



Dear Life Blood Reader,

Welcome to this informative edition of Life Blood. We would like to encourage blood users to please complete our 2017 customer satisfaction survey, included at the end of this edition. Your feedback is very important and appreciated.

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

Regards,

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## WPBTS Introduces Blood Collection Monitors and Mixers

As of May 2017, the WPBTS has implemented state-of-the-art blood collection monitors/mixers viz. the HaemoFlow 400 in all its fixed site and mobile donation clinics. The HaemoFlow 400 replaces the hand-held blood shaker system that required donors to continuously press a trigger to mix the blood with anticoagulant, and an alarm would sound when the bag was sufficiently full. Though having served us for decades, these blood shakers were operator-dependent and resulted in some units being unusable i.e. overweight, underweight or containing clots. The introduction of the HaemoFlow 400 aims to eliminate these errors, provide better quality blood products and a more comfortable donation experience.





The HaemoFlow 400 enables the withdrawal of exactly 450ml of whole blood and has a draw volume accuracy of  $\pm 1\%$ . It ensures the blood is adequately mixed with the anticoagulant in the bag to prevent clot formation. It will automatically clamp the tubing and activate the alarm at the end of a successful donation after the target volume is reached within the acceptable bleed time of 30 minutes. Each individual HaemoFlow 400 machine is calibrated at the start of every blood donation clinic and in the event that the device is knocked whilst in operation it will automatically recalculate.

The device continuously monitors the entire donation through features such as the start time, elapsed time, stop time, flow rate (updates every  $\pm 6$  seconds), full weight, and tilt of the tray mixing the blood. The alarm will also activate in the event that a low flow rate, high flow rate, over collection (within 3% of target volume), short collection (within 3% of target volume) or change in tilt is detected.

The HaemoFlow 400 has been welcomed in the blood donation clinics and has been implemented with ease.

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## Introduction of Platelet Additive Solution for Pooled Platelet Products at WPBTS

Each random donor platelet (RDP) product is made by pooling buffy coats from four different whole blood donors. The platelet cells were previously suspended only in plasma, which acts as a support medium to sustain the cells during the product's five day shelf life. WPBTS has recently introduced the use of Platelet Additive Solution (PAS) in the RDP products, which replaces a portion of the plasma in these platelet concentrates.

PAS is a sterile, buffered salt solution that contains acetate to replace glucose as fuel for the platelets, which effectively prevents acidification of the storage environment. Other additives, including potassium and magnesium, are responsible for improvement in platelet recovery and survival.

The Terumo Platelet Additive Solution + (T-PAS+) was selected for use by WPBTS after a validation process.

PAS has numerous benefits to the patient, namely:

- A significant decrease in allergic reactions due to the reduction in plasma volume (plasma cytokines and proteins are largely responsible for these adverse reactions). There has also been a suggested decline in Transfusion Related Acute Lung Injury (TRALI) and acute haemolytic transfusion reactions with PAS-containing platelet products.
- Improved platelet storage stability.
- Earlier bacterial identification in contaminated platelet products has also been demonstrated with the use of PAS.

The introduction of PAS has resulted in more plasma being available for fractionation purposes.

For more information regarding the use of PAS in RDP products at WPBTS, please contact Dr Caroline Hilton (Transfusion Medical Specialist) at [caroline@wpbts.org.za](mailto:caroline@wpbts.org.za) or Debbie Smith (Processing Manager) at [debbies@wpbts.org.za](mailto:debbies@wpbts.org.za).

### References:

PF van der Meer. Platelet additive solutions: a future perspective. *Transfusion Clinical Biology*. 2007. 14(6):pp 522-525.

Terumo BCT Solutions Safety Specification Sheet for T-PAS+ (PN:777020-XXX), 2013.

# WPBTS Implements Molecular Genotyping

By Ruwayda Soeker (WPBTS Reference Laboratory Supervisor)

Molecular genotyping was introduced as an adjunct to serological testing in order to determine the phenotype of patients who have been multiply transfused. It is also used for patients who have developed antibodies that are difficult to identify. A panel of red cells may on occasion be inadequate to fully identify the spectrum of alloantibodies, especially when multiple alloantibodies are present. The patient's genotype is then used as a guide to finding compatible blood. It is also used as a screening tool to find rare donors for the Rare Donor File.

A rare blood donor phenotype occurs in between 1:100 to 1:1000 or even fewer donors and includes high-frequency-antigen-negative and multiple-common-antigen-negative blood groups. Rare donors are needed when patients with multiple antibodies, patients with antibodies to high frequency antigens or patients with rare blood types need a blood transfusion.

