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Double Red Cell Collection Fact Sheet

The Problem: Chronic Blood Supply Shortage in the United States

The blood supply in the U.S. is currently low and continues to decline as the demand for blood is growing faster than the rate of blood donations. Blood is needed for a wide variety of procedures, such as for cancer patients, accident victims and people undergoing surgeries. With a limited blood supply, the least critical surgeries are at risk to be canceled, since blood must be reserved for and allocated to acute needs first. Currently only five percent of the eligible donors in the U.S. give blood, and the supply of red blood cells barely serves the growing need. To put this need into context, currently more than 4,000 gallons of blood are used in the U.S. every day — and the amount is increasingly daily.

A Solution: The MCS®+ System for Double Red Cell Collection

In response to the ongoing need to increase the nation's blood supply, Haemonetics Corporation (NYSE: HAE) developed an advanced, automated technology which can collect two units of red blood cells from a qualified donor in one sitting. Haemonetics automated blood collection system is called the MCS+ system. This unique system provides benefit to all participants in the donation chain: donors, blood banks and patients.

For qualified blood donors, the MCS+ system means they can now give more blood at one time because they can only give red blood cells and not the plasma component of the blood. In fact, with a double red cell donation, the donors actually lose a lower volume of blood than they would after giving a pint of whole blood. This reduces their number of visits to the blood bank, thereby making donation more convenient. The blood collection kit used to draw the blood uses a smaller needle, making the process more comfortable for many donors. Donors get saline throughout the donation doing away with the dizziness and nausea that some donors feel.

For blood banks, the MCS+ system can increase the number of units of red blood cells collected without the corresponding need to increase the number of donors. For facilities in large, metropolitan areas (such as New York and Los Angeles) where the need for blood is consistently high, the MCS+ system can help them better meet local needs without importing blood from other areas of the United States or from foreign countries. This is beneficial, since importing blood is costly and further drains blood banks' limited resources. Additionally, when blood banks spend money on imports, money is often taken from the operating budget to support recruitment activities, thereby reducing the number of donors and increasing the need for imports – a "catch 22."

Patients who require blood transfusions benefit from the MCS+ system by knowing that advanced medical technology is helping to ensure that an ample, safe blood supply is available whenever and wherever it is needed.

To qualify to donate double red cells using the MCS+ system, donors must meet the guidelines for a whole blood donation for giving a pint of blood. That is, you must be over age 17 and be in good health. Additionally, male donors must be a minimum 5'1" tall and weigh 130 pounds or more and female donors must be at least 5' 5" tall and weigh 150 pounds or more. To ensure donors are in optimal condition to donate, they must have a high hematocrit and they must wait about four months between double red blood cell donations.

If potential donors do not meet the two-unit red-blood cell height and weight requirements, they are still eligible to use automated technology to donate platelets or one unit red blood cells/one unit plasma.

How the MCS+ System Works

The MCS+ system works via a two-phase process. The process begins by collecting one unit of whole blood from a donor. The blood is fed through tubing into a centrifuge and spun until the blood separates into parts. Denser blood components, such as red blood cells, remain on the bottom, whereas lighter blood components, such as

plasma and platelets, rise to the top. The red blood cells can then be expressed off into a blood collection bag. This process is repeated again, so that two units of red blood cells are collected. Once the red blood cells are collected, the remaining blood components – the platelets and plasma, along with saline, are returned to the donor. The entire process takes between 30 to 45 minutes and every part of the collection kit that touches the donor is sterile, used only once, and then discarded.

The MCS+ System in the Mobile Blood Collection Environment

The MCS+ system was designed to work well in both “fixed” locations (such as a permanent, community blood bank site) and in the mobile blood collection environment (such as at on-site, corporate blood drives). This is critical since an estimated 70 percent of all blood collected in the United States is collected from a mobile setting. The MCS+ system is compact, relatively lightweight (56 lbs.), easily portable, and simple to set up and use. It is designed to withstand the wear and tear inherent in transporting a medical device.