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ABC NEWSLETTER

CURRENT EVENTS AND TRENDS IN BLOOD SERVICES

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2015 #28 **July 24, 2015**

INSIDE:

Two More Studies Suggest Older Stored RBCs Not Harmful

Three large randomized clinical trials in premature infants (Age of Red Blood Cells in Premature Infants trial), cardiac surgery patients (Red-Cell Storage Duration Study), and critically ill adults (Age of Blood Evaluation trial) have demonstrated that transfusion of older stored red blood cells (RBCs), compared with fresher RBCs, did not lead to worse outcomes or increased mortality. Two new studies in *Transfusion* extend these findings to women giving birth and in a canine model of hemorrhagic shock without infection.

RBCs undergo biochemical and structural changes as they age toward their outdate, known as the "storage lesion." Observational studies have suggested that transfusion of older RBCs might result in worse clinical outcomes. The three aforementioned major randomized clinical trials strongly suggest this is not clinically important in the populations studied, but their results may not be relevant to all patient groups.

Transfusion in Pregnant Women. Jillian Patterson, of Royal North Shore Hospital, Australia, and colleagues investigated whether older blood is associated with increased mortality and readmission in one under-studied population – women giving birth and undergoing transfusion. Women going into labor in New South Wales, Australia, between July 2006 to December 2010 who received between one and four RBC units during the birth admission were included in their retrospective, observational study.

They analyzed information on the women's demographics, clinical characteristics, transfusions, and outcomes based on data from five routinely collected administrative datasets. Controlling for independent confounding factors by limiting the study population to women receiving one to four RBC units and adjusting for the number of units transfused, the authors used generalized propensity score methods to determine the effect of the age of blood on rates of severe morbidity and readmission.

Among 2,990 women included in the study, there were no differences in the maximum age of blood transfused between women with and without severe morbidity nor in the risk for readmission. "This finding was unchanged when age of blood was considered as less than 14 vs. 14 or more days," wrote the authors. They add that this finding is consistent with those of other studies in other low-risk patient groups.

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OUR SPACE

Abbey Nunes, ABC's Chief Member Experience Officer

Check Out ABC's New Member Site

With the summer months upon us, and what may be considered a slightly slower pace, many of us use these quieter times around the office to catch up on tasks we've been putting off. While it can bring such simple satisfaction to cross items such as "clean out inbox" and "dust keyboard" from your to-do list, it is also the perfect time to take part in professional development. And, what better way to do so than by checking out America's Blood Centers' new Member Site launched just last month?

Not only an exclusive community for ABC members to access association and industry news, resources, and files, the Member Site is also home to the developing ABC Professional Institute, a one-stop-shop for ABC members to find a plethora of educational resources for the adult learner including:

- Face-to-face learning: From business meetings for the C-suite executive to discipline-based workshops, ABC hosts multiple meetings throughout the year, one of which is sure to fit your continuing education needs;
- Online learning: No time or budget to travel? Don't fret – online webinars are hosted each month on a variety of industry and association-related subjects;
- Publications: Stay updated on industry and association news through ABC's flagship publication the *ABC Newsletter*, as well as the quarterly medical resource, *Blood Bulletin*;
- Learning Communities: Share best practices and learn from your blood center colleagues through listservs, forums, and committees.

If you are employed by an ABC member blood center, getting started and gaining access is easy. Simply go to https://members.americasblood.org to set up your free account today. And let's not keep this our little secret – whether you're focused on growing a career in collections, human resources, communications, or anywhere in between, there is something on the Member Site for all blood center professionals. So, be sure to encourage members of your team to create their own user profile as well.

ABC is committed to helping you reach your personal and professional continuing education goals. So whether you need help with a forgotten password or have suggestions on topics for learning resources that would be useful to you and your team, don't hesitate to contact a member of our team. Happy Clicking!

P.S. Stay tuned for details on an informational webinar for new users, as well as site enhancements in the coming months!

Abbey Nunes

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ABC is an association of not-for-profit, independent community blood centers that helps its members provide excellence in transfusion medicine and related health services. ABC provides leadership in donor advocacy, education, national policy, quality, and safety; and in finding efficiencies for the benefit of donors, patients, and healthcare facilities by encouraging collaboration among blood organizations and by acting as a forum for sharing information and best practices.

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Older RBCs in Patient Subgroups (continued from page 1)

The failure to find negative outcomes associated with transfusion of older RBCs may be because pregnant women are generally healthy and the study population did not receive more than four RBC units. This is relevant because some studies have suggested that there may be a dose effect, where a single unit of older blood may not be sufficient to contribute to negative outcomes.

