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ABC NEWSLETTER

CURRENT EVENTS AND TRENDS IN BLOOD SERVICES

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2015 #16 **May 1, 2015**

INSIDE:

Stakeholders Explore Challenges, Opportunities in Pathogen Reduction

Pathogen reduction technologies, which inactivate a host of bacteria and viruses in blood products, have the potential to improve blood safety but the road to implementing these costly systems remains unclear, according to blood community stakeholders at a symposium this week. Despite barriers to providing pathogen reduced (PR) blood products, the interest in these technologies was apparent at the AABB Symposium on Implementation of Pathogen-Reduced Blood Components in Bethesda, Md. on April 27 to 28.

Background and Key Challenges. The symposium was convened by an AABB committee established to address the growing interest in implementing PRT on the heels of FDA approval of two such technologies and ongoing consideration of a third. Attendees agreed that pathogen reduction technology (PRT) would offer a proactive approach to blood safety and will largely eliminate the risk of transfusion reactions caused by bacterially infected platelets, but the cost of PRTs remains a major barrier. In addition, numerous speakers highlighted the importance of robust hemovigilance systems to track the efficacy and long-term effects of PR blood products.

The Health and Human Services Advisory Committee on Blood and Tissue Safety and Availability (ACBTSA) recommended in 2008 implementing PRT when it becomes available, as developing new screening tests to protect against emerging pathogens is often time consuming, cumbersome, and costly, said Harvey Klein, MD, of the National Institutes of Health. Further, PR offers the advantage of inactivating a wide array of viruses and bacteria, rather than waiting until a significant infectious threat is identified and tests are developed.

In 2013, FDA approved Octapharma's Octaplas, solvent-detergent treated plasma, and in December 2014, it approved Cerus' Intercept Blood System, the first pathogen inactivation (PI) system approved in the US for plasma and platelets. Terumo BCT is continuing to develop the Mirasol PRT System. However, there are many barriers to adopting of PRT, including:

- The perception that the blood supply is already "safe enough;"
- No single PRT method can treat all blood components;
- The inability of current PRTs to inactivate all infectious agents;
- Concern over potential risks to transfusion recipients from residual chemical agents used to inactivate pathogens; and

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OUR SPACE

ABC CEO Christine S. Zambricki, DNAP, CRNA, FAAN

Price vs. Advice

Research suggests that the blood center-hospital connection will strengthen when it changes from a relationship based on price to one based on advice. High quality counsel from a blood center creates a partnership that is fundamentally different from the commodity bidding war. With the multitude of regulatory issues swirling about (think babesiosis or pathogen reduction technology), blood centers that build meaningful relationships with hospitals as a source of expert information will be best positioned for the future, when competing solely based on price will no longer be a viable strategy.

Is there a need for ABC members to "up their game" in advising hospitals? Preliminary data from an ABC survey conducted in April under the direction of Chief Medical Officer Louis Katz, MD, indicates that they do. If perception is everything, then there is immense opportunity to sync the perceptions of ABC members and hospitals through communication, education, and thoughtful dialogue.

This member blood center and hospital survey sought to identify gaps between blood centers' opinions about their hospitals and the hospitals' positions on the adoption of pathogen reduction (PR) for platelets. So far we have 52 center and 278 hospital responses.

The survey suggests perceptions at blood centers and hospitals are statistically different across multiple domains. Blood centers said that no hospitals were very aware or extremely aware of PR. However, 21 percent of hospital respondents declared themselves very aware or extremely aware. Similarly, 74 percent of blood centers said additional costs for the product was very likely to keep hospitals from using PR, while only 22 percent of hospital respondents agreed. Who will pay any additional costs remains to be seen; 68 percent of hospital respondents indicate a willingness to pay a $\geq$10 percent premium for PR platelets, compared with blood center estimates of 43 percent.

One area of agreement was that blood centers and hospitals both recognize that the likelihood of hospital implementation of PR in the absence of requirements from the Food and Drug Administration, AABB, and/or the College of American Pathologists (CAP) was very low (4 and 5 percent, respectively).

