# Life Blood

Issue 25



4 March 2016

Dear Life Blood Reader,

Welcome to the 25th Edition of Life Blood.

We trust that you have had a good start to the year and would like to wish you the very best for a prosperous 2016. In light of the recent re-emergence of the Zika virus, the WPBTS has proactively adjusted its donor acceptance criteria to prevent the possible transmission to patients via a blood transfusion. In this edition we also inform you of the WPBTS's patient blood management awareness campaign, the introduction of the electronic cross-match, the launch of the new transfusion transmitted disease testing platform, progress of the validation for pathogen reduction technology for platelet products, provide feedback for the IPFA Educational Day and Workshop, feature the role of our Components Processing Laboratory in the transfusion value chain, and provide the procedure for spiking the new blood bags.

Please feel free to contact us with your comments and queries.

Regards,

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## New Donor Acceptance Criteria to Prevent Zika Virus Transmission

In light of the recent re-emergence of the Zika virus, WPBTS has proactively adjusted its donor acceptance criteria to prevent the potential transmission to patients via a blood transfusion. Blood donors who have been infected by the Zika virus or have travelled to the countries listed below are requested to NOT donate blood within 28 days of their return to the Western Cape.

**Americas:** Barbados, Bolivia, Brazil, Colombia, Costa Rica, Curacao, Dominican Republic, Ecuador, El Salvador, French Guiana, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Nicaragua, Panama, Paraguay, Puerto Rico, Saint Martin, Suriname, US Virgin Islands and Venezuela.
**Oceania/Pacific:** American Samoa, Samoa and Tonga.
**Africa:** Cape Verde

People who have donated blood despite visiting these areas and experience the following symptoms within 14 days after donation should please notify the WPBTS immediately at 021 507 6329 or 021 507 6320.

**Symptoms:** Fever, muscle/joint aches or weakness, eye pain (including conjunctivitis) and a rash.

## WPBTS Patient Blood Management Awareness Campaign

The WPBTS is implementing its Patient Blood Management Awareness Week Poster Campaign to state hospitals that are situated in the Western Cape. Through this campaign we aim to increase awareness amongst clinicians and provide them with useful pre- and post-transfusion clinical recommendations that will assist with their decision making.

The concept for this poster campaign is "Focus on Your Patient, Not the Transfusion". In it we provide statements to consider before transfusing a patient. These are as follows:

- A restrictive haemoglobin (Hb) threshold (7.0-8.0 g/dl) should be used for *stable* patients.
- Transfusion decisions should be influenced by clinical symptoms *and* Hb concentration.
- Single unit red cell transfusions should be the standard for *non-bleeding* patients.
- Re-assess your patient *before* ordering any additional units of blood.
- Investigate and treat pre-operative anaemia *2 to 4* weeks prior to surgical procedures.
- *Don't* transfuse red blood cells for iron deficiency without hemodynamic instability.
- Transfusion of red blood cells or platelets should be based on the *first* laboratory value of the day unless the patient is bleeding or otherwise unstable.
- Avoid *unnecessary* blood sampling – this leads to unnecessary blood loss and transfusions.

We would appreciate it if this campaign is implemented on a regular basis at your hospital/facility, as needed. Downloadable poster.

Should you require more information about this campaign or would like to implement it at your hospital, please contact Hayley Alie, WPBTS Marketing Officer.

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## Introduction of the Electronic Cross-match

Having been on its radar for some time, the WPBTS is pleased to announce the introduction of the electronic cross-match system to all its Blood Banks that was phased in from October through December last year.

### What does the electronic cross-match entail?

The electronic cross-match does not require conventional serological testing, but rather suitably matched ABO and Rh compatible blood is selected for the patient by an electronic (computer) comparison and verification of the patient and donor unit information with the group and screen test that is performed on the patient's current sample.

### When would an electronic cross-match be performed?

An electronic cross-match is performed when all of the following acceptance criteria are met.

1. The Blood Bank must have a previous record for the patient.
2. The patient's ABO blood group and Rh type are conclusively known.
3. The patient does not have irregular antibodies.
4. The group and screen test that is performed on the current sample must match the patient's previous record.

### When would an electronic cross-match not be performed?

Patients with the following diagnoses are not candidates for electronic cross-matching i.e. leukaemia, sickle cell disease, thalassemia, bone marrow transplant, solid-organ transplant, exchange transfusion or autoimmune haemolytic anaemia. Also, when a blood group and/or antibody discrepancy exists in the patient's known record and current sample, the discrepancy is investigated serologically for a possible sample mix-up.