A Canine Model of Hemorrhagic Shock. While studies have investigated the impact of longer storage of RBCs upon clinical outcomes in patients, it is difficult to determine the effects of the oldest stored blood because it goes against standard practice to intentionally "age" blood longer for the purposes of a human trial. The average age of an RBC at transfusion in the US is 17.9 days, although blood can be stored up to 42 days. To address this issue, Steven B. Solomon, PhD, and colleagues of the National Institutes of Health have examined the outcomes of fresher blood vs. blood at the end of its storage period in a canine model.

In a previous study, Solomon and colleagues found that in beagles with *Staphylococcus aureus* pneumonia, transfusion of 42-day-old stored RBCs was associated with more lung injury and higher mortality rates (see *ABC Newsletter*, 3/8/13). These increased risks were associated with effects of the RBC storage lesion characterized by ongoing *in vivo* hemolysis, resulting in high levels of cell-free hemoglobin (CFH) and non-transferrin-bound iron (NTBI). This is consistent with the hypothesis that high levels of CFH increase vasoconstriction by scavenging nitric oxide (NO) at sites of infection, contributing to vascular endothelial injury and worsening the severity of pneumonia, said the authors.

These findings suggest that infection and/or critical illness might represent a "second hit," or a cause of negative outcomes associated with the impact of older blood. The authors report on transfusion in a non-infected canine model of acute hemorrhagic shock and reperfusion injury. Two-year old beagles with hemorrhagic shock were randomized to be transfused either with older (42-day old) or fresher (seven-day old) leukoreduced, stored canine RBCs, transfused 2.5 hours after undergoing controlled hemorrhage.

While older transfused RBCs exhibited the expected *in vivo* abnormalities associated with the storage lesion – increased CFH and NTBI levels – no worsening of clinical endpoints was demonstrated. Transfusion of fresher stored RBCs after hemorrhagic shock was associated with 50 percent mortality, compared to 18 percent mortality in canines transfused with older RBCs. In contrast to the previous infection model, canines receiving fresher stored RBCs had significantly more impairment in lung function and required more vasopressors to maintain blood pressure near normal.

The authors speculate that older blood results in a slower, gradual reperfusion with improved outcomes and "that infection was necessary to produce harmful effects when older blood is transfused. This study confirms that lethal inflammatory reperfusion injury without infection fails to produce similar results," they write.

"Transfusion of older stored RBCs can appear safe in clinical trials of medical and surgical patients, but in selected subgroups of these patients, release of iron and CFH may affect the clinical course and alter the outcome," conclude the authors.

Animal models cannot be generalized to humans, and canine blood storage and preparation practices may differ from those of humans. "The animal data demonstrate the need to address specific, critical recipient

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Older RBCs in Patient Subgroups (continued from page 3)

populations with well-designed trials before taking steps to shorten RBC storage if such inventory practices will compromise the availability of blood," said America's Blood Centers Chief Medical Officer Louis Katz, MD, who was not involved in the study.

Citations: Patterson JA, *et al*. Age of blood and adverse outcomes in a maternity population. Transfusion. 2015 July 15. [Epub ahead of print]

Solomon SB, *et al*. Transfused older stored red blood cells improve the clinical course and outcome in a canine lethal hemorrhage and reperfusion model. Transfusion. 2015 July 15. [Epub ahead of print]

Solomon SB, *et al*. Mortality increases after massive exchange transfusion with older stored blood in canines with experimental pneumonia. Blood. 2013 Feb. 28;121(9):1663-72.

AABB/CAP Work Group Recommend Phasing in RHD Genotyping

A work group convened by AABB and the College of American Pathologists (CAP) on RHD Genotyping has published a joint statement recommending that RHD genotyping be conducted whenever a weak D phenotype is detected by routine Rh blood typing of pregnant women and females of childbearing age. The recommendations respond to a CAP survey that revealed a lack of standard practice in the US for lab testing and interpreting the weak D phenotype of patients, including pregnant women. The work group was convened to develop recommendations to clarify clinical issues and streamline management of these patients.

The goal of RHD typing is to protect people with RHD-negative blood from inadvertent alloimmunization to the D antigen by exposure to RHD-positive red blood cells (RBCs), including RBCs expressing a serologic weak D phenotype. The most important goal is preventing anti-D hemolytic disease of the fetus and newborn.

The work group included scientific consultants from blood centers (including some from America's Blood Centers' member centers), hospitals, the national blood organizations (ABC, AABB, and the American Red Cross), the Armed Services Blood Program, and CAP. The group's report, published in the March 2015 issue of *Transfusion*, outlines relevant data supporting the joint statement, highlighting that "it is time to phase in selective RHD genotyping."