At WPBTS the use of extended blood group compatible units to reduce the risk of alloimmunisation in multiply transfused patients is performed (eg. sickle cell anaemia and thalassaemia patients). These patients receive blood compatible for ABO, Rh (including C, E, c and e), Kell, Duffy, Kidd and S systems. Patients with multiple antibodies and suspected rare donors can then be genotyped for CW, V, hrS, VS, hrB, Kpa, Kpb, Jsa, Jsb, Fyb(GATA), M, N, S, s, U, Mia, Dia, Dib, Doa, Dob, Hy, Joa, Coa, Cob, Yta, Ytb, Lua and Lub blood types, as antisera is rare and entirely not available for some blood types.

The genotype is performed using a test kit for DNA extraction and analysis. When the Reference Laboratory identifies a rare donor from the donor population or from a patient case study, the donor will be notified and family studies may be performed. A family study may also be performed on family members of patients with rare blood types. The full patient and donor red cell antigenic profile will be captured on the laboratory information system and stored for transfusion safety.

## Further reading

1. Telen M, 2014: The use of genotyping in transfusion medicine.  
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4. Flegel WA, Gottschall JL, Denomme GA: 2015: Integration of red cell genotyping into the blood supply chain: a population-based study.  
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5. Reid MA, 2009: Transfusion in the age of molecular diagnostics  
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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4993084/>
7. Kutner JM, Mota M, Conti F, Castilho L, 2014: Blood genotyping for improved outcomes in chronic transfusion patients: current and future perspectives  
<https://www.dovepress.com/blood-genotyping-for-improved-outcomes-in-chronic-transfusion-patients-peer-reviewed-fulltext-article-IJCTM>



## 34th South African National Blood Transfusion Congress Feedback

The recently held 34th South African National Blood Transfusion Congress that took place in Sun City from the 28th to the 31st of August 2017 was a huge success and has been applauded as the best Congress to date. This event provided the complete delegation of approximately 400 participants with a superb educational programme, social activities and everything in between. The theme for the Congress i.e. Innovation Lifeline to the Future was pertinently covered by the array of highly acclaimed speakers both national and international. Please feel free to visit the [Congress website](#) for the speaker profiles, presentations and to view the gallery.

### Downloadable presentations

[Monday, 28th of August](#)

[Tuesday, 29th of August](#)

[Wednesday, 30th of August](#)

[Thursday, 31st of August](#)

[Posters](#)

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## Brand New WP Blood App for Blood Donors

The WPBTS has recently launched its brand new, free WP Blood App for blood donors that makes it simple to donate blood and help save lives. With rich features, a personal profile, easy navigation to clinics and reminders about when to donate blood, making a difference to the lives of others has never been easier.

### The WP Blood App features:

- Reminders about when you're due to donate blood
- A personalised profile detailing blood type and date of your last donation
- Updates on our blood levels and stock
- Alerts when a mobile blood donation clinic is in your area
- Easy map navigation to all available mobile and fixed clinics
- Real, moving stories from blood donation recipients
- Event alerts and invites

### Download It Now

Visit your favourite app store and simply download the WP Blood App to your smartphone or tablet from these links: [Apple](#) or [Android](#).

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## WPBTS Ethical Protocol for Provision of Blood for Non-Clinical Use

The WPBTS firmly upholds its core function to provide an adequate supply of safe blood and blood products to meet the transfusion needs in the Western Cape, and the rest of the country if there is surplus. Beyond this, we may provide blood for non-clinical use to university affiliated research institutions/departments, testing laboratories and private life science companies/institutions on request. The blood volume requirements for non-clinical use are minimal. WPBTS adopts the following ethical protocol for the provision of blood and blood products for non-clinical use.