Open dialogue between the hospitals and the blood centers must start now to ensure that patients are provided with appropriate quality of care and value. Broad stakeholder engagement of hospitals and blood centers appears urgent. Though price will always be a major consideration, an effective and successful partnership requires more than that. To support ABC members in this initiative, ABC will offer a webinar on the issues around implementation of PR components. Keep an eye out for webinar details to come, and invite your hospital partners to attend and participate in robust dialogue. This could be a first step in shifting from price to advice as a foundation to your relationship with hospitals.

Christine S. Zambricki

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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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Pathogen Reduction Symposium (continued from page 1)

- The high cost of PRT in the absence of favorable health economic analyses or an adequate reimbursement schema.

PRT offers an attractive option for preventing bacterial contamination of platelets, which remains the most important infectious risk in transfusion medicine with a residual risk of about 1 in 2,000 platelet units transfused, said Jim AuBuchon, MD, president and CEO of Bloodworks Northwest. Studies in the US and abroad show that existing PRTs effectively inactivate the relevant bacteria and that PR platelet products appear effective in controlling bleeding during chemotherapy-induced thrombocytopenia, despite decreased platelet count and corrected count increment (CCI) of transfused PR platelets.

Updates from PRT Manufacturers. Representatives from three companies that produce PRT updated the audience on continuing efforts to demonstrate the efficacy of PR products and secure regulatory approval for a wider array of PR blood products. Cerus intends to make its Intercept Blood System available across all blood components. The company is working toward FDA approval of seven-day storage for Intercept-treated platelets in 100 percent plasma and platelets stored in platelet additive solution with the goal of filing for approval by the end of this year. Cerus is also investigating PR cryoprecipitate and has ongoing US and European studies on PR red blood cell (RBC) products, with the goal of filing for a CE Mark for Intercept to treat RBCs in Europe by 2016.

Terumo BCT's Mirasol System holds a CE Mark for the treatment of platelets and fresh frozen plasma, and continues to be used for whole blood treatment in US Military trials. The company is set to begin a trial later this year investigating the efficacy of Mirasol-treated plasma-stored apheresis platelets in US patients with thrombocytopenia (the MiPLATE trial), to support FDA approval. A Macopharma representative discussed ongoing studies of its Theraflex MB-Plasma and Theraflex UV-Platelets platforms (see page 7).

Other Considerations. Brian Custer, PhD, of Blood Systems, highlighted important health economics considerations related to PRT. PR is quite expensive compared with other blood safety interventions, but PR may allow for the discontinuation of other blood safety measures, such as bacterial culture, irradiation, and maintenance of cytomegalovirus (CMV)-seronegative inventories. This may offset part of the cost. For example, PR of platelets is estimated to cost $750,000 to $1 million per quality adjusted life year (QALY) without the removal of bacterial culture, but may approach $200,000 per QALY or less if it is discontinued. Extended storage to seven days for PR platelets would reduce the cost of outdates and further mitigate the cost of PR.

James Barbeau, MD, JD, of Alpert Medical School of Brown University, reviewed legal considerations, suggesting that the addition of chemicals used in the PR process may alter blood products in such a way as to open the blood supply chain to liability risks should these products have a negative impact on the patient.

International Experience. PR has been used routinely in parts of the EU for several years and symposium attendees heard some mixed messages – PR is effective where implemented but cost remains a concern and barrier for some. The national blood provider in Switzerland began providing 100 percent PR platelets using the Intercept Blood System in 2011 and has since seen no transfusion reactions caused by bacterially contaminated platelets, fewer overall and life-threatening transfusion reactions with platelets, and no reports of increased bleeding or clinician inefficiency of PR platelets, said Markus Jutzi, MD, of Swissmedic. The Swiss blood provider has moved to seven-day storage for platelets.