### What are the advantages of the electronic cross-match?

The electronic cross-match can result in a significant reduction in turnaround time when additional units are requested, and a reduction in associated costs for the hospital.

### Would there be any changes for the clinician who completes the cross-match request form?

Essentially there would be no changes for the clinician completing the cross-match request form except to reiterate that providing all the information, particularly the patient's previous transfusion history and diagnosis, is important for the Blood Bank when determining the eligibility for electronic cross-matching.

## Your Questions Answered

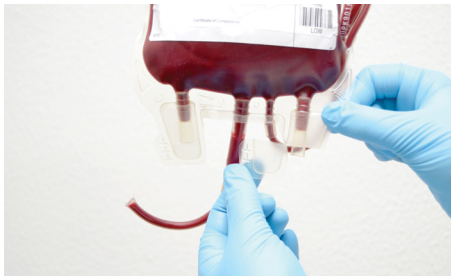
**Q: Which tests are performed by the Blood Bank prior to issuing fresh frozen plasma?**

**A:** For adults and infants older than four months, fresh frozen plasma (FFP) is issued on a group-specific basis. A patient blood sample must therefore accompany new patient requests for FFP in order for routine group and screen testing to be performed by the Blood Bank prior to issuing FFP products. However, you would not be required to provide a patient blood sample if they had received only plasma, cryoprecipitate and platelet products in the last 6 months. In this case, the Blood Bank will search your patient's record for their ABO blood group and the presence of red cell antibodies, if any, and issue group specific FFP on the basis of this information.

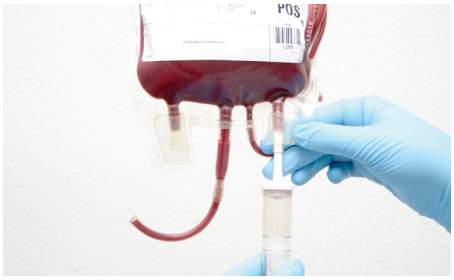


## Procedure for Spiking the Blood Pack

The WPBTS has recently introduced new blood packs as mentioned in the previous edition of Life Blood. The instructions for spiking the blood pack are illustrated as follows.



**Step 1:**
Tear the port cover sideways at the notch.



**Step 2:**
Insert and twist the spike straight into the port until it is completely inserted.

## Launch of the New Transfusion Transmitted Disease Testing Platform

Spearheaded by the WPBTS Virology Laboratory Supervisor, Mr Russell Cable, the WPBTS in collaboration with Roche Diagnostics has created a highly customised state-of-the-art transfusion transmitted disease testing platform. Its blueprint has the potential for use in other Blood Services internationally. The new platform, which is known as the WPBTS Total Serology Solution, features the Cobas 8000 System and PVT (pre-analytic instrument), and was launched at the WPBTS headquarter testing laboratories on 5th February 2016.

The WPBTS Total Serology Solution provides a paradigm shift in testing by providing enhanced systems intelligence that allows for faster processing times, automatic assay selection and sample placement, sample tracking, simultaneous processing for routine and non-routine tests, paperless processes, extra capacity for additional assays and in case of downtime, multitasking, and the flexibility to grow with us (future-proofing). The sensitivity and specificity of the assays scored very well.

We are pleased that the new system enables faster turnaround times for the availability of blood to the patient.



## Pathogen Reduction Technology - Progress Report

Written by Mrs Shaldine Sutton (WPBTS Component Processing Laboratory Supervisor)

The evaluation to investigate the processing feasibility and platelet quality during storage of pooled buffy coat random donor platelets in 100% plasma has been undertaken using the Cerus Intercept Pathogen Inactivation Blood System. Sampling for quality control of pre- and post-pathogen reduced platelet products has been completed and a final evaluation report is in process.

The Terumo Mirasol Pathogen Reduction Technology evaluation began in February, processing both random donor platelets and single donor apheresis platelets. Sampling for quality control is currently in process. Once this stage is completed, a final evaluation report will be written.

Training of the PRT systems was given by both Cerus and Terumo professionals for the evaluation of their equipment and technologies.

Processing feasibility, platelet quality, platelet expiry, storage and user efficiency will be some of the criteria considered in the final reports.

## Feedback for the IPFA Educational Day and Workshop


Worldwide usage of fractionated blood products, in particular albumin, has been increasing in recent years. In South Africa we are privileged to have two local fractionators i.e. the Western Province Blood Transfusion Service and the National Bioproducts Institute, who aim to supply the South African market. Due to the lack of fractionators in the rest of the continent, the vast majority of African countries face greater supply-side issues that essentially limit their ability to supply their customers.

