cornerstone of a plentiful supply of safe blood.

GBF Past, Present and Future

GBF has provided money, equipment, training and other forms of support to over 40 countries in Africa, Asia, Eastern Europe, the Middle East Latin America and the Caribbean. Projects include establishing rural blood banks, introducing innovative donor recruitment programs, funding consumables to make blood therapies more available for patients in need of transfusion, shipping containers of donated equipment around the world and enabling grass-roots donor communication programs.

We continue to expand our portfolio of support and add new countries to the list of those we serve.

Access GBF's cloud-based EqXchange portal, where no longer needed blood banking equipment can be donated and requested



AABB Information

extracted from AABB website (www.aabb.org)

AABB Membership

Join AABB and become a part of an engaging, knowledgeable community of professionals who have been in transfusion medicine, patient blood management or cellular therapies for more than 65 years! When you join AABB, you will have access to essential member benefits including resources, education and opportunities to connect with leaders in your field.

AABB Programmes

Programs & Services content encompasses the major program areas within AABB. Included within this section is information on transfusion, cellular therapies and patient blood management; a section devoted to the why, where and how of blood donation; consulting services, a division of AABB that provides managerial and technical assistance to facilities worldwide; disaster response, which provides background on activities and resources intended to help facilities be better prepared in the event of a disaster or pandemic affecting the blood supply; AABB publications such as newsletters and the official journal; and the National Blood Exchange, a resource-sharing program.

AABB PUBLICATIONS

This section provides access to all AABB publications, including Association Bulletins as well as the association's journal, Transfusion; monthly magazine, AABB News; weekly e-newsletter, AABB Weekly Report; daily e-newsletter, AABB SmartBrief; and several quarterly e-newsletters on specific topics or initiatives related to transfusion medicine and cellular therapies.

<http://www.aabb.org/programs/publications/Pages/default.aspx>

AABB SmartBrief

Free daily email newsletter with summaries of the latest news stories.
www.aabb.org/programs/publications/Pages/smartbrief.aspx



AfSBT Submission Guidelines for Authors: Africa Sanguine

PRINCIPLE

Submissions for consideration shall include original scientific studies (which shall be peer reviewed), short reports, letters to the editor, reviews related to aspects of blood transfusion or transfusion medicine,

or reprinting of articles or congress presentations (with permission). Research papers by junior scientists are also encouraged.

Africa Sanguine is an online journal.

PREREQUISITES

Manuscripts

All manuscripts submitted shall conform with prerequisites listed below:

1. Not published elsewhere.
2. Conforms to national ethics guidelines.
3. Authors shall include a word count in the submission.
4. Tables and images shall be numbered and referenced together with number assigned within the text.
5. Graphs, illustrations, images and drawings shall be submitted in a format that enables word processing (particularly of the words) by the AfSBT editors.
6. Facts stated in the submission shall be fully referenced according to the format provided in this document.
7. Submissions shall be in English and/ or French language.

Scientific studies

Original scientific studies should be in the following format:

1. Article should not exceed 10 000 words.
2. Includes an abstract of not more than 250 words (introduction, aims and objectives, materials and methods, results, discussion and conclusion).
3. References shall not be cited in the abstract.
4. Includes keywords or phrases / terms - should not exceed six.
5. Article should include introduction, aims and objectives, materials and methods, results, discussion and a conclusion.
6. Vancouver referencing style should be used.

ETHICS

Research ethics

1. All research findings presented including tests performed must have received approval by the authorised ethics committee of the institution, country or region.

Reference: Instructions for authors: Vox Sanguinis (ISBT) Blackwell Publishing. *"When reporting research on human subjects, the work must comply with the principles of the Declaration of Helsinki (1964), and authors should indicate that ethical approval of the study was granted (and from which institution ethical approval was obtained), and, where appropriate, that informed consent was obtained. The Editors reserve the right to reject a paper with questionable ethical justification."*

2. The anonymity of patients and subjects must always be ensured.

Case reports

Case reports should be in the following format:

1. Word limit of 2 000.
2. Title of case
3. Abstract of up to 150 words summarising the case presentation and outcome
4. Background describing what makes this case different or noteworthy.
5. Case presentation, relevant investigations, management and outcome.
6. Discussion
7. Learning points or conclusion.
8. Vancouver referencing style should be used.

Letters to the editor, short reports, book reviews, obituaries are welcomed.

1. They will be published at the discretion of the editors.
2. These do not require abstracts.
3. Should be limited to 400- 500 words.