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Pathogen Reduction Symposium (continued from page 3)

The French national blood supplier provides Intercept-treated platelets only regionally, particularly its Alsace region and areas affected by Chikungunya virus like Réunion Island, said Pierre Tiberghien, MD, PhD, of the Establissement Français du Sang. Intercept-treated platelets effectively prevent bacterial contamination of platelets, and no cases of transfusion-transmitted chikungunya virus were observed on Réunion despite extraordinarily high rates in the population. Intercept does not, however, effectively inactivate hepatitis E virus (HEV), an important concern in France where there appears to be a high HEV incidence, attributed to dietary customs. French hemovigilance data suggests no decrease in potency of Intercept-treated platelets, limited (if any) increase in platelet transfusions associated with the use of PR platelets, and no increase in concurrent RBC use.

Willy Murphy, MD, discussed the factors that led the Irish Blood Transfusion Services to decide against the use of PR platelets. While PR appears to effectively prevent bacterial contamination of platelets, cost posed an unacceptable barrier to approval for implementation. Two Canadian blood suppliers also presented considerations regarding PRT, but Canadian regulators have yet to approve any PRT for cellular components.

Michael Murphy, MD, of the University of Oxford, discussed an April 2014 report by a working group convened by a blood safety advisory committee of UK ministers and health departments (SaBTO), which recommended against implementing PR for platelets. The committee resolved that existing methods to control platelet-associated sepsis – diverting the first aliquot of platelet donations, improved donor arm cleansing, and a sensitive approach to bacterial screening – are sufficient to prevent bacterial contamination of platelets; no cases were detected between 2009 to 2013. Accordingly, the cost-effectiveness of PI remains low, especially because other blood screening interventions cannot be removed with the implementation of PR unless PRT becomes available for RBCs or whole blood, according to SaBTO.

Perspectives on US PRT Implementation. US regulators recognize the potential value of PRT, but the sustainability of the current US blood system and the disconnect between safety initiatives and payors presents barriers to funding and implementing new blood safety interventions, like PRT, said Jay Menitove, MD. A newly formed ACBTSA sub-committee on the sustainability of the US blood supply could help move this issue along, as it aims to investigate the development of and current cost structure for blood capacity of the US blood system. He highlighted a Risk-Based Decision-Making Framework, developed by the Alliance of Blood Operators, which provides a framework for balancing the risks, benefits, and cost-effectiveness of blood safety interventions.

Richard Kaufman, MD, of Brigham and Women's Hospital in Boston, presented key considerations from a hospital perspective on implementing PRT, emphasizing that hospital blood banks are cost centers and that administrators primarily want to know the return on investment and how PRT compares to other interventions. Similarly to previous speakers, he highlighted the potential to offset PRT costs by eliminating other interventions and minimizing platelet outdating via increased dating.

Ed Snyder, MD, discussed Yale-New Haven Hospital's approach to implementing PR. He suggested that widespread adoption of PR may require an FDA mandate and accrediting organizations, like AABB and the College of American Pathologists (CAP), requiring PR in their standards. Dr. Snyder added that the Centers for Medicare & Medicaid (CMS) must reimburse hospitals for the additional cost of PR. Maintaining a dual inventory of PR platelets and standard issue platelets would present logistical difficulties, suggesting that moving to a 100 percent PR-platelet inventory is preferable, according to Dr. Snyder.

(continued on page 5)

Pathogen Reduction Symposium (continued from page 4)

Christopher Nare, MT(AMT), MS, of Blood Bank of Delmarva (BBD), discussed his blood center's ongoing six-month project to implement the Intercept Blood System. In the interest of patient safety, the blood center signed a contract with Cerus in January 2015 to implement Intercept and is dedicating significant staff and financial resources to get the ball rolling. Notably, BBD spent more than $200,000 on equipment, and redesigned a platelet and plasma processing area with the capability to eventually achieve 100 percent PR-platelets and plasma. BBD is collaborating with Cerus and working to identify in-state hospitals interested in Intercept products, educate clinicians, and identify appropriate patient populations for PR-products.