The joint statement emphasizes that current RHD testing practices are successful in preventing RHD hemolytic disease of the fetus/newborn, but at the expense of unnecessary injections of Rh immune globulin (Ig) and transfusion of Rh-negative RBCs (always in short supply) when Rh-positive RBCs can be safely transfused. This is based on extensive research documenting that many RHD phenotypes that are expressed as weak D serologically, do not pose a material risk of alloimmunization to D antibodies, and thus neither require RhIg, nor RHD-negative RBC transfusions. Those phenotypes are most precisely identified with molecular methods (i.e., genotyping).

"If all pregnant women in the US with weak D phenotype were identified and their RHD genotype determined, an estimated 13,360 pregnant women who are currently managed as RH-negative could be managed as Rh-positive, avoiding 24,700 injections of Rh immune globulin annually," according to the statement.

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AABB/CAP RHD Genotyping Statement (continued from page 4)

As such, the group recommends RHD genotyping whenever a weak D phenotype is detected by routine Rh blood typing of pregnant women and other fertile females. This is a strong recommendation, based on high-quality evidence from observational studies. The group adds that efforts to foster the application of genomic medicine to promote more personalized medical care are supported by recent coding and reimbursement changes for RHD genotyping.

"Phasing in RHD genotyping is a feasible and appropriate first step for delivering specific benefits of molecular science to a well-defined and relatively limited number of patients. RHD genotyping will support more precise decision-making in obstetrical practice and transfusion medicine," concludes the statement.

ABC members can access the joint statement here.

Citation: Sandler SG, et al. It's time to phase in RHD genotyping for patients with a serologic weak D phenotype. Transfusion. 2015 March;55(3):680-9.

RESEARCH IN BRIEF

A study in *JAMA Surgery* suggests that a significant number of patients undergoing abdominal surgery are transfused using a liberal hemoglobin trigger and that reducing unnecessary transfusion will reduce treatment costs. Numerous standard-setting and accreditation organizations have recommended a restrictive RBC transfusion strategy, with a lower hemoglobin transfusion trigger, over a liberal strategy, with a higher hemoglobin trigger – for appropriate patient groups. Timothy M. Pawlik, MD, MPH, PhD, of Johns Hopkins Hospital in Baltimore, Md., and colleagues have shown in previous studies that transfusion practices vary greatly among surgeons, surgical disciplines, and the type of surgery. In the current study, Dr. Pawlik and colleagues investigated the economic impact of liberal transfusion at Johns Hopkins Hospital. Using the hospital's prospective surgical database, they analyzed hemoglobin transfusion triggers and blood product use for patients undergoing pancreas, liver, or colorectal surgery between Jan. 1, 2010 and Aug. 31, 2013, and performed an economic analysis using the RBC institutional acquisition cost ($220 per unit) and an estimated activity-based cost ($760 per unit). The liberal hemoglobin trigger was defined as ≤10 g/dL and a restrictive trigger was ≤8 g/dL. They analyzed the numbers of surgical patients who received RBC transfusions, estimated cost per transfusion, and estimated cost of excessive blood transfusions. Of 3,027 patients, 942 received at least one unit of RBCs, for an overall transfusion rate of 31 percent. The authors found that more than 1 in 10 units of RBCs and 6.3 percent of patients received at least one unit of RBCs using a liberal hemoglobin trigger. They found significant variation in transfusion practices and costs at both the patient and clinician levels. The liberal use of blood products led to excess transfusion costs of $100,320 to $246,560 total during the 44-month study period. They add that the total cost of the transfusion of one unit of RBCs far exceeds acquisition costs once technical, administrative, and clinical processing associated with transfusion is considered. Further, surgeons deemed to be in the lowest 10th percentile in terms of compliance with institutional transfusion guidelines (a hemoglobin trigger of 8 g/dL) accounted for nearly 80 percent of identified excess transfusion costs. "Our data support the use of patient blood management systems to identify and reduce the liberal use of RBC transfusions in the surgical patient. Danny Chu, MD, of the University of Pittsburgh School of Medicine, notes in an accompanying editorial that it is important to remember that "surgeons should carefully weigh all the risks and benefits of blood transfusion guided by evidence and use their best clinical judgment," as no trial can capture all possible patient scenarios.

Citations: Ejaz A, *et al*. Potential economic impact of using a restrictive transfusion trigger among patients undergoing major abdominal surgery. JAMA Surg. 2015 July 1;150(7):625-30.

Chu D. Use of a restrictive transfusion in abdominal surgery: should evidence-based medicine replace art of medicine? JAMA Surg. 2015 July1;150(7):631.

