



Published in final edited form as:

Curr Opin Hematol. 2010 November ; 17(6): 544–549. doi:10.1097/MOH.0b013e32833e5ac7.

Minority Donation in the United States: Challenges and Needs

Beth H. Shaz, MD[Chief Medical Officer][Adjunct Professor] and
New York Blood Center

Department of Pathology and Laboratory Medicine, Emory University School of Medicine

Christopher D. Hillyer, MD[President and Chief Executive Officer]
New York Blood Center

Abstract

Purpose of review—In the United States, blood donation rates of African American are 25-50% of that of white individuals. As African Americans make up an ever increasing and now substantial minority, and African American recipients of blood transfusion, both specialized, such as sickle cell disease patients, and general hospitalized patients, have a better chance of receiving phenotype-matched or appropriate red blood cell units when there is a significant percent of products in inventory from African American donors, it is important to understand the reason for the observed difference.

Recent findings—Possible reasons for this discrepancy in donation rates include: 1) increased rates of donor deferral and ineligibility; 2) increased barriers to donation, such as fear and distrust; and 3) different marketing and education strategies. Thus, to increase the blood availability to African American recipients, the reasons for these donation rate differences must be better understood and subsequently addressed through improved blood donor recruitment programs. The majority of African American donor recruitment programs have focused on donating for sickle cell disease patients, particularly children, which have been of limited success.

Summary—Significant improvements in African American donor recruitment are needed to adequately meet the demand of African American patients as well as the entire population.

Keywords

blood donation; donor eligibility; motivators to donation; barriers to donation

INTRODUCTION

Blood collection and transfusion are crucial to the functioning of a self-sufficient community based healthcare system in the United States (US) and in the world. In the US, 15,688,000 red cell units were collected in 2007 from 9,552,000 volunteer allogeneic donors and 14,461,000 units were transfused[1]. African American are approximately half as likely to donate as whites. To address this discrepancy, the reasons for these differences in blood donation rates must be understood. These lower rates may be secondary to decreased donor eligibility, increased donor deferral, different motivators and barriers to donor recruitment,

Corresponding author: Beth H. Shaz, MD, New York Blood Center, 310 E 67th St, New York, New York 10065, Telephone: (212) 687 1765, Fax: (212) 687 1512, bshaz@nybloodcenter.org.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

requirement of different marketing strategies and less trust in the health care system[2]. With this knowledge African American recruitment programs can be developed to increase donation rates.

Minority donors are underrepresented

Race/ethnicity as well as education, age and nativity influence blood donation rates. Recent data from six blood centers throughout the US calculated a representation ratio of donors (specific donor to all donors over specific census over all census) for 2006; this study calculated a ratio of 0.4 (range 0.2- 0.5) for Asians, 0.5 (range 0.3-0.7) for African Americans, 0.5 (range 0.4-0.9) for Hispanics, and 1.1 (range 1.0-1.4) for whites[3]. In another study using data from the National Survey of Family Growth, history of blood donation since 1985 in men aged 25-44 was lower in Hispanics, African Americans and others compared to whites (OR 0.66, 0.64 and 0.67, respectively)[4]. In addition rates were lower for those born outside versus inside of the US (OR 0.62), and lower for those with less than high school degree versus high school education or more (OR 0.67). In the Atlanta metropolitan area, the blood donor rate (number of blood donors per population) was 1.1% for whites, 0.6% for African Americans and 0.3% for Hispanics and the blood donation rate (number of units donated by population over the total population) was 7.7% for whites, 2.2% for African Americans and 1.0% for Hispanics[5].

Importance of underrepresentation—US Census data demonstrate a change in the racial and ethnic composition with substantial increases in some minority groups and minorities approaching one third of the total population[6]. Thus, it is increasingly important to recruit minority donors to ensure an adequate blood supply for the entire community. In addition, red blood cell products donated by African Americans are especially important for the treatment of sickle cell disease patients[2]. Red blood cell transfusions are frequently used to prevent or treat complications of sickle cell disease. Sickle cell disease patients are best transfused with phenotype-matched red blood cell transfusions to prevent the formation of red blood cell alloantibodies, which can result in hemolytic transfusion reactions and difficulty finding appropriate allogeneic red blood cells for future transfusions. The phenotype-matched red blood cell products are garnered from donors of similar genetic background, i.e. African Americans donors, and therefore there must be an adequate supply of red blood cell products donated by African Americans to fulfill this need. The difficulty of finding phenotype compatible units for patients with sickle cell disease as well as other alloimmunized patients was recently highlighted in an article using molecular testing to determine the donor red cell phenotype and create an adequate hospital inventory[7]. An adequate hospital inventory for these patients requires the diversification of the donor bases with increasing African American donor recruitment.