Reviews

1. Reviews on subjects relevant to transfusion will be published by invitation only.
2. Queries with regard to review articles can be addressed to the Editor-in-Chief by email.

Ethical authorship

1. The International Committee of Medical Journal Editors (ICMJE) has specific criteria for authorship.
2. The following criteria shall be met by all authors of the paper:
 - Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
 - Drafting the work or revising it critically for important intellectual content; AND
 - Final approval of the version to be published; AND
 - Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ADMINISTRATION

1. No manuscript should be submitted without the consent of all authors.
2. All authors shall provide their full contact details. The review process will not proceed without the correct contact details of all authors.
3. Authors shall provide the entire manuscript in a single submission.
4. Authors shall save an electronic copy of their submission for reference.
5. Authors' names shall be stated, together with full affiliation/name of institution and the main author indicated.
6. Submissions shall be accompanied by a declaration (if any) of conflict of interest or financial involvement related to the submission. If there are no conflicts, this shall also be stated.
7. Receipt of the submission shall be acknowledged on receipt and when the submission is complete and comprehensive.
8. Authors shall be responsible for emailing an enquiry to AfSBT, using the contact details provided below, should an acknowledgment of receipt not be received within 5 days of submission.

FORMAT OF SCRIPT

1. Manuscripts should be written in UK English.
2. Microsoft compatible formats shall be used.
3. Basic text shall be used (preferably Calibri).
4. Font size shall not be less than 10 or more than 12. Text shall be double spaced with adequate margins but without text justification.
5. Special or mathematical characters and Greek letters shall be created by using the symbol font.
6. Pages shall not be numbered.
7. Complex formatting shall be avoided, especially for images, figures and tables. The same font used in the text shall be used in figures and tables.
8. The first time that a statement to be abbreviated appears in the text, it shall be written in full, followed by the abbreviation in parenthesis: e.g. National Blood Transfusion Service (NBTS).
9. Standard abbreviations shall be used.
10. Abbreviations shall not be included in the title or in the summary.
11. There shall be no full stops between authors' initials.
12. Standard units (SI) of measurement shall be used: e.g. for hours, it should be 'hr' and not 'hrs'.
13. Numbers should be written as grouped per thousand-units. For example, 1 000 or 12 345.
14. Quotes should be placed in single ('...') quotation marks.
15. If brackets/parenthesis are required, round brackets should be used. Square brackets are reserved for concentrations.
16. Ensure that your manuscript is as concise as possible, even if it is below the word limit.
17. Submissions shall be sent to the editors as attachments to e-mail.
18. All documents shall be submitted in a format that allows for updates/ changes to be made by the editors, to comply with the formatting of the journal, especially images, tables and figures.
19. If English or French is not the first language of the authors, it is recommended that the authors engage the services of a language editor prior to submission.

INCLUSION OF REFERENCES

1. References shall follow directly after the conclusions of the paper.
2. They shall be numbered by order of appearance in the text.
3. They shall be identified within the text, tables and figures by Arabic numerals: example 1,2
4. Numbers are separated by commas, but no spaces.
5. References shall comply with the standards of Vancouver: International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. Fifth edition. N Engl J Med 1997;336:309–16.

Examples of reference formats

- Egah DZ, Banwat EB, Audu ES, Iya D, Mandong BM, Anele AA, et al. Hepatitis B surface antigen, hepatitis C and VIH antibodies in a low-risk blood donor group, Nigeria. East Mediterr Health J 2007;13:961–6.
- Ferrera C, Monet D. Clinical use of Blood. 2e éd. Paris:Lockt Blackwell;1997.
- Beide ET. Indications of Fresh Frozen Plasma. In: Ferrera C, Monet D. Clinical use of Blood. 2e éd. Paris:Lockt Blackwell;1997. p.1-15
- Telly G. Blood donor in Africa. In:ISBT, ed. State of the art lectures. XXIIrd Congress of the International Society of Blood Transfusion. Basel: Karger;1994. p.25-6.

CONTACT DETAILS

1. All submissions to be considered for publication in Africa Sanguine shall be sent by email to the Editor-in-Chief (incoming), Dr Claire BARRETT on email address: africa.sanguine@afsbt.org
2. Correspondence should be copied to the AfSBT Administration Officer on email address: molly.gondwe@afsbt.org
3. Submissions shall be acknowledged by the Editor-in-Chief. If acknowledgement is NOT received, submitting authors should assume that the submission was not delivered, and take appropriate steps to rectify.