This month, *Transfusion* published a special issue of the journal on "Strategies to Address Hemolytic Complications of Immune Globulin Infusions." Immune Globulin Intravenous (human) (IVIG) is used to treat primary immune deficiency syndromes and as an immunomodulatory therapy in a variety of (primarily) autoimmune syndromes. While reports of hemolysis (the destruction of red blood cells) after IVIG treatment have been received since its licensure, increased numbers of spontaneous reports were received by the Food and Drug Administration from healthcare providers in 2011, explained Dorothy E. Scott, MD, and Jay S. Epstein, MD, of FDA, in an introduction to the supplement. In January 2014, a diverse group of stakeholders including experts in hematology, epidemiology, manufacturing, and product testing, as well as regulatory officials, met at a workshop to discuss epidemiology, patient risk factors, product risk factors, and possible solutions to lower hemolytic risk of IVIG infusions. They sought to identify short- and long-term strategies to lower the incidence of clinically important hemolysis. The

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RESEARCH IN BRIEF (continued from page 6)

outcomes and evidence presented at that workshop are reported in the *Transfusion* supplement. One study in the supplement, conducted by George B. Schreiber, ScD, of the Plasma Protein Therapeutics Association (PPTA) and colleagues, provides insight into hemolytic events associated with IVIG, reporting the results of a qualitative analysis of 263 cases reported to four IVIG manufacturers between 2003 and 2012. The analysis represents the largest number of IVIG-associated hemolysis cases to date. IVIG-associated hemolysis occurs predominantly at higher dosing levels, with the majority (60 percent) of cases receiving doses of 2 g/kg body weight or greater. While the vast majority of cases occurred in patients with blood group A, patients with blood groups AB and B also appeared to be at risk. Since lower pretreatment hemoglobin levels were correlated with higher needs for transfusion, the authors recommend that healthcare providers closely monitor patients with lower starting hemoglobin ($\leq$11 g/dL). The data supported the hypothesis that hemagglutinins (anti-A, anti-B and anti-A,B) play a major role in the pathogenesis of the hemolysis; their titers in IVIG correlate poorly with outcome, wrote the authors. Drs. Scott and Epstein write in a concluding summary that they hope the "supplement improves awareness among clinicians about the risk of hemolysis associated with administration of IVIG products, risk factors in patients, the need for clinical monitoring, potential mitigation strategies, and the need for participation in detailed reporting of hemolytic events after IVIG treatment."

Citations: Scott DE, Epstein JS. Hemolytic adverse events with immune globulin products: product factors and patient risks. Transfusion. 2015 July;55 Suppl 2:S2-5.

Berg R, *et al*. Hemolytic events associated with intravenous immune globulin therapy: a qualitative analysis of 263 cases reported to four manufacturers between 2003 and 2012. Transfusion. 2015 July;55 Supplement 2:S36-46.

Scott DE, Epstein JS. Safeguarding immune globulin recipients against hemolysis: what do we know and where do we go? Transfusion. 2015 July; 55 Suppl 2:S122-6.

RECENT REVIEWS

A systematic review published July 16 in *Blood* shows that half of transfusion-associated graft-versus-host disease (TA-GVHD) occurs in patients not considered to be at risk for TA-GVHD under current guidelines for blood irradiation. TA-GVHD is a rare, usually fatal, complication of blood transfusion wherein donor lymphocytes in the transfused blood component cause the patient's immune system to attack the recipient's tissues. The diagnosis of TA-GVHD is based on a combination of characteristics and clinical findings and a tissue biopsy consistent with GVHD, with imputability established by demonstration of leukocyte chimerism, specifically donor lymphocytes in recipient tissue. Blood irradiation, the best established intervention to prevent TA-GVHD, creates operational costs and time delays, which makes the development of clinical guidelines to guide irradiation important. Jeannie Callum, MD, Sunnybrook Health Sciences Center, Ontario, Canada, and colleagues conducted a systematic review of all reported cases of TA-GVHD in the medical literature to better understand the relative importance of patient or component factors for preventing TA-GVHD and to evaluate the National Health and Safety Network criteria. Most patients with TA-GVHD did not have an underlying diagnosis suggesting immune compromise, and about half did not qualify for irradiated blood components according to extant guidelines, based predominantly on patient diagnosis. The majority of cases were attributed to cellular, non-leukoreduced, non-irradiated components that were stored for less than 10 days. "Our findings support

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RECENT REVIEWS (continued from page 7)

the notion that TA-GVHD is principally attributable to viable donor lymphocytes present in the transfused component," concluded the authors. They suggest that any patient with features suggestive of TA-GVHD undergo a thorough evaluation to confirm the authors' findings and grant greater insight into the responsible mechanisms of TA-GVHD to inform scientifically sound blood irradiation policies.