Reasons for underrepresentation

Lower rates of donation in African Americans versus whites may be secondary to decreased donor eligibility, increased donor deferral, different motivators and barriers to donor recruitment, requirement of different marketing strategies and less trust in the health care system (Table 1).

Decreased donor eligibility—The proportion of a population that is eligible to donate may differ for various racial and ethnic populations. Indeed, African Americans have higher incidence of sickle cell disease[8], cancer[9], hypertension[10,11], diabetes[12], renal disease[13], Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome[14], and anemia[15]. Furthermore, the average hemoglobin value of African Americans is between 0.5-0.7 g/dl lower than that of whites. In addition, iron-deficiency anemia is more prevalent among minorities, especially women[16].

Donor eligibility criteria are designed to protect both donor and recipient[17]. The Food and Drug Administration's Code of Federal Regulations and the AABB *Standards for Blood Banks and Transfusion Services* regulate these criteria[18,19]. Conventional methods for calculating blood donor eligibility used only age adjustment, therefore it was calculated that 60% of the total US population was eligible[20]. Riley et al published estimates of the donor pool based on an exclusion adjusted method and concluded that 37.8% of the US population is eligible[20]. Results of an alternate donor exclusion model to estimate percentage of eligible donors in the US population by demographic variables: race/ethnicity, gender and age are presented in table 2[21]. Differences in these eligibility rates are secondary to modeling differences as well as different sources of national data.

Increased donor deferral—Donor deferral results in loss of potential donation as well as potential loss of a donor. Temporarily deferred donors, particularly those presenting for the first time, return less frequently for subsequent donation than those who were successfully able to donate[22]. One study demonstrated a non-deferred donor was 29% more likely than a deferred donor to return and gave 81% more products over a 4.25 year period[23]. A recent study to better understand the consequences of donor deferral on blood donor return rates reported that deferral, race, age, and educational attainment were associated with rate of donor return[22].

Donor deferral rates in metropolitan Atlanta, Georgia significantly differed by race/ethnicity, gender, and age[24]. Overall, 13.4% of individuals, age 16-69, presenting from 2004 to 2008 to donate, were deferred. African Americans had the highest deferral rate (deferrals/ presentations; 17.9%), followed by Asians (16.1%), Hispanics (14.1%) and whites (11.0%). Differences in donor deferral rates were also noted by gender (female 20.0% and male 6.2%). African American females had the highest deferral rate (23.8%) compared to white (16.9%) and Hispanic females (20.2%). African American men also had the highest deferral rate (7.5%) compared to white (5.1%) and Hispanic men (6.5%). Multivariate analysis determined significant difference by race (African American versus whites [OR 1.21, CI 1.14-1.29, $p < .001$]), age (age 35-50 versus 50-69 [OR 0.97, CI 0.94-0.99, $p = .004$]), and gender (female versus male [OR 3.75, CI 3.70-3.87, $p < .001$]).

Causes of deferral: In the above study, the top ten reasons for deferral accounted for 90% of all deferrals. Nine of the ten most common reasons for deferral resulted in temporary deferral (low hemoglobin, travel, abnormal blood pressure, pulse or temperature, inability to find vein, tattoo/piercing, infection or taking antibiotics, and not being in good health); one resulted in permanent deferral (new variant Creutzfeldt-Jacob disease risk). The most common reason for deferral was low hemoglobin, which accounted for 65% of all deferrals.

The Retrovirus Epidemiology Donor Study-II group investigated demographic characteristic of low hemoglobin deferral among prospective donors[25]. 9.9% of donation attempts resulted in low hemoglobin deferral; females had 11 times greater odds than males, males had increasing odds with increasing age, and both African American men and women had over twice the odds as white men and women for low hemoglobin deferral. In addition, there were significant blood center differences in rates of low hemoglobin deferral even when corrected for demographics, which may be related to blood center procedures or differences in hemoglobin values in their communities or targeted donor population.