ABC CEO Christine Zambricki, DNAP, CRNA, FAAN, discussed potential paths to securing payment for PR, including pass-through costs, carve-out costs, a utility model, seeking increased payments from insurers, or offsetting costs with previously discussed tests/processes that could be eliminated or changed with the implementation of PR. She emphasized the urgent need to study the gap in the blood economy between what the blood community needs to sustain a safe blood supply and the current state in order to inform the appropriate reimbursement model for the future.

Susan Stramer, PhD, of the American Red Cross (ARC), reviewed ARC's experience providing PR blood products through the Treatment Use (TRUE) Study being conducted with Cerus to provide access to Intercept-treated platelets in Puerto Rico where the ongoing dengue and chikungunya epidemics are significant. Currently, five hospitals are participating in the study, and ARC released its first Intercept-treated platelet order on March 11. ARC hopes that the experience from the TRUE study will help facilitate widespread implementation of PR in the US.

The symposium ended with a robust open discussion session and some closing remarks from AABB President Lynne Uhl, MD, who thanked attendees and speakers for sharing their insights in the interest of advancing efforts to implement PR. ♦

Serge Maltais Named President and CEO of Héma-Québec

The chair of Héma-Québec's board of directors, Martine Carré, announced on April 28 that Serge Maltais has been named president and CEO of Héma-Québec becoming effective on May 18. Mr. Maltais brings extensive experience in operations management with major pharmaceutical companies.

"The board of directors and I are very excited about Serge Maltais' arrival," said Ms. Carré. "Mr. Maltais stood out as the best candidate during a selection process that began when his predecessor left in September. Through his career in the pharmaceutical industry, Mr. Maltais has demonstrated remarkable expertise. We are convinced that, under his leadership, the organization will continue to develop successfully as it fulfills a central role in Québec's health system."

Mr. Maltais said, "Héma-Québec is renowned for its expertise in the field of biological products of human origin, including blood, human tissues, stem cells, and human milk, and in the near future, with cellular production. The organization is widely respected by the population, as it reportedly enjoys the

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Héma-Québec Names New CEO (continued on page 5)

confidence of nine out of 10 people in Québec." He added, "I am truly enthusiastic about joining the Héma-Québec team and look forward to helping fulfill the organization's mission as I meet the challenges of my new position."

Prior to joining Héma-Québec, Mr. Maltais served as vice president of Supply Chain for commercial operations at Sandoz Canada Inc., the Canadian pharmaceutical subsidiary of Novartis A.G., specializing in generic pharmaceuticals. He joined Sandoz in 2002 and was responsible for customer service, sales forecasting, purchasing, and distribution for Canada. From 1985 to 2002, he held various management positions with the Canadian subsidiary of Baxter International, where he proved to be a highly successful leader in the areas of logistics and production.

Mr. Maltais holds a bachelor's degree in industrial engineering from the École Polytechnique de Montréal and a diploma in business administration from the Université de Sherbrooke. (Source: Héma-Québec press release, 4/28/15)

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INSIDE ABC

The programs and services described in the Inside ABC section are available to ABC member blood centers and their staff only, unless otherwise specified. ♦

ABC to Hold Webinar on Using the Risk-Based Decision-Making Framework for Blood Safety Decisions

America's Blood Centers' Quality Education Committee will hold a webinar titled "Using the Risk-Based Decision-Making Framework for Blood Safety Decisions" on May 28 from 2 to 3:30 p.m. EDT.

Judie Leach Bennett, LL.M, from Canadian Blood Services, will familiarize potential risk assessors and decision makers with the policy elements and the process steps of the Risk-Based Decision-Making Framework, developed by the Alliance of Blood Operators. She will also provide guidance on how to use the framework using case studies and will highlight aspects of the decision-making process that will require specialized expertise.