Citation: Kopolovic I, *et al*. A systematic review of transfusion-associated graft-versus-host disease. Blood 2015 July 16;126(3):406-14. ♦

REGULATORY NEWS

America's Blood Centers recently submitted comments on behalf of its member blood centers to the Food and Drug Administration regarding a draft guidance and a draft rule. ABC, AABB, and the American Red Cross submitted joint comments on July 14 to FDA on the draft guidance titled "Revised Recommendations for Reducing the Risk of HIV Transmission by Blood and Blood Products," which was published in May (see *ABC Newsletter*, 5/15/15). The national blood organizations agree with the proposed change of the current lifetime blood donor deferral for men who have had sex with other men (MSM) to a deferral of one year since the last exposure. The organizations support several other recommendations and ask FDA to clarify some of the assessment language. The focus of the comments is to register a long-standing objection to FDA's continued inclusion of a list of "signs and symptoms associated with HIV infection …" in the donor education materials and to strongly recommend that this list be removed from the final guidance. The objections are based on the nonspecificity of the required information, a lack of data supporting their efficacy and the volume of more important information we are trying to provide donors. The comments note that the Final Rule recently released by FDA regarding "Requirements for Blood and Blood Components Intended for Transfusion or for Further Manufacturing Use" requires that HIV risk factors – not signs and symptoms – be included in donor education materials. On May 18, ABC submitted comments to FDA regarding the proposed rule titled, "Electronic Distribution of Prescribing Information of Human Prescription Drugs, Including Biologic Products." FDA proposes to require that all prescribing information for prescription drugs and biologic products, including blood and blood components, be distributed electronically to ensure that physicians have the most updated information regarding the products. ABC endorses the concept of making blood and blood component prescribing information available electronically, but cautions the agency to allow adequate time for resolution of certain issues that may arise prior to implementing this rule to ensure no disruption to information to physicians as well as to prevent unnecessary work for both blood organizations and FDA. ABC members can access the comments here. (Sources: ABC, AABB, ARC joint comments, 7/14/15; ABC comments, 5/18/15)

The Food and Drug Administration's final rule, published July 8, regarding the permanent discontinuance or interruption of manufacturing of drug and biological products includes blood and cellular gene therapy products. The rule requires written notification to FDA of permanent discontinuance or interruption in biological products manufacturing that is likely to lead to supply disruptions in the US. The rule outlines the reporting requirements and criteria for blood centers that must report such disruptions to the manufacturing of blood products. FDA also includes in the rule requirements for minimum information that must be included in the notification, timeliness of notification, and notice of affected applicants that FDA will issue non-compliance letters. (Source: FDA proposed rule, 7/8/14; AABB Weekly Report, 7/17/15)

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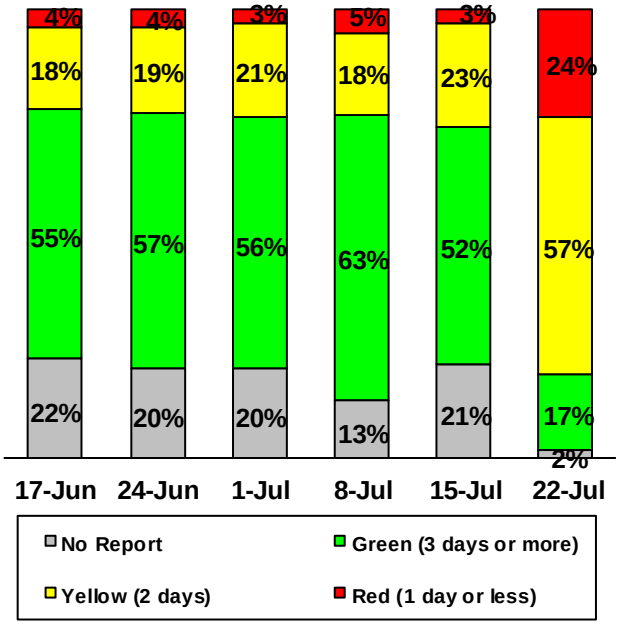
REGULATORY NEWS (continued from page 8)

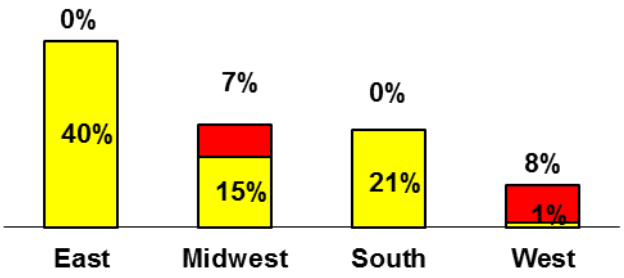
The Food and Drug Administration has granted 510(k) clearance to Remedium Technologies for its Hemogrip patch for the treatment of uncontrolled hemorrhage. The patch controls bleeding occurring from the access of veins or arteries during medical treatment, explained the company in a July 15 press release. The product relies on chitosan, a natural polymer found in the exoskeleton of crustaceans, to generate a mesh capable of coagulating blood. The developers say that Hemogrip offers a cost-effective tool to quickly halt hemorrhaging. (Source: Remedium Technologies press release, 7/15/15)

