
 <p>DIAGNOSTIC SERVICES MANITOBA</p> <p>SERVICES DIAGNOSTIC MANITOBA</p>	<b>Platelets</b>		<b>Document #</b> 160-65-02
			<b>Version #</b> 01
	<b>Approved by:</b>  Dr. Charles Musuka	<b>Effective Date:</b> 22-JUN-2016	<b>Source Document:</b> Blood Product Administration Guidelines from Manufactures Monographs

<b>Other Names</b>	<ul style="list-style-type: none"> <li>• Pooled platelets LR CPD</li> <li>• Apheresis platelets</li> </ul>				
<b>Description</b>	<ul style="list-style-type: none"> <li>• Derived from whole blood and are treated by filtration to product a leukocyte-depleted product.</li> <li>• Pooled platelets are prepared from the buffy coats from four donations of the same ABO blood group, along with plasma from one of the same four donations.</li> <li>• Platelets are bacterial tested by CBS</li> </ul>				
<b>Special Approvals/authorizations</b>	<ul style="list-style-type: none"> <li>• An independent 2-person check is required for all doses, as per Canadian Blood Services.</li> <li>• Nurses and student nurses may administer red blood cells on the written order of the attending physician or designate.</li> </ul>				
<b>Classification</b>	<ul style="list-style-type: none"> <li>• If an adult dose is requested, the blood bank will issue either a buffy coat pooled PLT or an Apheresis single donor platelet.</li> <li>• ABO identical or compatible platelets may not always be available.</li> <li>• When platelets from Rh-positive donors are transfused to Rh-negative female of child bearing potential, prevention of D immunization by use of Rh Immune Globulin should be considered.</li> </ul>				
<b>Indications</b>	PLT count < 20 x10 <sup>9</sup> /L Prophylactic use (to prevent bleeding) when there a regenerative thrombocytopenia (e.g. chemotherapy, aplasia)	PLT count < 40 x 10 <sup>9</sup> /L Prophylactic use (to prevent bleeding) in a neonate	PLT count < 50 x 10 <sup>9</sup> /L Active bleeding, peri-operative, or planned invasive procedure (NOT indicated for idiopathic thrombocytopenic purpura – ITP, unless life-threatening bleeding)	PLT count < 100x10 <sup>9</sup> /L <ul style="list-style-type: none"> <li>• Surgery or bleeding into critical area ( e.g. spinal cord, brain, retinal hemorrhage)</li> <li>• Extensive microvascular bleeding (e.g. post cardiopulmonary bypass presumed to be secondary to acquired platelet dysfunction)</li> <li>• Neonate with bleeding, per-operative or planned procedure</li> <li>• Extracorporeal membrane oxygenation (ECMO)</li> </ul>	PLT count N/A Life-threatening bleeding or extensive wet purpura in ITP.
<b>Contraindications</b>	<ul style="list-style-type: none"> <li>• Do not use platelet components if bleeding is unrelated to decreased numbers of, or abnormally functioning, platelets.</li> <li>• Platelet components are not recommended for use in patients with destruction of endogenous and exogenous platelets, such as in thrombotic thrombocytopenic purpura (TTP), idiopathic thrombocytopenic purpura (ITP) or threatening hemorrhage.</li> </ul>				