SATS Guide de Soumission pour les Auteurs: Africa Sanguine

PRINCIPE

Les soumissions pour examen incluront des études scientifiques originales (qui seront examinées par des pairs), des brefs rapports, des lettres à l'Editeur, des revues sur des aspects de transfusion sanguine

PREREQUIS

Manuscrits

Tous les manuscrits soumis doivent être conformes aux prérequis énumérés ci-dessous:

1. Non publié ailleurs.
2. Conforme aux directives nationales d'éthique.
3. Les auteurs doivent inclure un décompte de mots dans la soumission.
4. Les tableaux et images doivent être numérotés et référencés avec le numéro attribué dans le texte.
5. Les graphiques, illustrations, images et dessins doivent être soumis dans un format permettant le traitement de texte (en particulier des mots) par les éditeurs de la SATS.
6. Les faits énoncés dans la soumission doivent être entièrement référencés selon le format fourni dans ce document.
7. Les soumissions doivent être en anglais et / ou en français.

Etudes scientifiques

Les études scientifiques originales devraient être dans le format suivant:

1. L'article ne doit pas dépasser 10 000 mots.
2. Comprend un résumé d'au plus 250 mots (introduction, buts et objectifs, matériels et méthodes, résultats, discussion et conclusion).
3. Les références ne doivent pas être situées dans le résumé.
4. Comprend des mots-clés ou des phrases / termes - ne devant pas dépasser six.
5. L'article devrait inclure l'introduction, les buts et les objectifs, le matériel et les méthodes, les résultats, la discussion et une conclusion.
6. Le style de référencement de Vancouver devrait être utilisé.

ETHIQUE

Ethique dans la recherche

1. Tous les résultats de recherche présentés, y compris les tests effectués, doivent avoir été approuvés par le comité d'éthique autorisé de l'institution, du pays ou de la région.

Référence: Instructions pour les auteurs: Vox Sanguinis (ISBT) Blackwell Publishing. "Lors de la publication de recherches sur des sujets humains, le travail doit respecter les principes de la Déclaration d'Helsinki (1964), et les auteurs doivent indiquer que l'approbation éthique de l'étude a été accordée (et de quelle institution l'approbation éthique a été obtenue), que le consentement éclairé a été obtenu. Les éditeurs se réservent le droit de rejeter un document avec une justification éthique douteuse."

2. L'anonymat des patients et des sujets doit toujours être assuré.

ou de médecine transfusionnelle, ou la réimpression d'articles ou de présentations de congrès. Les documents de recherche des scientifiques juniors sont également encouragés. *Africa Sanguine* est un journal en ligne.

Les rapports de cas

Les rapports de cas doivent être dans le format suivant:

1. Limite de mots de 2 000.
2. Titre du rapport
3. Résumé de 150 mots résument la présentation du cas et les résultats
4. Contexte décrivant ce qui rend ce cas différent ou remarquable.
5. Présentation de cas, enquêtes pertinentes, gestion et résultats.
6. Discussion
7. Points d'apprentissage ou conclusion.
8. Le style de référence de Vancouver devrait être utilisé.

Les lettres à l'éditeur, les brefs rapports, les critiques de livres, les nécrologies sont les bienvenus.

1. Ils seront publiés à la discréption des éditeurs.
2. Ceux-ci ne nécessitent pas de résumés.
3. Devrait être limité à 400-500 mots.

Avis

1. Les examens sur des sujets liés à la transfusion seront publiés sur invitation seulement.
2. Les questions relatives aux articles de revue peuvent être adressées au Rédacteur-en-Chef par courrier électronique.

Les auteurs et l'éthique

1. Le Comité international des éditeurs de revues médicales (ICMJE) a des critères spécifiques pour la paternité d'un travail de recherche.
2. Les critères suivants doivent être remplis par tous les auteurs du document:
 - contributions substantielles à la conception ou à la conception du travail; ou l'acquisition, l'analyse ou l'interprétation de données pour le travail; ET
 - rédiger le travail ou le réviser de manière critique pour un contenu intellectuel important; ET
 - Approbation finale de la version à publier; ET
 - S'engager à rendre compte de tous les aspects du travail en veillant à ce que les questions liées à l'exactitude ou à l'intégrité de toute partie du travail soient examinées et résolues de façon appropriée.