STOPLIGHT®: Status of America's Blood Centers' Blood Supply

Total ABC Red Cell Inventory



Percent of Regional Inventory at 2 Days Supply or Less, July 22 2015



Percent of Total ABC Blood Supply Contributed by Each Region
East: 20%; Midwest: 25%; South: 24%; West: 31%

Daily updates are available at:
www.AmericasBlood.org

We Welcome Your Letters

The *ABC Newsletter* welcomes letters from its readers on any blood-related topic that might be of interest to ABC members. Letters should be kept relatively short and to the point, preferably about a topic that has recently been covered in the *ABC Newsletter*. Letters are subject to editing for brevity and good taste. Please send letters to ABC Publications Editor Betty Klinck at newsletter@americasblood.org or fax them to (202) 393-1282. Please include your correct title and organization as well as your phone number. The deadline for letters is Wednesday to make it into the next newsletter.

MEMBER NEWS

More than 1,800 donors turned out to help save lives by giving blood to San Diego Blood Bank at the 39th annual Comic Con Blood Drive held in San Diego July 9 to 12. "The loyalty and dedication of Comic Con attendees to blood donation is as impressive as the event itself," said the blood center in a press release. The first Robert A. Heinlein Blood Drive was held with San Diego Blood Bank 39 years ago, making it the longest-running drive in the blood bank history. "It's a community service that this group of people embrace as their way to give back to the community," stated David Wellis, CEO of San Diego Blood Bank. Not only does the blood bank look forward to working in costume and collecting from super characters, but the event is critical to summer blood collections when donations are typically down. Thirty-nine years ago, 148 units of blood were collected at this event, compared to 1,403 units that were collected last year over the four day convention. Dedicated Comic Con blood donors can be proud of the 15,387 units donated over the past 38 years but continued growth is important. Donors received an exclusive 2015 T-shirt, and a chapter sampler of Red Queen from HarperCollins Publishers. (Source: San Diego Blood Bank, 7/23/15)

Two young blood recipients with beta thalassemia major, 1-year-old Kamila Saradpon, held by her mother Maria Saradpon, and 7-year-old Ella Martinez, with her mother Maria Martinez (far left), stand by a donor at the San Diego Blood Bank's Comic Con Blood Drive.

PEOPLE

Kristine (Kris) Belanger joined the Community Blood Center (CBC), Appleton, Wis., on July 17 as vice president of Donor Services. Ms. Belanger will provide leadership and direction to the areas of recruitment, collections, collection operations and planning, and marketing and communications. John Hagins, president and CEO of Community Blood Center expressed, "that he is pleased to add someone with Kris's experience and leadership to our Community Blood Center team. She will be a tremendous asset both to CBC and the communities we serve." In her most recent work experience, Ms. Belanger was the vice president of (Operations) Donor Services and part of the leadership team at Innovative Blood Resources (IBR) in St. Paul, Minn. With IBR since 2005, Ms. Belanger had leader responsibility for sales, operations, and compliance for a blood center operating across three states. Prior to joining IBR, Ms. Belanger worked for 14 years at the American Red Cross, Biomedical Services in both Madison, Wis. and Detroit, Mich. Ms. Belanger has a BS in medical technology from the University of Wisconsin, Madison and is currently working toward an MBA from Benedictine University. With more than 25 years in blood banking, Ms. Belanger is proud of creating a donor experience that is fun and rewarding and values the gift of life each donor provides. Ms. Belanger grew up in Northeastern Wisconsin and is excited to be returning home. She said "donating blood truly makes a difference in the lives of patients in our community." (Source: Community Blood Center press release, 7/17/15)

MEETINGS

Sept. 9 **34th Annual Symposium on Immunohematology & Blood Transfusion, Bethesda, Md.**

The National Institutes of Health and the American Red Cross are co-hosting the 34th Annual Symposium on Immunohematology & Blood Transfusion at the NIH's Masur Auditorium in Bethesda, Md. from 8:25 a.m. to 2:30 p.m. This program is designed to provide attendees with practical information about recent developments, current practices, controversies, and laboratory management issues relative to transfusion medicine. More information and registration details can be found here. ♦

CLASSIFIED ADVERTISING

Classified advertisements, including notices of positions available and wanted, are published free of charge for a maximum of three weeks per position per calendar year for ABC institutional members. There are charges for non-members: $139 per placement for *ABC Newsletter* subscribers and $279 for non-subscribers. A six (6) percent processing fee will be applied to all credit card payments. Notices ordinarily are limited to 150 words. To place an ad, contact Leslie Norwood at the ABC office. Phone: (202) 654-2917; fax: (202) 393-5527; e-mail: mnorwood@americasblood.org.