ABC members can find more information in MCN 15-036. Contact Leslie Norwood at mnorwood@americasblood.org with any questions or concerns. ♦

RESEARCH IN BRIEF

A study recently published in *Vox Sanguinis* suggests that Macopharma's pathogen reduction system, Theraflex MB-Plasma, efficiently reduces bacteria in plasma. Stefan Reichenberg, of Maco Pharma International GambH in Germany, and colleagues investigated the bacterial reduction capacity of the methylene blue (MB) treatment process and its virus inactivation capacity in lipemic plasma. Bacterial concentrations in plasma units spiked with different bacterial strains were measured before and after the following steps of the Theraflex MB-Plasma procedure: leukocyte filtration, MB/light treatment, and MB filtration. Virus inactivation was investigated for three virus types in non-lipemic, borderline lipemic, and highly lipemic plasma. Leukocyte filtration alone efficiently eliminated most of the tested bacteria and MB/light and MB filtration further reduced *Staphylococcus epidermidis* and *Staphylococcus aureus* to below the level of detection. Suid herpesvirus 1, bovine viral diarrhea virus, and HIV 1 were effectively inactivated by Theraflex MB-Plasma independent of the level of lipemia. In conclusion, this study on the capacity and robustness of the "Theraflex MB-Plasma system provides new information demonstrating that this procedure combines effectively two different pathogen inactivation methods – a photodynamic treatment known to be effective against viruses and a double-filtration procedure capable of removing viable bacteria and bacterial spores," conclude the authors.

Citations: Reichenberg S, *et al*. Challenge study of the pathogen reduction capacity of the Theraflex MB-Plasma technology. Vox Sang. 2015 April 20. [Epub ahead of print] ♦

A study in *Transfusion* suggests that whole blood exchange (WBE) may offer an effective treatment option for patients with severe autoimmune hemolytic anemia (AIHA). AIHA is caused by the destruction of red blood cells (RBCs) by autoantibodies. There is no curative treatment for severe AIHA and current therapies are often insufficient to stop its progression. Therapeutic plasma exchange (TPE) is

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RESEARCH IN BRIEF (continued from page 7)

used as an emergency therapy and is sometimes helpful. Bi-Juan Li, MD, and colleagues of Xiangya Hospital in Changsha, China, used WBE treatment in patients with severe AIHA to partly remove whole blood including sensitized RBCs, destructive plasma, and activated lymphocytes, which are replaced with the donated RBCs and fresh-frozen plasma. The study included 37 severe AIHA patients who were treated with WBE by apheresis at the Xiangya Hospital from June 2003 to August 2013. The researchers retrospectively analyzed the results in these severely anemic patients. Twelve hours after WBE treatment, 26 of 30 patients' hemoglobin levels were elevated. Their total bilirubin concentration, direct bilirubin levels, and titers of antibodies were decreased, and clinical symptoms resolved rapidly, reported the authors. "This study suggests that WBE is an effective therapy for severe AIHA. Further investigation of this application is warranted," conclude the authors. No long term follow up of the patients was provided in the article.

Citation: Li BJ, *et al*. Retrospective analysis of 30 severe autoimmune hemolytic anemia patients treated by whole blood exchange transfusion. Transfusion. 2015 April 24. [Epub ahead of print]

RECENT REVIEWS

An editorial piece in the *Journal of the American Medical Association* reviews the possibilities offered by induced pluripotent stem cells (iPSCs). Pluripotency, a cell's ability to develop into all three germ layers – mesoderm, ectoderm, and endoderm – has long been the elusive core of cell development that, if properly controlled, could lead to organ and tissue regeneration. In 2006, a group of researchers discovered a method of inducing pluripotency in adult cells, however, the iPSC field is just now only beginning to realize the cells' full potential. iPSCs offer a world of possibilities in terms of researching pluripotency because they are easier to derive than human embryonic stem cells (previously the only method to research pluripotency), are largely free of ethical problems, and have enabled major expansion in the genetic diversity of pluripotent cell lines. In their commentary, Kitchener D. Wilson, MD, PhD, and Joseph C. Wu, MD, PhD, of Stanford University, review autologous cell therapies, phenotyping the genome, pharmaceutical screening and development, challenges, and the future of precision medicine and iPSCs.

Wilson KD, Wu JC. Induced pluripotent stem cells. JAMA. 2015 Apr 28;313(16):1613-4.