Methods to decrease donor deferral rates: Notable racial differences in deferral rates could be addressed to improve successful donation rates. In the study of donor deferral in Atlanta, over 7% of deferrals in African Americans were for inability to visualize or palpate veins. Phlebotomist education could address this major reason for deferral and have a significant impact on the blood supply[24]. Next, in the 26th edition of the AABB Standards

for Blood Banks and Transfusion Services, blood pressure and pulse measurements are no longer required for blood donation due to lack of correlation with adverse donor reactions and, thus, no longer a reason for deferral[18,26]. These were both in the top ten reasons for donor deferral, especially men. Last, low hemoglobin remains the major reason for deferral, up to 30% of all presentations in some demographic groups, highest in minority females. Approaches to decreasing deferrals secondary to low hemoglobin include iron supplementation programs[27,28], decreasing the female hemoglobin cut-off, decreasing the volume of blood removed and increasing the time period between donations[17,25].

Different motivators and barriers to donor recruitment—To increase blood donation within the African American community, it is critical to understand the motivators and barriers to blood donation. Historically, the major motivators to blood donation have been altruism, awareness of the need to donate, a sense of social obligation, personal social pressure, need to replace blood used, and increased self-esteem[29]. One study determined that African American donors were more likely than white donors to donate to receive an item/ gift or health screen or be tested for an infectious agent[30]. Another study of African American and white donors demonstrated African American donors more often donated to help save a life and whites more often donated because it is the right thing to do[31]. In a small sample of young African American women, the primary donation motivator was to increase awareness about the need for blood, with an emphasis on the importance of transfusions for the treatment of children with sickle cell disease[32]. In a study of African American female college students, motivators for donors and non-donors were similar and included convenience, university involvement and feeling of self-satisfaction[33]. In a study of African American church attendees, the most agreed with motivators were to help save a life and because blood is needed[34]. Lastly, a survey sent out to African American and white registered voters demonstrated major motivators to blood donation were similar between the two groups: convenient times and place, and being asked[35]. African Americans were significantly more likely to agree with three motivators than whites: donating for special recognition or reward, assurance donating is safe, and to be tested for infectious disease.

Historically, the principal barriers to blood donation are fear, inconvenience, perceived medical disqualification, being too busy, not being asked, and apathy.[29] African Americans, more often than whites, cited bad treatment and poor staff skills as reasons not to donate[36]. In a study of young African American women, the most important reason for not donating was inconvenience, followed by fear of needles and taking too much time[32]. In a study of African American college students, non-donors compared to donors were more likely to be afraid of donation and less often agreed that the blood supply is safe[37]. In a study of African American church attendees, the most common cited barrier to blood donation was fear[34]. Lastly, in a study surveying African American and white registered voters, major barriers were similar between the two groups: inconvenient place and fear of needles, pain or discomfort[35]. African Americans were less likely to know where to donate.

Requirement of different marketing strategies—Marketing strategies to recruit blood donors may differ by race. In a study of blood donors, African Americans versus whites preferred mailed reminders, race-specific marketing, and donor center community involvement[31]. In a study of African American church attendees, participants would be more encouraged to donate by being asked by religious, social, or civic group (79% agreed), being asked by friends or family (77%), hearing/seeing there is a need for blood (72%), being asked by a coworker (67%), calling or emailing (63%), and receiving a letter (58%) [37]. Participants' donation location preference was at work, religious center or blood center.

Less trust in the health care system—The act of donation has been associated with increase in trust and decrease in the perceived risk of donation[38]. Historically, African Americans have had a general mistrust for the medical establishment especially following the report on the Tuskegee syphilis study[39-41]. The concept of trust is a complex construct and involves a number of interactions. The level of trust is related to previous health care experience, perception of the health care provider, interpersonal skills demonstrated by the provider, level of patient satisfaction[42], and quality of the relationship between the provider and patient.[43] In a previous study, African American respondents who had fewer quality interactions with a health care provider and fewer annual care visits had significantly lower trust levels.[43] Thus, trust might be important factor in the racial differences in the willingness to donate blood between African Americans and whites.

Few studies have examined the role of trust of African Americans in blood centers. In a cross-sectional study of 385 respondents by African Americans were less likely to trust hospitals than whites and were more likely to agree with the statement “Hospitals have sometimes done harmful experiments on patients without their knowledge”[40]. In addition, African Americans were more likely to report being afraid of hospitals and believe that white patients received better hospital care than other racial groups. This study demonstrated that those who feared hospitals had a significantly lower likelihood of previous donation history than those who did not[44]. A study of African American church attendees demonstrated respondents who trusted hospitals (77% of participants) versus those who did not (23%) were more likely to have previously donated or willing to donate, received education materials regarding blood donation, less likely to be afraid of hospitals or feel that hospitals have done harmful experiments on patients without their knowledge[45]. In addition, those who trust hospitals were more likely to agree with “donating blood because it is needed” and were less likely to be afraid of needles, of feeling faint, of donating and of catching a disease. Lastly, those who trusted hospitals were more knowledgeable about the blood supply and sickle cell disease.