ADMINISTRATION

1. Aucun manuscrit ne doit être soumis sans le consentement de tous les auteurs.
2. Tous les auteurs doivent fournir leurs coordonnées complètes. Le processus de révision ne se déroulera pas sans les coordonnées correctes de tous les auteurs.
3. Les auteurs doivent fournir le manuscrit complet en une seule soumission.
4. Les auteurs doivent conserver une copie électronique de leur soumission pour référence.
5. Les noms des auteurs doivent être indiqués, ainsi que l'affiliation complète / le nom de l'institution et l'auteur principal indiqué.

FORMAT DU MANUSCRIT

1. Les manuscrits doivent être écrits en anglais britannique.
2. Les formats compatibles avec Microsoft doivent être utilisés.
3. Le texte de base doit être utilisé (de préférence Calibri).
4. La taille de la police ne doit pas être inférieure à 10 ou supérieure à 12. Le texte doit être à double interligne avec des marges adéquates mais sans justification textuelle.
5. Les caractères spéciaux ou mathématiques et les lettres grecques doivent être créés en utilisant la police du symbole.
6. Les pages ne doivent pas être numérotées.
7. Le formatage complexe doit être évité, en particulier pour les images, les figures et les tableaux. La même police utilisée dans le texte doit être utilisée dans les figures et les tableaux.
8. La première fois qu'une déclaration devant être abrégée apparaît dans le texte, elle doit être écrite en entier, suivie de l'abréviation entre parenthèses: par ex. Service national de transfusion sanguine (NBTS).
9. Les abréviations standard doivent être utilisées.
10. Les abréviations ne doivent pas figurer dans le titre ou dans le résumé.

INCLUSION DES REFERENCES

1. Les références suivront directement les conclusions du document.
2. Ils doivent être numérotés par ordre d'apparition dans le texte.
3. Ils doivent être identifiés dans le texte, les tableaux et les figures par des chiffres arabes: exemple.1,2
4. Les nombres sont séparés par des virgules, mais pas d'espaces.
5. Les références doivent être conformes aux normes de Vancouver: International Committee of Medical Journal Editors. Exigences uniformes pour les manuscrits soumis aux revues biomédicales. Cinquième édition. N Engl J Med 1997; 336: 309-16).

DETAILS DE CONTACT

1. Toutes les soumissions à publier dans Africa Sanguine doivent être envoyées à la rédactrice en chef, Dr Claire BARRETT, par courrier électronique: africa.sanguine@afsbt.org
2. La correspondance doit être envoyée à l'administrateur de la SATS à l'adresse électronique suivante: molly.gondwe@afsbt.org

6. Les soumissions doivent être accompagnées d'une déclaration (le cas échéant) de conflit d'intérêts ou d'une participation financière liée à la soumission. S'il n'y a pas de conflits, cela doit également être indiqué.
7. La réception de la soumission doit être confirmée dès réception et lorsque la soumission est complète.
8. Les auteurs sont responsables d'envoyer une demande par courriel à la SATS, en utilisant les coordonnées fournies ci-dessous, si un accusé de réception n'est pas reçu dans les 5 jours suivant la soumission.

11. Il ne doit y avoir aucun point entre les initiales des auteurs.
12. Les unités standard (SI) de mesure doivent être utilisées: par ex. pendant des heures, il devrait être «h» et non «hs».
13. Les nombres doivent être écrits comme groupés par millier d'unités. Par exemple, 1 000 ou 12 345.
14. Les devis doivent être placés dans des guillemets simples («...»).
15. Si des parenthèses / parenthèses sont requises, des crochets doivent être utilisés. Les crochets sont réservés aux concentrations.
16. Assurez-vous que votre manuscrit est aussi concis que possible, même s'il est inférieur à la limite de mots.
17. Les soumissions doivent être envoyées aux éditeurs sous forme de pièces jointes à un courrier électronique.
18. Tous les documents doivent être soumis dans un format qui permet aux éditeurs de faire des mises à jour / changements, afin de se conformer à la mise en page de la revue, en particulier des images, des tableaux et des figures.
19. Si l'anglais ou le français n'est pas la première langue des auteurs, il est recommandé aux auteurs d'utiliser les services d'un éditeur de langue avant de les soumettre.

Exemples de formats de références

- Egah DZ, Banwat EB, Audu ES, Iya D, Mandong BM, Anele AA, *et al.* Hepatitis B surface antigen, hepatitis C and VIH antibodies in a low-risk blood donor group, Nigeria. East Mediterr Health J 2007;13:961–6.
- Ferrera C, Monet D. Clinical use of Blood. 2e éd. Paris:Lockt Blackwell;1997.
- Beide ET. Indications of Fresh Frozen Plasma. In: Ferrera C, Monet D. Clinical use of Blood. 2e éd. Paris:Lockt Blackwell;1997. p.1-15
- Telly G. Blood donor in Africa. In:ISBT, ed. State of the art lectures. XXIIrd Congress of the International Society of Blood Transfusion. Basel: Karger;1994. p.25-6.