BRIEFLY NOTED

The first apheresis platelet transfusion aboard the Military Sealift Command hospital ship USNS Comfort was recently performed by Petty Officer 3rd Class Arwin Mejia (pictured right), a hospital corpsman and a blood bank lab tech, reported the Armed Services Blood Program (ASBP) newsletter *Focal Point*. The USNS Comfort is currently supporting Continuing Promise 2015, a US Southern Command-sponsored and US Naval Forces Southern Command/US 4th Fleet-conducted deployment to conduct civil-military operations, including humanitarian-civil assistance, subject matter expert exchanges, medical, dental, veterinary, and engineering support, and disaster response. Continuing Promise 2015 seeks to partner nations and show US support and commitment to Central and South America and the Caribbean.

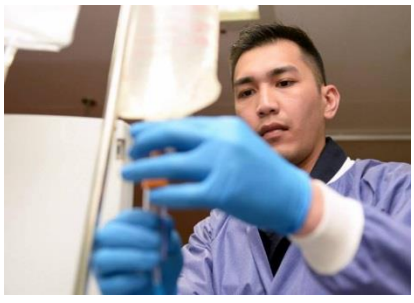

Photo Credit: US Navy photo by Mass Communication Specialist 3rd Class Andrew Schneider/Released

REGULATORY NEWS

AABB joined the American Society for Apheresis and the American Society of Hematology in asking the Centers for Medicare and Medicaid Services (CMS) to retire the 1992 National Coverage Determination document for therapeutic apheresis. The groups consider this document to be outdated and inadequate, reported the *AABB Weekly Report* on April 24. In an April 16 letter to CMS, the organizations noted that the current national coverage determination fails to include many well-established, evidence-based indications for apheresis. The organizations plan to work with local Medicare contractors to adopt more favorable coverage policies to provide greater patient access to quality care. (Source: AABB Weekly Report, 4/24/15)

THE WORD IN WASHINGTON

After nearly two decades since it was first put in place and more than a decade since it began calling for drastic cuts to physicians' reimbursement rates, Medicare's flawed sustainable growth rate (SGR) payment formula has finally been repealed by Congress. On April 16, President Obama signed H.R. 2, the "Medicare Access and Chip Reauthorization Act" into law, thus repealing Medicare's malignant and outdated payment formula, securing the program's long-term sustainability. In addition to repealing and replacing Medicare's flawed SGR with stable payment updates for five years, the bill contains a number of policies aimed at transitioning Medicare's broken free-for-service reimbursement system to pay-for-performance. More information can be found in the American Society for Clinical Pathology summary here. (Source: ASCP news update, 4/22/15)

America's Blood Centers CEO Christine Zambricki (left), DNAP, CRNA, FAAN met with Sen. Debbie Stabenow (D-MI) (right) on Wednesday. Dr. Zambricki and Sen. Stabenow discussed ABC, the vital role of ABC member blood centers in the US healthcare system, and how ABC members contribute to blood access and safety.

GLOBAL NEWS

The LFB group, Biolog-id, and the French Blood Transfusion Service (Établissement français du sang/EFS) have announced the introduction of a radio frequency identification (RFID) traceability system developed by Biolog-id for LFB, according to an April 23 press release. All bags containing plasma for fractionation leaving EFS centers will now incorporate RFID chips, which will facilitate their registration at LFB, the only company fractionating this plasma. RFID is a tool widely used for identification and tracking of various objects. In a typical RFID system, a small memory-storage chip is placed on the item being tracked. RFID readers send and receive radio waves to detect chips and read their data. RFID tags and technology can be used to provide greater visibility to blood products and their location, movement, and status. Unlike a barcode, RFID tags do not have to be in the person's "line-of-sight," meaning that the user does not have to visually match up the tag to the scanning device, as one does with a barcode. RFID also has a longer read range than do barcodes and RFID tags are re-writable. The system, developed by Biolog-id for tracking and tracing blood products using RFID, has been selected by LFB for use in managing, storing, and monitoring all bags containing plasma for fractionation that leave EFS centers in France to be fractionated by LFB to produce medicinal products. Biolog-id is the first operator in the world to offer this kind of overall traceability solution for blood