Interventions used to increase minority blood donation

The majority of African American recruitment programs encourage individuals to donate for children with sickle cell disease. The American Red Cross Southern Region “Partners for Life” program matched sickle cell disease patients with a pool of dedicated donors who could provide antigen-matched units. A retrospective study showed that while the program was successful in reducing the alloimmunization rate to 7%, it was not successful in limiting the exposure of sickle cell patients only to a small, dedicated blood donor pool[46]. Another published recruitment strategy was the mailing of sickle cell educational packets to members of the African American community[8]. Six months after mailing a video packet, there was a 75% increase in the number of African American donors and 64% increase in the number of first-time African American donors compared to the previous six months. This increase was not noted in the areas where the mailing was not performed. However, the subsequent six months showed a return to baseline and therefore this intervention was not sustained. The Sickle Cell Sabbath Program was created to increase awareness about sickle cell disease and to promote blood donation with the African American faith community for children with sickle cell disease and strokes[47]. The program recruited 13 churches and demonstrated an increase in first-time donors in the 34 blood drives over a 4-year period.

CONCLUSION

In the US, minorities donate at substantially lower rates than whites. This results in inability to adequately supply red cell units to minorities with alloantibodies or sickle cell disease patients. The reasons for the lower donation rates are multifactorial, including increased

donor ineligibility, donor deferral and barriers to donation, particularly fear and distrust. Interventions primarily have targeted the need for blood for children with sickle cell disease, which have been of limited success. Interventions needed to increase minority donation include expanding community education regarding the safety and need of blood donation, decreasing disease burden of African Americans resulting in donor ineligibility and improving donor center environment and marketing.

Acknowledgments

The authors have no conflict of interest. The authors acknowledge Adelbert B. James, PhD, George B. Schreiber, PhD, and Derrick G. Demmons, MPH, in their assistance in these studies. These studies were funded by a National Blood Foundation grant and a National Heart, Lung, and Blood Institute, Research Supplement grant to Promote Diversity in Health Related-Research, contract number: N01-HB-47170.

REFERENCES

1. Whitaker, B.; Green, J.; King, M., et al. The 2007 national blood collection and utilization survey report. USDoHaH. AABB. , editor. United States Department of Health and Human Services; Bethesda: 2009.
2. Shaz BH, Zimring JC, Demmons DG, Hillyer CD. Blood donation and blood transfusion: special considerations for African Americans. *Transfus Med Rev.* 2008; 22:202–214. [PubMed: 18572096]
- 3*. Murphy EL, Shaz B, Hillyer CD, et al. Minority and foreign-born representation among US blood donors: demographics and donation frequency for 2006. *Transfusion.* 2009; 49:2221–2228. [PubMed: 19555415] [This paper reports blood donation rates by demographics using data from six donor centers throughout the US]
4. Gillum F, Eder AF, McLaurin-Jones TL. Hispanic ethnicity, race and blood donation in the United States. *Transfus Med.* 2008; 18:366–370. [PubMed: 19140820]
5. Shaz B, James A, Hillyer K, et al. Demographic patterns of blood donors and donations in a large metropolitan area. *JNMA.* 2010 in press.
6. US Census Report 2008.. National Sex, Race, and Hispanic Origin.
- 7**. Klapper E, Zhang Y, Figueroa P, et al. Toward extended phenotype matching: a new operational paradigm for the transfusion service. *Transfusion.* 2010; 50:520–521. [PubMed: 20609198] [This paper looks at the ability to deliver phenotype matched red cell products to various patient groups, highlighting the need for increased minority donations]
8. Price CL, Boyd JH, Watkins AR, et al. Mailing of a sickle cell disease educational packet increases blood donors within an African American community. *Transfusion.* 2006; 46:1388–1393. [PubMed: 16934076]
9. McCarthy M. Number of cancer deaths continues to fall in USA. *Lancet.* 2007; 369:263. [PubMed: 17262912]
10. Moran A, Roux AVD, Jackson SA, et al. Acculturation is associated with hypertension in a multiethnic sample. *Am J Hypertens.* 2007; 20:354–363. [PubMed: 17386340]
11. Rosamond W, Flegal K, Friday G, et al. Heart disease and stroke statistics - 2007 update - A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation.* 2007; 115:E69–E171. [PubMed: 17194875]
12. Brancati FL, Kao WHL, Folsom AR, et al. Incident type 2 diabetes mellitus in African American and white adults - The atherosclerosis risk in communities study. *JAMA.* 2000; 283:2253–2259. [PubMed: 10807384]
13. Powe NR, Madias NE, Harrington JT, Levey AS, Khan S, Kausz A, Jaber BL, Meyer KB. To have and have not: Health and health care disparities in chronic kidney disease. *Kidney Int.* 2003; 64:763–772. [PubMed: 12846781]
14. Durant T, McDavid K, Hu X, et al. Racial/Ethnic disparities in diagnoses of HIV/AIDS - 33 states, 2001-2005. *JAMA.* 2007; 297:1647–1649.
15. Robins EB, Blum S. Hematologic reference values for African American children and adolescents. *Am J Hematol.* 2007; 82:611–614. [PubMed: 17177189]

