

# Red Blood Cell Exchange (RBCX) Ordering Considerations



<b>Pre-Procedure Lab Testing to be Ordered</b>	<ul style="list-style-type: none"> <li>■ HbS</li> <li>■ Hct for replacement RBC (if able)</li> <li>■ Other</li> </ul>	<ul style="list-style-type: none"> <li>■ CBC</li> <li>■ Chemistry</li> <li>■ Screen replacement RBC for sickle cell trait</li> </ul>
<b>Parameters for Exchange to be Specified</b>	<ul style="list-style-type: none"> <li>■ Target fluid balance</li> <li>■ Target end Hct (patient)</li> <li>■ Target FCR or volume (mL) of replacement RBC</li> </ul>	
<b>Parameters for Depletion/Exchange<sup>1</sup> to be Specified</b>	Fluid Type for Depletion <ul style="list-style-type: none"> <li>■ Saline</li> <li>■ Plasma</li> </ul>	<ul style="list-style-type: none"> <li>■ Albumin</li> <li>■ Other</li> </ul>
	<ul style="list-style-type: none"> <li>■ Target fluid balance</li> <li>■ Minimum Hct (for depletion phase)</li> </ul>	<ul style="list-style-type: none"> <li>■ Target end Hct (patient)</li> <li>■ Target FCR or volume (mL) of replacement RBC</li> </ul>
<b>Post-Procedure Lab Testing to be Ordered</b>	<ul style="list-style-type: none"> <li>■ HbS</li> <li>■ CBC</li> </ul>	<ul style="list-style-type: none"> <li>■ Chemistry</li> <li>■ Other</li> </ul>

<b>FCR<sup>2</sup></b>	Fraction (%) of original cells (RBC) to remain in the patient post procedure: $\frac{\text{Post HbS\%}}{\text{Pre HbS\%}}$
<b>Minimum Hct Defined</b>	Targeted Hct to deplete the patient to during the depletion phase of the depletion/exchange prior to the exchange phase

References	
<b>Depletion/Exchange<sup>1</sup></b>	Kim HC, et al., "Erythrocytapheresis Therapy to Reduce Iron Overload in Chronically Transfused Patients with Sickle Cell Disease." <i>Blood</i> 1994;83(4):1136–1142.
	Sarode R, et al., "Advantages of Isovolemic Hemodilution-Red Cell Exchange Therapy to Prevent Recurrent Stroke in Sickle Cell Anemia Patients." <i>J Clinical Apher</i> 2011;26(4):200–207.
<b>FCR<sup>2</sup></b>	Cabibbo S, et al., "Chronic RBC Exchange to Prevent Clinical Complications in Sickle Cell Disease." <i>Transfus Apher Sci</i> 2005;32:315–321.
	Adams D, et al., "Erythrocytapheresis Can Reduce Iron Overload and Prevent the Need for Chelation Therapy in Chronically Transfused Pediatric Patients." <i>J Pediatr Hematol Oncol</i> 1996;18(1):46–50.
	Kozanoglu I, et al., "Automated Red Cell Exchange Procedures in Patients with SCD." <i>Transfus Apher Sci</i> 2007;36:305–312.
<b>Hct, FCR, Depletion/Exchange</b>	Clinicaltrials.gov

Abbreviation Definitions			
<b>HbS</b>	Hemoglobin S	CBC	Complete blood count
<b>FCR</b>	Fraction of cells remaining	Hct	Hematocrit

Patient condition and procedural goals must be considered when determining parameters and targets.