



ACCES Recommended Protocol for Administration of Canine Packed Red Blood Cell

· Canine Packed Red Blood Cells (PRBCs) are the treatment of choice for anemia. They contain very few white blood cells, platelets, or coagulation factors.

· *Always know the blood type of your donor and recipient.* ACCES negative universal PRBCs are the true universal blood type – DEA 1.1, 1.2, 3, 5, and 7 negative. This blood type can be safely given to any other blood type in dogs. DEA 1.1 Positive blood should never be given to a DEA 1.1 Negative dog.

· It is always a good idea to cross match the unit of blood to be transfused against the recipient. Even if they are the same blood type, a transfusion reaction is still possible. Blood typing and cross matching services are available through ACCES.

· To administer PRBCs, first remove the unit from the refrigerator and warm up to room temperature. Do not use a warm water bath or put red cells in the microwave! Wrap them in a towel, or warm under your arm.

· Examine the patient and establish a baseline TPR. Make sure that the IV catheter is patent. Discontinue any other medications and fluids during transfusion administration unless specifically told otherwise by your veterinarian. Also begin a transfusion record, including patient information, donor and recipient blood types, the unit's donor and unit numbers, TPRs, and administration rates during transfusion.

· Calculate administration rates. Once blood has been warmed to room temperature, it is only good for 4 hours, so calculate administration rates accordingly. A very slow administration rate should be used initially, as the patient is closely monitored in the first 15-30 minutes of the transfusion for any signs of reaction. 1 ml/kg/hour is a safe rate for the first 15 minutes, then titrated to finish within 4 hours.

· Generally, blood products cannot be put in IV pumps. Most pumps pinch the IV lines when the door is closed, and this can lyse the red blood cells being transfused, rendering them ineffective. Also, the IV lines on filtered administration sets are thicker, and IV pumps are not calibrated for them, so the administration rate programmed into the pump is not necessarily what the animal is receiving.

· Therefore, administration rates need to be calculated from the amount of drops per ml. This number is specific for each type of administration set, and should be found on the packaging.

· A sample calculation for an administration set that approximates 10 drops/ml:

$10 \text{ drops/mL} \times 20 \text{ mL/hr} \times 1 \text{ hour}/60 \text{ minutes} = \sim 3.3 \text{ drops a minute to achieve } 20 \text{ mL/hr.}$

· To hook up the unit of packed red blood cells, use a Y-type administration set. This administration set should have a filter on it. Also gather the unit of blood to be transfused and a 250 ml bag of saline. (Pictured right)

· Close off all the clamps to the Y-set. Use one spike to access the unit of blood, and the other to spike the 250 ml bag of saline. Appropriate administration sets are available through ACCES.

· Release the two clamps closest to the blood and the saline. Hold the saline over the blood bag so that about 50 mLs of saline flow into the bag of blood, then re-clamp. ACCES Blood Bank packed red blood cells are quite concentrated, and diluting them with saline prevents them from being too viscous. Remember to add this amount to your total volume when calculating administration rates.

· Unclamp the clamp closest to the blood bag above the filter, keeping the others clamped. Squeeze the filter so that blood travels down the top of the line and fills the filter. It is important for the filter to be filled at least three-quarters full so that it is working at maximum efficiency. Once this has been achieved, release the clamp below the filter and allow blood to run through the line.

· Once a transfusion has been started, watch the patient carefully, especially in the first hour for signs of a transfusion reaction. Report any vomiting, facial swelling, hives, or changes in temperature or more than 1 degree Fahrenheit to the doctor.

· **If you have any questions, please feel free to contact ACCES at any time.**