POSITIONS AVAILABLE

Vice President, Marketing (San Diego, CA). The San Diego Blood Bank (SDBB) is in a unique position to lead the blood industry into the future, by leveraging and extending its competencies. SDBB 2.0 will continue our mission of providing high quality and blood and biological products on a local and national scale while simultaneously delivering healthcare and wellness services. SDBB 2.0 will integrate into local and national scientific and clinical communities to actively drive the future of healthcare through research. SDBB is now searching for a vice president, Marketing to lead a formalized approach to achieving opportunities in blood banking and in the life sciences. Responsible for providing executive leadership and management of SDBB's marketing function including: corporate marketing, partner/channel marketing, product marketing, community relations, public relations and donor recruitment and retention. The VP, Marketing will drive SDBB's efforts to position itself as a visionary leader in both its traditional blood banking market and in emerging life science markets, to achieve its overall blood collection and revenue goals. Requirements: 10 years marketing experience in comparable industries with four years senior management. Bachelor's degree required. MBA preferred. To Apply: http://sandiegobloodbank.applicantpro.com/jobs/. The San Diego Blood Bank is an Equal Opportunity Employer. EOE/Minority/Female/Disability/Vets

Director – Business Development. The National Blood Collaborative, LLC (NBC) is seeking one experienced sales and marketing professional to manage the daily operations of the organization. NBC is an entity created by seven outstanding blood centers that focuses on emerging blood and cellular industry opportunities. Primary responsibilities consist of obtaining new business for NBC in both the blood and cellular marketplace. The ideal candidate possesses strong communication skills and industry related experience, including product development responsibilities. Relocation is not required. However, overnight travel (25 percent) is required. Salary and bonus opportunity commensurate with experience. Interested candidates should forward their resume and cover letter to NBC@kybloodcenter.org. For more information, go to www.nationalbloodcollaborative.org. NBC is an equal opportunity employer.

Director Mobile Operations. The director provides guidance and oversight of Innovative Blood Resources (IBR) mobile operations and programs within the Metro and Northland divisions. This position reports to the chief operational officer/chief financial officer. Directs, strengthens and grows mobile operations to meet the needs of IBR's strategic plan and ensure consistent and compliant blood collection operations that exceed customer expectations. Responsible for overall management and control of mobile transportation including staff, budgets and work processes. Directs the activities and provides guidance, support and tools to staff to ensure safe, timely and economical services. For a detailed job description and to apply: https://home2.eease.adp.com/recruit/?id=18173212.

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POSITIONS (continued from page 12)

Assistant, Associate, or Full Professor Transfusion/Cell Therapy/Hematopathology (10-888) UCSD. The Department of Pathology (http://pathology.ucsd.edu) is committed to academic excellence and diversity within the faculty, staff, and student body and seeks a tenure-track (ladder rank) faculty in Transfusion Medicine/Cellular Therapy and Clinical Hematology/Hematopathology to join the Division of Laboratory and Genomic Medicine. Candidates must have an established record of scholarly productivity in one or more of the following areas: transfusion medicine; molecular immunohematology; cellular therapy, immunotherapy, or immunomodulation; the molecular, genomic and epigenomic basis of hematolymphoid diseases; hematopoietic stem cell biology and development; and biomarker discovery and characterization of hematologic progenitor cells in benign and neoplastic disorders. Start-up resources are available to support investigators who seek to establish a research program with extramural funding. Qualified individuals will also share clinical responsibilities as associate directors of the respective diagnostic and therapeutic laboratory services at the UC San Diego Medical Centers in La Jolla and Hillcrest and the state-of-the-art Center for Advanced Laboratory Medicine, as well as participate in the teaching of medical students, residents, and fellows. For full description and to apply, visit: http://apptrkr.com/629842. AA-EOE

Technical Services Director Quality/Projects. Kentucky Blood Center, located in Lexington, Kentucky is seeking a detail-oriented professional to oversee quality initiatives for Technical Services and facilitate management/implementation of special projects. Responsibilities will include develop, review, and implementation of Process Change Control Plans; assist with standard operating procedure revisions; oversee blood components quality control and Technical Services regulated equipment management (QC, maintenance, and validation); and oversee/manage Quality Assurance/Quality Control Coordinators. Will coordinate quality improvement investigations, root cause analysis, and maintain direct communication with the Quality Assurance department while developing and implementing corrective action plans. Qualified applicants must have a four-year degree, MT (ASCP) or experience deemed equivalent. Three years' experience working in an organization regulated by good manufacturing practice with FDA, AABB, CLIA and EU regulated experience preferred. Experience with data analysis and equipment/process validation preferred. Must be proficient with MS Office products. Competitive salary, comprehensive benefits including health/dental, life, short/long term disability, paid sick/vacations/holidays, EAP, 403(b) retirement savings plan, and pension plan. For more information or to apply online, please visit www.kybloodcenter.org. Drug-free and EOE/AAP.