16. McClung JP, Marchitelli LJ, Friedl KE, Young AJ. Prevalence of iron deficiency and iron deficiency anemia among three populations of female military personnel in the US Army. *J Am Coll Nutr.* 2006; 25:64–69. [PubMed: 16522934]
17. Newman B. Blood donor suitability and allogeneic whole blood donation. *Transfus Med Rev.* 2001; 15:234–244. [PubMed: 11471125]
18. AABB. Standards for blood banks and transfusion services edn 26th. AABB; Bethesda: 2009.
19. Zou S, Eder AF, Musavi F, et al. Implementation of the Uniform Donor History Questionnaire across the American Red Cross Blood Services: increased deferral among repeat presenters but no measurable impact on blood safety. *Transfusion.* 2007; 47:1990–1998. [PubMed: 17958527]
20. Riley W, Schwei M, McCullough J. The United States' potential blood donor pool: estimating the prevalence of donor-exclusion factors on the pool of potential donors. *Transfusion.* 2007; 47:1180–1188. [PubMed: 17581152]
21. James AB, Hillyer CD, Shaz B. Demographic differences in donor eligibility. *Transfusion.* 2010 in press.
22. Custer B, Chinn A, Hirschler NV, et al. The consequences of temporary deferral on future whole blood donation. *Transfusion.* 2007; 47:1514–1523. [PubMed: 17655597]
23. Halperin D, Baetens J, Newman B. The effect of short-term, temporary deferral on future blood donation. *Transfusion.* 1998; 38:181–183. [PubMed: 9531951]
- 24*. Shaz BH, James AB, Hillyer KL, et al. Demographic variations in blood donor deferrals in a major metropolitan area. *Transfusion.* 2010; 50:881–887. [PubMed: 19951315] [This paper details demographic differences in blood donation deferrals]
25. Mast AE, Schlumpf KS, Wright DJ, et al. Demographic correlates of low hemoglobin deferral among prospective whole blood donors. *Transfusion.* 2010 epub Apr 15.
- 26**. Eder A, Goldman M, Rossmann S, et al. Selection criteria to protect the blood donor in North America and Europe: past (dogma), present (evidence), and future (hemovigilance). *Transfus Med Rev.* 2009; 23:205–220. [PubMed: 19539875] [This is a detailed review of donor selection in various countries throughout the world]
27. Brittenham G, Klein H, Kushner J, Ajioka R. Preserving the national blood supply. *Hematology Am Soc Hematol Educ Program.* 2001:422–432. [PubMed: 11722996]
28. Magnussen K, Bork N, Asmussen L. The effect of a standardized protocol for iron supplementation to blood donors low in hemoglobin concentration. *Transfusion.* 2008; 48:749–754. [PubMed: 18194390]
29. Gillespie TW, Hillyer CD. Blood donors and factors impacting the blood donation decision. *Transfus Med Rev.* 2002; 16:115–130. [PubMed: 11941574]
30. Glynn SA, Kleinman SH, Schreiber GB, et al. Motivations to donate blood: demographic comparisons. *Transfusion.* 2002; 42:216–225. [PubMed: 11896338]
31. Shaz BH, Demmons DG, Hillyer KL, et al. Racial differences in motivators and barriers to blood donation among blood donors. *Arch Pathol Lab Med.* 2009; 133:1444–1447. [PubMed: 19722753]
32. Grossman B, Watkins AR, Fleming F, DeBaun MR. Barriers and motivators to blood and cord blood donations in young African-American women. *Am J Hematol.* 2005; 78:198–202. [PubMed: 15726598]
33. Shaz BH, Demmons DG, Crittenden CP, et al. Motivators and barriers to blood donation in African American college students. *Transfus Apher Sci.* 2009; 41:191–197. [PubMed: 19782000]
34. Shaz BH, James AB, Demmons DG, et al. The African American church as a donation site: motivations and barriers. *Transfusion.* 2010; 50:1240–1248. [PubMed: 20088834]
35. James AB, Schreiber GB, Hillyer CD, Shaz B. Differences in blood donation factors in African Americans and whites. *Transfusion.* 2010 in press.
36. Schreiber GB, Schlumpf KS, Glynn SA, et al. Convenience, the bane of our existence, and other barriers to donating. *Transfusion.* 2006; 46:545–553. [PubMed: 16584430]
37. Shaz B, James AB, Demmons DG, et al. African American church attendees knowledge of blood donation, marketing opinions and overall health. *Transfusion.* 2009; 49:64a–65a. [PubMed: 18954398]

