

# Building an Ethnically Diverse Cord Blood Inventory: A Single Institution's Initiative to Increase African American Donations

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## Abstract

In 2005, the United States congress passed the Stem Cell Therapeutic and Research Act. A central component of this legislation was the development of the National Cord Blood Inventory (NCBI). A competitive bidding process was instituted and to date three cohorts of banks have been funded with the charge to collect and store 150,000 new cord blood units. A goal in the development of this new inventory is to increase the number of cord blood units from underrepresented racial and ethnic groups.

The St. Louis cord Blood Bank (SLCBB) began participating in this program in September of 2007. The focus for our bank in achieving the goal of diversification was to establish strategies for recruiting African American donors. Historically, this ethnic group had not widely participated in cord blood donation in the St. Louis area.

A pilot study was instituted by the SLCBB at SSM St. Mary's Health Center in October of 2007. This hospital was chosen due to its diverse patient population. We hypothesized that the insertion of a dedicated staff nurse into this facility, to educate and communicate directly with potential donors, would result in a significant increase in donations from African Americans.

The results from this study are dramatic. A total of 531 cord blood units were collected during the study period (October 16, 2007 – October 15, 2008) as compared to 56 cord blood units during the previous 12 month period ( $p < 0.0001$ ). This equates to a 848% increase in African American donations.

This pilot study demonstrated that the SLCBB initiative was successful not only in increasing the donation rate among African Americans, but also an awareness of the life-saving benefits of cord blood.

While donations have increased at a significant rate, the proportion of these units meeting storage criteria is low. Of the 531 African American units collected in the study, only 11.7% met banking guidelines as compared to 22.0% for Caucasians, 26.7% for Asians, and 20.0% for Hispanics. African American units not meeting storage criteria were deferred primarily for low volume (54.7%) and total nucleated cell count (25.2%). Acknowledging that biologic factors negatively impact the recovery of nucleated cells from cord blood collected from this population, the SLCBB is currently designing a Phase II study to assess alternative methods to increase collection volumes and cellular yield for African American donors.

## Background

The St. Louis Cord Blood Bank at SSM Cardinal Glennon Children's Medical Center serves as the only public cord blood bank in the state of Missouri. The SLCBB receives donations from 29 hospitals in Missouri and Illinois. The SLCBB utilizes an OB collection model and has over 400 physicians and midwives actively collecting for the program. This is a voluntary program and no costs are incurred by the hospital or donor. The hospitals and physicians receive no monetary compensation for their services.

Since the program's inception in 1996, nearly 80,000 mothers have donated their cord blood to the SLCBB. Only 13.8% of these donations have come from minority populations. African Americans comprise approximately 12% of the births in the St. Louis metropolitan area, yet only 4.8% of the total cords donated. It was hypothesized that by targeting a specific hospital with a high proportion of African American births, we could increase cord blood donations from a population historically under represented in our bank.

SSM St. Mary's Health Center was selected for several reasons. One, it is part of the SSM network for which Cardinal Glennon Children's Medical Center is a member. It has a large OB department which performs approximately 3,000 deliveries per year. Approximately 75% of these are from African American women. The close proximity of the hospital and associated clinics to the SLCBB was also a factor as it allowed for easy access by the nurse recruiter.

## Objective

Increase the cord blood donation rate for African Americans at a single institution.

## Materials & Methods

A donor recruiter and outreach coordinator were hired to facilitate donor recruitment efforts at SSM St. Mary's Health Center and surrounding clinics. The donor recruiter, a registered nurse, was onsite in the labor and delivery unit to:

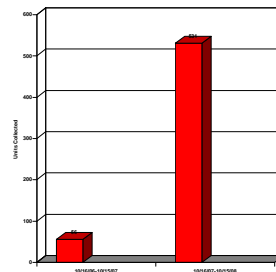
- Educate clinicians
- Create incentive program to increase nursing staff participation
- Educate potential donors
- Provide assistance for completion of paperwork
- Distribute educational materials throughout the labor and delivery unit
- Make presentations at birthing classes

Responsibilities for the outreach coordinator included:

- Education of physicians regarding proper cord blood collection technique
- Development of donor education materials targeting minority populations
- Distribution of donor education materials
- Attendance at health fairs and other sponsored events to promote the program
- Creation of public service announcements targeting minority populations

## Results

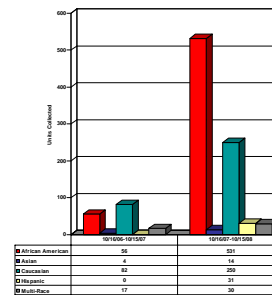
African American Collections



Donor recruitment efforts were successful with the target population. African American donations increased by 848% during the study period.

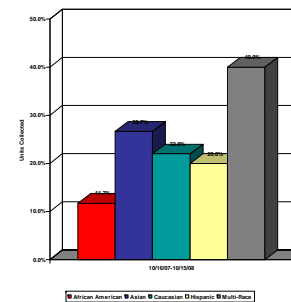
## Results - continued

Collections – All Ethnicities



The impact of the recruitment initiatives was not limited to the African American population. An increase in cord unit collections was realized for all ethnic groups at the study site.

Storage Rates



While African American donations have increased at a significant rate, the proportion of these units meeting storage criteria is low when compared to other ethnic groups.

## Discussion

The introduction of a donor recruiter at the collection site and associated clinics proved successful in increasing donation rates for African Americans.

Although the study was a success, there are challenges and limitations associated with its replication across all SLCBB collection sites. These challenges and limitations include:

**Financial Commitment** : To duplicate the effort initiated at St. Mary's would require the addition of 1 full time equivalent at each collection institution

**Donor Deferral Rate**: A high percentage of the African American units collected did not meet storage criteria. Donations were deferred primarily for low volume, total-nucleated cell count, and medical history issues.

The SLCBB is currently designing a Phase II study to assess alternative methods for increasing collection volumes and cellular yield for African American donors.

The SLCBB has expanded this study to a second collection site in an attempt to duplicate the success of the initial pilot. We are also monitoring the collection activity at St. Mary's Health Center without a full-time onsite designated recruiter.