Director of Donor Services. The Blood & Tissue Center of Central Texas, located in Austin, is hiring an effective leader of Donor Services to oversee the management of fixed site and mobile operations which includes but is not limited to medical history, donor eligibility, automated platelet and red cell collection processes and whole blood collection. This position will serve as the subject matter expert for the Donor Services team and will be responsible for managing and developing staff, planning and executing strategy, and achieving business goals. Qualified candidates must have at least five to seven years management experience which includes performance evaluations, staff development and strategic planning or a minimum of seven years management experience in a blood center. Prefer a BSN or ADN in Nursing with a valid license in the state of Texas as a Registered Nurse or a four-year degree in a related discipline. Possess excellent leadership, critical thinking, and communications skills (written and verbal). Exhibit professional conduct and demeanor at all times. Have the ability to work flexible hours and participate in the on-call rotation. Must be at least 21 years of age, have a valid driver's license, proof of insurance and an acceptable driving record. Please visit www.inyourhands.org to apply.

Call Center Director. This position will direct Oklahoma Blood Institute's (OBI) database-driven, systematic recruitment efforts to procure the right number and variety of blood donations in order to meet OBI's blood supply needs and organizational objectives. Design, implement, and coordinate the use of all direct donor marketing tools and technologies including phone calls, broadcast voice messages, blast emails, text messages, direct mail and other modalities to provide an effective, efficient and comprehensive donor recruitment effort. Manage directly and indirectly OBI's Contact Center staff. Deliver cross-departmental projects engineered to solicit targeted donor subgroups. Successful candidates should have a post-secondary education with two years' management experience, preferably in an outbound call center and/or blood center setting. OBI offers an excellent compensation package which includes Health, Dental, Vision, Life, LTD, Flex, 401(k), Negotiable Relocation Package, and generous Paid Time Off Leave. Qualified candidates should submit their resume to our website careers page at http://obi.org/careers/.

Chief Executive Officer (Indiana Blood Center, a part of Versiti). B. E. Smith is partnering with Indiana Blood Center, in Indianapolis, Indiana, in the recruitment of their next CEO. The CEO will oversee the clinical services for the blood center, including an HLA/DNA transplant laboratory and will be responsible for the operations of all seven Indiana Blood Center

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(IBC) donor centers. Utilizing strong interpersonal skills, the CEO will build long-lasting relationships with partnering hospitals, along with the IBC staff. The ideal candidate will have existing leadership experience within a competitive market, have healthcare expertise and must possess a master's degree. Regarded as a vital link in Indiana's healthcare infrastructure, Indiana Blood Center is the state's largest blood center. Indiana Blood Center hosts local, national and international experts in a variety of fields such as laboratory management, transfusion medicine, immunohematology, hemostasis and blood banking and offers its services to over 60 hospitals throughout the state. To apply, please send your resume to Tracie Anderson at talent@besmith.com.

Executive Director, Blood Operations AD001 (San Antonio, TX). Work directly with the chief operating officer to execute the mission of South Texas Blood & Tissue Center (STBTC). This executive leadership position is accountable for operational objectives and will ensure strategic plan is met. In addition to oversight of daily operational functions, this position tracks and trends key performance indicators, quality metrics and financials and takes appropriate action to ensure business viability. Bachelor's degree in Applied Science or Business required, MBA preferred. Successful execution of strategic objectives. Demonstrable success building teams to drive operational success in challenging and highly regulated environments required. Demonstrable success with implementing and sustaining process improvement. Ten years progressive managerial experience required. Experience managing donor recruitment, donor services, component manufacturing, and product management preferred. Texas Operators Driver's License. Three years driving experience with good driving record required. Visit our website at www.biobridgeglobal.org. E-mail résumé to hr_dept2@biobridgeglobal.org. Call Human Resources (210) 757-9557. BioBridge Global and its subsidiaries are proud to be an EEO/AA-M/F/D/V/Genetic Data employer that maintains a Tobacco & Drug-Free Workplace. All qualified applicants will receive consideration for employment without regard to race, color, ethnicity, religion, sex, national origin, disability, veteran status, genetic data or other legally protected status.