38. Andaleeb SS, Basu AK. Explaining blood donation: the trust factor, attitudes, personality and demographics differentiate donors from nondonors. *J Health Care Mark.* 1995; 15:42–48. [PubMed: 10142386]
39. O'Malley AS, Sheppard VB, Schwartz M, Mandelblatt J. The role of trust in use of preventive services among low-income African-American women. *Prev Med.* 2004; 38:777–785. [PubMed: 15193898]
40. Boulware LE, Ratner LE, Cooper LA, et al. Understanding disparities in donor behavior: race and gender differences in willingness to donate blood and cadaveric organs. *Med Care.* 2002; 40:85–95. [PubMed: 11802081]
41. Petersen LA. Racial differences in trust: reaping what we have sown? *Med Care.* 2002; 40:81–84. [PubMed: 11802080]
42. Laveist TA, Nuru-Jeter A. Is doctor-patient race concordance associated with greater satisfaction with care? *J Health Soc Behav.* 2002; 43:296–306. [PubMed: 12467254]
43. Halbert CH, Armstrong K, Gandy OH Jr, Shaker L. Racial differences in trust in health care providers. *Arch Intern Med.* 2006; 166:896–901. [PubMed: 16636216]
44. Boulware LE, Ratner LE, Ness PM, et al. The contribution of sociodemographic, medical, and attitudinal factors to blood donation among the general public. *Transfusion.* 2002; 42:669–678. [PubMed: 12147017]
45. James AB, Demmons DG, Schreiber GB, et al. Contribution of attitudinal factors to blood donation in African American church attendees. *Transfusion.* 2010 in press.
46. Hillyer KL, Hare VW, Josephson CD. Partners for life: the transfusion program for patients with sickle cell disease offered at the American Red Cross Blood Services, Southern Region, Atlanta, Georgia. *Immunohematology.* 2006; 22:108–111. et al. [PubMed: 17105357]
47. Price C, Johnson M, Lindsay T. The Sickle Cell Sabbath: a community program increases first-time blood donors in the African American faith community. *Transfusion.* 2009; 49:519–523. et al. [PubMed: 19040492]

Table 1**Contributors to underrepresentation of African Americans in the blood donor pool**

African Americans versus white individuals have:

lower blood donation rates than whites;

higher deferral rates than whites;

lower donor eligibility than whites;

likely have different motivators to blood donation; and

fear and distrust are major deterrents to blood donation.

Table 2

Estimated donor eligibility by demographics by mathematical modeling

Eligible Donors	Total All ages	Total Ages 18-69	Eligible Ages 18-69	Eligible (%) Ages 18-69	Eligible (%) Total
Total Population	297,136,095	185,073,490	134,955,589	72.92%	45.42%
Race					
African Americans	36,345,537	23,309,307	14,295,598	61.33%	39.33%
Whites	196,894,086	133,440,391	101,054,408	75.73%	51.32%
Hispanics	45,360,900	28,323,791	21,948,106	77.49%	48.39%
Gender					
Males	145,515,898	90,875,799	70,683,197	77.78%	48.57%
Females	151,620,197	94,197,690	67,398,447	71.55%	44.45%
Age					
< 40 year olds	88,749,600	82,997,344	67,974,825	81.90%	76.59%
>= 40 year olds	108,775,290	102,076,145	69,564,893	68.15%	63.95%