**Platelets**

**Document #** 160-65-02

**Version #** 01

	<ul style="list-style-type: none"> <li>• Since platelet components contain donor plasma, recipients with known anaphylaxis to plasma should only receive platelet components under medical supervision.</li> </ul>
<b>Supplied</b>	<ul style="list-style-type: none"> <li>• Pooled platelets LR CPD have an average volume of 342 mL and a typical platelet yield of <math>313 \times 10^9</math>.</li> <li>• Apheresis platelets are from one donor and have an average volume of 329 mL and contain <math>351 \times 10^9</math> platelets per bag</li> </ul>
<b>Dosage</b>	<p><b>ADULTS:</b></p> <ul style="list-style-type: none"> <li>• 1 buffy coat platelet pool or 1 unit of apheresis platelet</li> </ul> <p><b>PEDIATRIC:</b></p> <p><b>Neonate (up to 6 weeks corrected) or &lt; 10kg body weight (or fluid volume is a concern):</b></p> <ul style="list-style-type: none"> <li>○ Prime the blood administration set &amp; tubing with the PLTs</li> <li>○ 10 mL per kg body weight infused over 1(recommended) to 1.5 hours dependent on vein/line size.</li> <li>○ Flush access device with 1-5 mL of 0.9% saline upon completion of transfusion.</li> </ul> <p><b>Pediatric or &gt;15 kg body weight:</b></p> <ul style="list-style-type: none"> <li>○ Prime the blood administration set &amp; tubing with 0.9% saline.</li> <li>○ 10 mL per kg/dose infused over 1(recommended) to 1.5 hours dependent on vein/line size.</li> <li>○ Flush access device with 10-20 mL of 0.9% saline upon completion of transfusion</li> </ul> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. The “post” platelet increment level is important and is recommended to determine the appropriateness of therapy or refractoriness. It should be collected 15 minutes to one hour after platelet transfusion.</li> <li>2. One dose of donor platelets should raise the platelet count by <math>10\text{-}12 \times 10^9/\text{L}/\text{m}^2</math> body surface area (BSA) or <math>5\text{-}10 \times 10^9/\text{L}</math> in a hematologically stable adult (BSA approximately <math>1.8 \text{ m}^2</math>).</li> </ol>
<b>Reconstitution/Stability</b>	<p><b>Stability</b></p> <ul style="list-style-type: none"> <li>• All platelet products are stored at 20-24°Celsius with gentle agitation for up to 5 days.</li> <li>• Platelets are fragile and are administered immediately. Careful handling is essential. Return immediately to the Blood Bank if the transfusion is postponed.</li> </ul> <p><b>NOTE: Platelets must <u>NOT</u> be refrigerated.</b></p>
<b>Compatibilities/Incompatibilities</b>	<p><i>Only isotonic, calcium-free intravenous solutions may be added to, or come in contact with blood products. Calcium will bind with the citrate anticoagulant and promote clotting in the tubing. Excess glucose and/or dextrose cause hemolysis and shorten red cell survival. The following solutions are acceptable:</i></p> <ul style="list-style-type: none"> <li>• 0.9% NaCl (normal saline) is the fluid of choice.</li> <li>• <b>MEDICATIONS MUST NOT BE ADDED TO BLOOD PRODUCTS.</b> If it is necessary to administer medications simultaneously with blood, it is safest to use an alternate site for the drug.</li> </ul>
<b>Administration, Identification and ABO Compatibility</b>	<p>Refer to <b>Manitoba Best Practice Guidelines</b></p> <ul style="list-style-type: none"> <li>• section 2.2 Standards- Identification and Administration</li> <li>• section 1.4 for ABO Compatibility</li> </ul>
<b>Administration, Method</b>	<p><b>Administration Set:</b></p> <ul style="list-style-type: none"> <li>• Administer through a standard blood transfusion set with a filter to remove gross fibrin clots and aggregates:             <ul style="list-style-type: none"> <li>○ Adults: 170-260 micron filter</li> <li>○ Pediatrics: 80-260 micron filter</li> </ul> </li> <li>• Set should be changed:             <ul style="list-style-type: none"> <li>○ A maximum of every 4 hours, or</li> <li>○ Four consecutive units of platelets have been infused through it, or</li> <li>○ More than 30 minutes has elapsed between transfusion/infusion, or</li> <li>○ Administering a different component, or</li> <li>○ The set has become occluded.</li> </ul> </li> <li>• Normal saline should be used to prime the administration set for adult administration.</li> </ul>

**Platelets**

**Document #** 160-65-02

**Version #** 01

**Infusion Rate:**

- Recommended infusion time is over 10-30 minutes per dose. Rate is specified by the ordering physician or authorized prescriber.
- The initial rate of infusion should be slow (less than 1 mL/minute) for the first 15 minutes of the infusion, unless urgent replacement is required. If the patient exhibits no signs of reaction and is tolerating the transfusion, the rate may be increased as per the physician order.

**Adverse Events**

Refer to **Manitoba Best Practice Guidelines** section 2.7 for transfusion reactions.

**Resources:**

1. Manitoba Transfusion Medicine Best Practice Resource Manual for Nursing, June
2. Canadian Blood Services Guide to Transfusion  
<http://www.transfusionmedicine.ca/resources/clinical-guide-transfusion>
3. AABB Transfusion Therapy Clinical Principles and Practice (reference)
4. Bloody Easy 3