3. Les soumissions doivent être accusées de réception par Le Rédacteur en chef. Si l'accusé de réception n'est PAS reçu, les auteurs soumettant doivent supposer que la soumission n'a pas été reçue, et prendre les mesures appropriées pour rectifier.

19-22 June 2018
Arusha, Tanzania



Stand N°B13
B Medical Systems

B Medical Systems
kindly invites you to discover our

NEW INNOVATIVE PRODUCTS



We look forward to seeing you during
the 9th Congress of Africa Society for Blood Transfusion!



medical
systems

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

B Medical Systems S.à r.l.

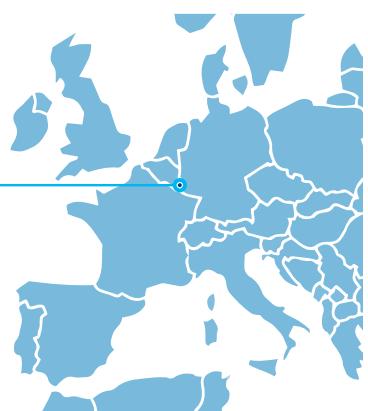
17, op der Hei
L - 9809 Hosingen, Luxembourg

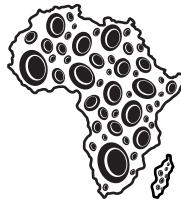
Tel.: (+352) 92 07 31-1
Fax: (+352) 92 07 31-300
info@bmedicalsystems.com

www.bmedicalsystems.com



Luxembourg, in the heart of Europe





AfSBT

Africa Society for
Blood Transfusion

Société Africaine
de Transfusion Sanguine
Sociedade Africana
para Transfusão Sanguínea

AFRICA SOCIETY FOR BLOOD TRANSFUSION APPLICATION FOR MEMBERSHIP

- New individual members
- Associate members (non-profit organizations, e.g. blood services)
- Renewals (individual members)

After completion, scan this form & send by email to AfSBT Admin Office: nyags18@gmail.com; info@afsbt.org

Family name (surname)..... Initials..... Mr / Mrs / Ms / Prof

First name (calling name)..... Job Title.....

Nationality..... Year of birth Gender: Male Female

Organization

Address.....

Postal code..... City..... Country.....

Telephone + dialling codes Fax:

Email AfSBT membership number.....

Contact details (if different from above).....

.....
Academic and professional qualifications.....

.....
Areas of expertise and interest.....

.....
Duration of active work in field of blood transfusion / transfusion medicine

The AfSBT may forward your contact details to third parties (if not, check the box)

PAYMENT (for new members and renewals)

Individual Membership US\$ 40 for one year, US\$ 80 for two years
Associate Membership US\$ 250 for one year, US\$ 500 for two years

The undersigned declares to pay the total amount in US\$ or equivalent South African Rand (ZAR) by bank transfer, and to scan and email proof of deposit to AfSBT Admin Office: info@afsbt.org

Signature..... Date.....(dd / mm / yyyy)

BANKING DETAILS:

Only for payments made IN South Africa

Account Name: The Africa Society for Blood Transfusion
Branch Name: Pinetown, South Africa
Branch Code: 221626

Bankers: First National Bank
Account Number: 62021117917
Swift Code: FIRNZAJJ

Account to be used by members OUTSIDE of South Africa

Bankers: First National Bank
Swift Code: FIRNZAJJ

Account Number: 0275069 \$ US
Account Number: 0275050 € EURO





SOCIÉTÉ AFRICAINE DE TRANSFUSION SANGUINE

DEMANDE D'ADHESION

- Nouveau membre individuel
- Membre associé (organisme à but non lucratif, ex :service de transfusion)
- Renouvellement (membre individuel)

Après remplissage, bien vouloir scanner cette fiche et l'envoyer par email à la SATS,
Bureau administratif: nyags18@gmail.com; info@afsbt.org

Noms: Initiales: M. / Mlle / Mme / Prof

Prénoms: Titre professionnel:

Nationalité: Année de naissance // Sexe: M F

Organisation:

Adresse:

Code postal: Ville: Pays:

Téléphone + code téléphonique: Fax:

Email: Numéro d'adhésion à la SATS:

Contacts (si différent de ceux qui sont au dessus):