The IPFA Educational Day and Workshop on Improving Access to Plasma and Plasma Products in the Southern African Region was held from 30th November - 2nd December 2015 at the Spier Hotel and Conference Centre in Stellenbosch, Cape Town. It sought to provide a platform for meaningful robust discussion paving the way for greater access to plasma and plasma-derived medicinal products in the region. The Workshop/Educational Day was attended by approximately 60 delegates and key stakeholders i.e. fractionators, blood services/societies, clinical practitioners, patient organisations, regulatory bodies and research organisations.

The meeting addressed current needs and constraints regarding global usage trends for plasma-derived medicinal products, treatment for patients with haemophilia, immunodeficiency syndromes and HIV/AIDS, fractionator's quality requirements for plasma, accreditation for plasma suppliers, strategies for safe blood collections and developing regulatory standards.

Presentations for both the Educational Day and the Workshop are publicly available on the IPFA website.
http://www.ipfa.nl/events/ipfa-workshop-on-improving-access-to-plasma-and-plasma-products-in-the-southern-african-region



## WPBTS Laboratory Series – Component Processing Laboratory

In this edition we feature the role of our Component Processing Laboratory in the transfusion value chain.

The advancements in transfusion medicine advocate the use of blood components for transfusion therapy rather than whole blood. Considering that up to three products can be processed from a single whole blood donation, the WPBTS processes approximately 386 000 blood products per annum from approximately 154 000 blood donations. The blood products are produced according to stringent quality specifications that ensure blood products of the highest standards. This is achieved by strict adherence to cold chain management, the use of aseptic techniques and performing procedures to exact standards. By keeping abreast with the latest developments in the field of blood component processing, we aim to provide improved blood products for clinical use that ultimately benefit the patient.

The Components Processing Laboratory is responsible for separating whole blood donations into cellular (i.e. red cells and platelets) and plasma (i.e. fresh frozen plasma and cryoprecipitate) components by using purely physical separation techniques, such as centrifugation and freeze/thaw cycles. Our regional branches in George and Worcester also perform component processing to an extent.

Upon arrival of the whole blood donations in the Component Processing Laboratory, the units are centrifuged to separate the red cells, buffy coat (containing platelets) and plasma into layers. The centrifuged units are then placed on the plasma extractors to transfer the individual components to satellite bags. The processes for the most commonly used blood products are described in a nutshell below.

The additive solution (SAGM) is added to the red cell concentrate to preserve its shelf life for up to 42 days. Some of the red cell concentrates undergo leucocyte filtration before storage and are kept as adult units or further processed into paediatric and infant units. Red cell concentrates (including leucocyte filtered and washed red cells) have a haematocrit of 0,5 to 0,7 l/l. The haemoconcentrate that is prepared for intra-uterine transfusions has a haematocrit of > 0,8 l/l.

The buffy coats from a minimum of five individual whole blood donations are pooled, then centrifuged lightly so as not to cause the platelets to aggregate. After centrifugation the supernatant is removed to produce the final pooled random donor platelet. Single donor apheresis platelets, which are collected by our Apheresis Donation Unit, are kept as adult units or further processed into paediatric and infant platelets. Pooled random donor platelet units have a platelet count of ≥2,4 x $10^{11}$/l. Infant apheresis platelets have a platelet count of ≥0.5 x $10^{11}$/l. Paediatric apheresis platelets have a platelet count of ≥1.0 to 2.3 x $10^{11}$/l.

The plasma is frozen within eighteen hours of collection and stored as fresh frozen plasma. The cryoprecipitate is extracted by thawing and draining fresh frozen plasma in an ethanol bath within eight hours of collection. The recovered plasma can be fractionated into plasma-derived products. Fresh frozen plasma has a factor VIII concentration of ≥0.7 IU/ml, cryoprecipitate has a factor VIII concentration of ≥80 IU/ml and fibrinogen level of ≥12 mg/ml.

PATIENT BLOOD MANAGEMENT AWARENESS WEEK

# Focus on Your Patient, Not the Transfusion

## Statements to consider before transfusing a patient:

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The content is derived from the American Association of Blood Banks' (AABB) Patient Blood Management Awareness Week Poster.

t: 021 507 6300 • www.wpblood.org.za
SMS 'blood' to 33507 and we'll call back (R1.50 per SMS)

WP Blood Transfusion Service
Do something remarkable