Other Names	• Whole Blood • Lr Whole Blood (LrWB)
Description	• LrWB is a human blood component manufactured by Canadian Blood Services. • Each unit of LrWB is made from an individual donation of whole blood and contains red blood cells, platelets, and plasma in similar proportions to human whole blood. The white blood cell content has been reduced using a leukocyte filter that preserves the platelet count. • LrWB, is a component derived from Whole Blood by reducing the leukocytes to a maximum residual content. • LrWB contains an approximate hemoglobin content of 62 g per unit. • LrWB contains less than 0.2 x 10^6 per unit leukocytes • Each Unit of LrWB has a larger volume than RBCs (~496mL vs ~287mL) • The hematocrit of LrWB is lower than RBCs, (~41% vs ~ 67%) • Each Unit of LrWB contains ~234ml of group O plasma • The iron content of a typical unit is approximately 210mg per unit
Special Approvals/ Authorizations	• Qualified transfusionists may administer plasma from the written order of the attending physician or designate. • Whole Blood Leukocytes Reduced can be irradiated where indicated according to evidence-based guidelines. • **Only STARS and Health Sciences Center Adult Emergency Department are able to initiate whole blood transfusions unless otherwise approved by the Transfusion Medicine physician on call.**
Classification	• None

Indications	• Patients with anemia with evidence of impaired oxygen delivery
	• Acute blood loss, chronic anemia, and cardiopulmonary compromise, or disease, medication effects associated with bone marrow suppression
	• Patients with acute blood loss: volume replacement is often more critical than the composition of replacing fluid.
	• There is no single value of hemoglobin to justify a transfusion; evaluation of the patient's clinical situation should be the determining factor when deciding to transfuse Emergency Blood:
	  ○ Uncrossmatched, group O Rh negative or positive blood, administer as follows:
	  ▪ Rh negative if person is of childbearing potential 45 years or younger
	  ▪ Rh positive if person is not of childbearing potential 45 years or younger or person is greater than 45 years of age.
	  ○ K negative cells should be given to people of childbearing potential 45 years or younger. In emergencies or circumstances in which K negative cells are not available, K untested or K positive cells may be provided.
	• In an emergent situation emergency LrWB is approved to be transfused
	• Must be stored in an approved fridge
	• LrWB in an emergency can be transfused rapidly via rapid infuser, push pull syringe method or pressure bag.
	• In emergency situations, RhD-negative female recipients of child-bearing age or younger should may be transfused with Lr WB from RhD-positive donors

Contraindications	• LrWB is not suitable for clinical situations where limited oxygen-carrying capacity is not due to red blood cell deficiency or dysfunction. • LrWB should not be given for volume replacement or any other reason than correction of acute or chronic anemia when non-transfusion alternatives have been assessed and excluded.
Supplied	• Each Unit of LrWB has a larger volume than RBCs (~496mL vs ~287mL)

Dosage	• Clinical signs and symptoms of hypoxia, ongoing blood loss and risk of anemia to the patient need to be considered when determining dosing.
Reconstitution/Stability	• Product must be returned to a monitored blood bank fridge or cooler within 60 minutes of removing product if not used or it must be discarded. • Freezing or heating LrWB may cause hemolysis and may harm the patient.
Storage	• LrWB should be stored at 1-6°C in a monitored blood bank cooler or fridge. • LRWB has a 21-day shelf life • Red Blood cells in the unit may settle during storage and can be resuspended using gentle agitation • Do not place product in an unmonitored cooler or fridge. • Once the bag is breached, the unit should be transfused within 24 hours if maintained at 1 - 6°C or within 4 hours if stored above 6°C.
Compatibilities/ Incompatibilities	• LrWB may be transfused with the following solutions: ○ Normal Saline *Medications must not be added to blood products. If it is necessary to administer medications simultaneously with blood or blood components, it is best to use an alternate intravenous site.
Administration, Identification and ABO Compatibility	• An independent 2-person check is required with every LrWB administered. • Refer to Manitoba Transfusion Best Practice Resource: ○ Guideline 3: Patient identification of blood, blood component. and/or blood product administration. Introductory Chapters for ABO Compatibility • The donor sample is tested for ABO group, RhD type, anti-A and anti-B titres and clinically significant antibodies against red cell antigens. ABO, RhD, and if present antibody identity, are indicated on the product label. Units determined to be Low Anti-A/B will be labeled as such

Administration, Method	• Administration Set:
	  ○ Administer through a standard blood transfusion set with a filter to remove gross fibrin clots and aggregate.
	• Sets should be changed:
	  ○ A maximum of every 4 hours, or
	  ○ When four consecutive Lr Whole Blood units have been infused through it, or
	  ○ More than 30 minutes has elapsed between transfusion/infusion, or
	  ○ If administering a different component, or
	  ○ Set had become occluded.
	• Infusion rate depend upon the patient's blood volume, cardiac status, and hemodynamic condition and are predetermined by the patient's physician,
	• A blood warmer or infusion device licenced by Health Canada for that purpose may be used at the discretion of the attending of physician.
	• In cases where heavy bleeding, clinical signs and symptoms of hypoxia, ongoing blood loss and risk of anemia to the patient need to be considered when determining a dose. The volume of LrWB administered to a patient should not exceed 4 units to reduce the hypothetical risk of an acute hemolytic reaction due to anti-A/B antibodies.

Monitoring	• Refer to Manitoba Transfusion Best Practice Resource Guideline 5-Monitoring of Patients Receiving a Tansfusion • The qualified transfusionist must remain with the patient for the first 15 minutes of the transfusion and be available for the remainder of the transfusion. • Vital signs are to be monitored within 30 minutes prior to the transfusion, 15 minutes after start of transfusion, every hour during, at the end of the transfusion and if clinically indicated. • Vital signs for in patients, should be recorded one hour after completion of the transfusion

Adverse Events	• Refer to the Manitoba Transfusion Best Practice Resource Guideline 7-Tranfusion Reaction-Identification, Management and Reporting.
Additional Notes	• Validated transport systems must ensure that at no time during a maximum transit time of 24 hours did the temperature exceed +10^{o}C • Compared to traditional component use, citrate exposure is lower and iatrogenic hypocalcaemia risk may be lower. • Each unit undergoes the same infectious disease testing as other blood components manufactured by CBS. • LrWB is collected using citrate phosphate dextrose (CPD) anticoagulant. • Red blood cell antigens tested and found to be negative are indicated on the eye readable portion of the label. Positive and negative antigen results are included in the barcode. • A donor sample is only tested for antibodies to Trypanosoma cruzi (T. cruzi or Chagas Disease) and the presence of viral RNA [West Nile Virus (WNV)] when increased risk is present. • In some emergency situations, with the approval of both Canadian Blood Services and recipient's physician, partially tested or untested blood may be released for transfusion • DEHP plasticizer leaches gradually into the Whole Blood Leukocytes Reduced during storage. Currently, there is no scientific proof that DEHP, which is used in the composition of a large number of medical devices, may represent a toxicity risk for recipients exposed during a transfusion. • Whole Blood Leukocytes Reduced should not be volume reduced. • Some collection needles are in contact with latex. Canadian Blood Services cannot guarantee that this product is latex free.
Resources:	• MB Transfusion Medicine Best Practice Resource Manual • Canadian Blood Services Guide to Transfusion • National Advisory Committee on Blood and Blood Products • NZ Blood Component Monograph Whole Blood, Leucocyte-Depleted • Linking Investigations in Trauma and Emergency Services Task order 0007 • Canadian Blood Services Circular information for the use of Human Blood