Qualifications académiques et professionnelles:

Domaines d'intérêt et d'expertise:

Durée de travail actif dans le domaine de la transfusion sanguine/médecine transfusionnelle:

La SATS pourrait envoyer vos contacts aux parties tiers (sinon, cocher la case)

PAIEMENT (nouveaux membres et les renouvellements)

Adhésion individuelle US\$ 40 pendant un an, US\$ 80 de deux ans

Adhésion de membre associé US\$ 250 pendant un an, US\$ 500 de deux ans

Je soussigné, déclare payer la somme total en US\$ ou équivalent en rand sud-africain (ZAR) par transfert bancaire, et à scanner et envoyer par email la preuve du paiement au bureau administrative de la SATS:
info@afsbt.org

Signature: Date: (Jour / mois / année)

DÉTAILS BANCAIRES:

Paiements bancaires effectués EN Afrique du Sud

Nom du compte: The Africa Society for Blood Transfusion

Nom de la branche: Pinetown, South Africa

Code de la branche: 221626

Banquiers: First National Bank

Numéro du compte: 62021117917

Code Swift: FIRNZAJJ

Compte bancaire pour les membres ÉTRANGER de l'Afrique du Sud

Banquiers: First National Bank

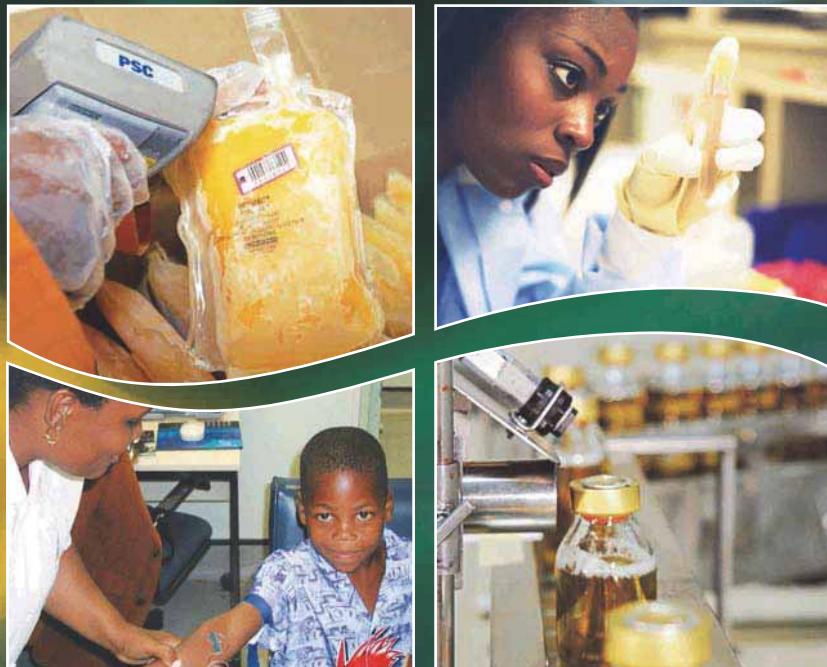
Code Swift: FIRNZAJJ

Numéro du compte: 0275069 \$ US

Numéro du compte: 0275050 € EURO

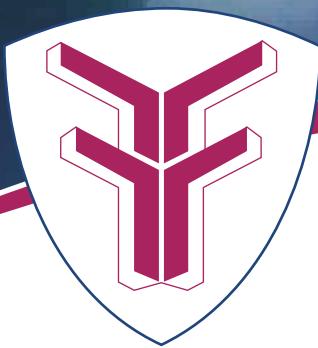


Founder Member & Sponsor of the AfSBT since 1997



Manufacturer of plasma products:

Coagulation Factors, Albumin Solutions, Immunoglobulins & Fresh Dried Plasma.



NATIONAL BIOPRODUCTS INSTITUTE NPC

NBI is a Non Profit Company committed to providing safe, cost effective, quality products

10 Eden Road, Pinetown, 3610.
Private Bag X9043, Pinetown, 3600,
South Africa.

Telephone: (+27) 031 714 6700
Fax: (+27) 031 708 5614
Orders Fax: (+27) 031 708 5618
Toll Free orders: 0800 33 2833
E-mail: info@nbisa.org.za
Website: www.nbisa.org.za

The **Africa Society for Blood Transfusion** gratefully acknowledges the sponsorship of the printing and distribution of the **Africa Sanguine** by the **NATIONAL BIOPRODUCTS INSTITUTE**