

Blood Components Prepared by the Buffy Coat Production Method

- Information for the Transfusion Medicine LABORATORY -

Canadian Blood Services (CBS) is in the process of implementing the Buffy Coat component production method in Canada. This production method increases the yield of platelets and plasma from each unit of donated blood.

Some of the implications of interest to technicians/technologists are listed below:

Description of Change	Impact(s)
1. New product codes.	<ul style="list-style-type: none"> Add new product codes to LIS.
Red Blood Cells & Plasma	
2. Anticoagulant for whole blood collections will be CPD (and not CPDA-1 or CP2D).	<ul style="list-style-type: none"> For most transfusions, none. CPD has lower glucose levels.
3. RBC preservative solution will be Saline Adenine Glucose Mannitol (SAGM) rather than AS-3.	<ul style="list-style-type: none"> No significant impact identified. Because of lower diluent volumes left on red cells, visual appearance may be different – visual assessment guide in development from CBS expected to be available in 2008.
4. The products will be distributed in different bags.	<ul style="list-style-type: none"> Hospitals should use administration sets/transfer sets compatible with the new bags. See spiking studies posted on www.transfusionmedicine.ca. New ISO compliant bags must be spiked and un-spiked using the ¼ turn technique outlined on www.transfusionmedicine.ca. For sites that order allogeneic pediatric RBC's there will be one less satellite bag attached.
5. The port protectors are slightly different.	
6. Plasma from all whole blood donations will be frozen within 24 hrs (frozen plasma-FP) rather than within 8 hrs (fresh frozen plasma-FFP).	<ul style="list-style-type: none"> New boxes for storage are 2.5cm longer. Coagulation factor function retained at clinically suitable level in FP. Apheresis FFP will still be available. Cryoprecipitate labeled for Fibrinogen/VWF replacement not FVIII.
Platelets	
7. Platelets will be provided in pools obtained from 4 ABO-matched donors and suspended in the plasma from one of the male donors, for a final volume of about 300 mL and a total platelet count similar to that previously obtained from 5 donors.	<ul style="list-style-type: none"> Terminology for ordering platelets may need to be changed e.g. order “one unit or one adult dose of platelets” instead of “5 units of platelets.” Pediatric PLT doses may be addressed using either: <ul style="list-style-type: none"> whole blood random donor PLT (continuation with current PALL bag on a limited scale) removing aliquots from an apheresis or Buffy Coat PLT* The use of a sterile docking device when removing aliquots will maximize shelf life. PLT agitator must be able to accommodate new PLT bag. Some hospitals have used a magnetic clip to secure PLT to agitator tray if movement occurs.
8. Buffy coat platelets will be about the same size as the current apheresis platelets.	
9. All buffy coat platelets will be tested for bacterial contamination by CBS using the BacT/ALERT system.	<ul style="list-style-type: none"> There will be recalls associated with positive screening test results on platelets already issued to hospitals.
Autologous & Directed Donations	
10. Autologous blood will be collected in CPD and separated into SAGM red cells and plasma only.	<ul style="list-style-type: none"> Autologous RCC, but not whole blood, will be available. Autologous RCC will have a 42 day shelf life. Autologous plasma will only be available if indicated on “Physician Request for Consideration for Autologous Transfusion” form prior to donation (for rare indications).*
11. Directed donations will be collected in CPD and separated into SAGM red cells and plasma only.	<ul style="list-style-type: none"> Directed RCC will have 42 day shelf life. Directed frozen plasma will only be provided if compatible & requested on “Physician Request for Directed Donation” form.* Platelets from directed whole blood will no longer be available. Maternal apheresis platelets will still be available for NAIT treatment.
12. Directed whole blood will no longer be available.	

*Frozen plasma from autologous or directed donors will have a one year shelf life. Storage requirements should be discussed with the ordering MD to avoid long term storage issues.