- Only blood/blood products that are surplus to the Service's requirements and that are not usable for transfusion purposes or required for patients may be considered for non-clinical use.
- Expired or transfusion-transmitted infection positive products or samples are of no potential therapeutic value to patients and may be supplied for non-clinical use.
- In-date blood products are of potential therapeutic value to patients but may be approved for non-clinical use only if there is reasonable certainty of expiry of products from the applicable blood group.
- Blood donors must provide written consent that samples of their blood and/or donation data may be used on occasion for scientific research. The scope of blood donor consent as set out in the donor self-exclusion questionnaire states that samples of their blood and/or donation data may be used on occasion for scientific research, the objective of which is to improve the safety of the blood supply to patient and donor health and well-being. On occasion the Service may permit researchers to request additional samples with their consent.
- Additional sample requests that do not fully meet the consent requirement will be approved subject to separate consent being processed by the researcher, or will be referred to the WPBTS Executive Board's Social and Ethics Committee.
- The donor's decision must be respected and donors should not be coerced into providing consent against their will.
- Blood donor and recipient confidentiality are paramount and any samples or products supplied to third parties must be de-linked to ensure that donors cannot be identified by external parties.
- Only fully-tested blood and blood products may be provided.
- Blood donors and the Service's staff should not be unnecessarily inconvenienced or disadvantaged by the withdrawal of extra samples at the time of donation.
- The requestor must provide a request letter for approval by the WPBTS CEO/Medical Director or referral to the WPBTS Executive Board's Social and Ethics Committee. The letter should include the following:
  - Name and contact particulars of the requestor/researcher.
  - Type of samples required eg. warm returned red cell concentrates, buffy coats.
  - Frequency and sample volumes eg. once-off, one unit every 8 weeks for 12 months.
  - Purpose for which samples are required eg. scientific research, population normal values, instrument evaluation, reagents, training.
  - Evidence of the entity's ethics committee approval.
  - Process to ensure safe disposal of sample tubes or blood packs.
- Charges may be levied at the discretion of the WPBTS CEO/ Medical Director.
- Samples collected from WPBTS staff and researchers themselves will be collected by the WPBTS Specialised Donations Department in dry or quad packs under separate consent.
- Patient crossmatch samples will not be given to third parties.

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## Your Questions Answered

**Question:**

Which blood products are returnable?

**Answer:**

Returnable and non-returnable blood products are based on product expiry, component processing method and risk of bacterial contamination. For example, blood products that are processed in a closed sterile system have a longer shelf-life and lesser risk of bacterial contamination than units that are processed in an open sterile system. All blood products that are filtered (leucocyte reduced) on-site at the Blood Bank prior to issue cannot be returned.

The following blood products are returnable if they meet the Blood Bank acceptance criteria.

- Red cell concentrates and whole blood products can be returned if all of the following acceptance criteria are met i.e. returned within 24 hours after issue, within expiry, stored at a temperature between 2-10°C, and with an intact cable tie attaching the unit to the hamper. Applicable for:





- Red cell concentrate - Adult
- Red cell concentrate - Paediatric
- Red cell concentrate - Infant
- Red cell concentrate - Prestorage leucocyte reduced
- Whole blood
- Platelet products are accepted if returned within 6 hours after issue, within expiry and if suitable for use for another patient. Applicable for:
  - Apheresis platelet - Adult
  - Apheresis platelet - Infant
  - Pooled random donor platelet
  - Gamma-irradiated platelet units may not be returned for re-issue, except if they have been irradiated in the WPBTS gamma-irradiator (situated at the Red Cross War Memorial Children’s Hospital Blood Bank).
- Autologous and designated blood products are returnable for the same patient, although exceptions can apply.

The following blood products are non-returnable:

- Red cell concentrate - Leucocyte reduced
- Red cell concentrate - Albumin washed
- Red cell concentrate - Filtered washed
- Whole blood - Leucocyte reduced
- Whole blood - Gamma-irradiated
- Whole blood - Filtered and gamma-irradiated
- Fresh frozen plasma

## WPBTS Releases Its Integrated Report for 2016 - 2017

The WPBTS has released its Integrated Report for 2016 - 2017 during the Annual General Meeting that was successfully held at the Service’s headquarters in Pinelands on Thursday, the 21st of September 2017.

Some interesting facts and figures are tabulated below for your information.

Facts and Figures		2016/2017
Total blood donations collected at clinics		152 447
Total units tested (includes apheresis and autologous units)		153 591
Confirmed positive test results	Hepatitis B	63
	Hepatitis C	5
	HIV	52
	Syphilis	74
Number of apheresis platelets issued for this period	Adult apheresis platelet	3 812
	Infant apheresis platelet	722
Specialised donation services information	Autologous donations	6
	Designated donations	36
	Therapeutic donations	3 348

[View the 2016-2017 Integrated Report](#)



## WPBTS 2017 Customer Satisfaction Survey

It's that time of the year again when we undertake our annual customer satisfaction survey to monitor our quality of service. We would like to encourage all blood users to please complete the survey (preferably online) by indicating your degree of agreement/disagreement with the ten statements. Thank you, your feedback is very important to us.

[Complete the survey online](#)

[Download the survey questionnaire](#)

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