1. **Principle**

Platelets maybe volume reduced in order to decrease the total volume of the component transfused or to partially remove ABO incompatible plasma.

1. **Scope and Related Policies**
   1. Each institution capable of reducing plasma volume in platelets must establish the criteria for volume reduction. The following are recommendations for volume reduction.
      1. In most cases small children cannot tolerate large volumes of plasma but may need relatively large numbers of platelets. Reducing the final volume is a practical solution as platelets can then be given by ‘IV push’ in a very short time.
      2. When ABO incompatible platelets are used, reducing the volume can mitigate the impact of incompatible ABO isoaggutinins. For neonates, it is desirable to avoid administration of plasma that is incompatible with the infant’s red cells
2. **Specimen**

Platelet component:

* Pooled Platelet
* Apheresis

**4.0 Materials**

**Equipment:** Balance scale

Refrigerated blood component centrifuge

Heat Sealer

Plasma extractor

Sterile connecting device

**Supplies:** Transfer set

Plastic over wrap

Balance supplies

Heat sealer clamps

0.9% Sodium Chloride for injection (10mL vials for neonates) at room temperature

Blunt fill needle

300mL transfer pack

Sampling site coupler

1. **Quality Control** 
   1. Equipment for centrifugation shall be maintained as per manufacturer’s recommendations including the speed of rotation and the timing device. 9.1
   2. The temperature, speed and processing time for centrifugation shall be checked and documented at each use.9.1
   3. Manufacturer’s instructions must be followed for all equipment.
2. **Procedure**

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| * 1. Turn on the centrifuge and allow the temperature to reach 22 - 24°C | |
| * 1. FOR NEONATES (partial unit) | 6.2.1 Attach a 300 mL transfer set to the apheresis platelet using the sterile connecting device. Transfer approximately 50 mL of volume to the transfer pack. Heat seal between the main apheresis platelet bag and the transfer pack. Main apheresis platelet bag can be put back on shaker in case additional aliquots are needed. Proceed to step 6.4 |
| * 1. FOR ADULTS (whole unit) | 6.3.1 Attach a 300 mL transfer set to the apheresis platelet using the sterile connecting device. Proceed to 6.4 |
| * 1. Place the platelet component and transfer set in a plastic over wrap bag and place in the centrifuge bucket. | |
| * 1. Balance the buckets and centrifuge at the following acceptable speed and time: 9.1 * 580xg for 20 minutes * 2000xg for 10 minutes   5000xg for 6 minutes | |
| * 1. Without disturbing the contents, transfer the bag from the centrifuge to the plasma extractor. | |
| * 1. FOR NEONATES: | * + 1. Sterile dock a new transfer bag to the centrifuged platelets.     2. Take off plasma (remove as much as possible).     3. Heat seal to separate bags.     4. Spike one port of the centrifuged platelets with a sampling site coupler. It is important to ensure at least one port is kept available for administration.     5. Add 10 mL 0.9% sodium chloride (room temperature) for injection with a blunt fill needle |
| * 1. FOR ADULTS: | * + 1. Take off plasma by expressing plasma into attached transfer pack.     2. Leave approximately 50 mL plasma on the platelet concentrate.     3. Heat seal to remove the bag with plasma. |
| * 1. A 60 minute resting period prior to mixing is required for platelets to allow them to regain their functionality, especially when platelets are fresh (< 24-48 hours old). Platelets can be resuspended sooner n case of extreme emergency (minimum rest time is 30 minutes). | |
| * 1. Resuspend platelets by gentle hand manipulation to allow for uniform suspension. | |
| * 1. Prepare the label for the reduced volume platelet bag with the following modified product information: 9.1 * Product name (e.g. reduced volume platelets) * Name of facility preparing component * Unique alphanumeric identification of component (See Procedural Notes 8.1) * ABO/Rh of component * Approximate volume of component * Time of expiry date of component  |  | | --- | | Label the reduced volume platelet bag with the following recipient information:9.1   * Recipient’s family and given name(s) * Recipient’s identification number(s) * ABO/Rh group of recipient |   See Procedural Notes 8.2 and attach a component label to reduced volume bag. | |
| * 1. Issue product. If there is no computer system used to issue blood components, write the patient and product information onto the Issue/Transfusion record. See IM.004 – Manual Issuing of Blood, Blood Components and Other Related Products Using the Issue/Transfusion Record. | |

1. **Reporting - N/A**
2. **Procedural Notes**
   1. Unit number must include the unit identification number, the check digit and the source code of the original unit.
   2. When labeling units, the following criteria should be met:

* Whenever possible, place the label onto the label on the transfer bag (avoid placing adhesive label directly on the plastic of the bag)
* Only labels with approved adhesive must be used on blood bags
* Do not use scotch tape, masking tape or other adhesives that are not approved
* Do not use felt pen on bag label
  1. Platelets are the component that is most likely to be contaminated with bacteria. See RT.012 – Investigation of Transfusion Complications.

1. **References**
   1. Standards for Hospital Transfusion Services. Ver 3 February 2011. Canadian Society for Transfusion Medicine. 3.3.2.1; 3.3.2.2; 5.7.2.1; 5.7.2.3; 5.1.1.1
2. **Revision History**

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| **Revision Date** | **Summary of Revision** |
| September 1, 2014 | * Revised name of manual * Added centrifugation requirements 6.3 * Removed reference to single units of platelets * Updated all references to include the most recent version/edition and adjusted the page numbers cited as necessary |
| July 18, 2016 | * Added supplies required for splitting platelet unit * Added work instructions to separate an aliquot for NEONATE prior to plasma reducing |