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GLOBAL NEWS (continued from page 9)

products. RFID labeling was authorized by the French National Agency for Medicines and Health Products Safety on July 26, 2012 and the technology will now be used in all 14 regional branches of EFS in mainland France. In May 2013, the Food and Drug Administration granted 510(k) market clearance for the first-ever RFID-enabled blood product tracking system to be used the US, developed by a coalition of America's Blood Centers' members and other organizations (see *ABC Newsletter*, 5/31/13). (Source: LFB, Biolog-id, and EFS press release, 4/23/15) ♦

INFECTIOUS DISEASE UPDATES

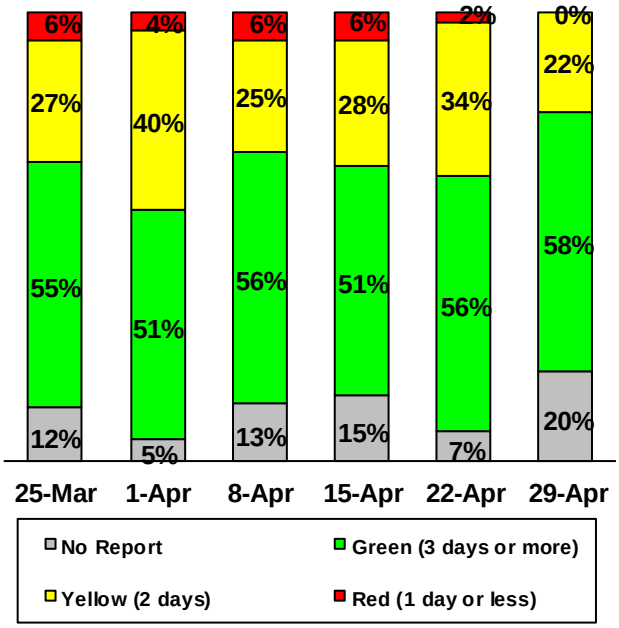
MALARIA

GlaxoSmithKline's candidate vaccine against malaria, the RTS,S/AS01 vaccine, was associated with preventing a greater proportion of malaria cases in infants and young children compared with control vaccines, according to the results of a phase III clinical trial reported by the Clinical Trials Partnership in *The Lancet*. The RTS,S/AS01 vaccine prevented a "substantial number of cases of clinical malaria," even as much as 48 months after the vaccine was administered. However, the vaccine's efficacy was strengthened when children and infants received booster doses, wrote the authors. Previously, the group had released the results of a phase II clinical trial of the vaccine, and preliminary data from the phase III trial, reporting results as recently as late 2013. Not surprisingly, the vaccine efficacy declined over a lengthier period of time. Children ages five to 17 months and young infants ages six to 12 weeks were divided into three groups: R3R Group, which received three doses of the malaria vaccine plus the booster dose at month 20; R3C Group, which received three doses of the malaria vaccine and a control vaccine dose at month 20; and C3C Group, which received three doses of the control vaccine and a control vaccine dose at month 20. The booster dose of the vaccine was associated with a higher efficacy for severe malaria in both age groups. The vaccine was more effective and averted a greater number of cases among children, as compared with infants. The phase III double-blind, observer-blind randomized controlled trial ran three to four years long and observed 6,918 children and 5,997 infants at 11 centers in sub-Saharan Africa. The phase II trial reported results after up to 18 months of follow-up, but this trial reported extended follow up – a median of 48 months for children and 28 months for young infants. Vasee S. Moorthy, BMBCh, PhD, and Jeane-Marie Okwo-Bele, MD, of the World Health Organization (WHO), point out that recommending the vaccine could create logistical concerns, as it does not appear to protect against severe malaria without a booster. The study authors note that the next steps would be an application for the Committee for Medical Products for Human Use scientific opinion, and prequalification from WHO about whether or not to license the vaccine. Despite the need for a booster, the researchers concluded that "the vaccine has the potential to make a substantial contribution to malaria control when used in combination with other effective control measures, especially in areas of high transmission."

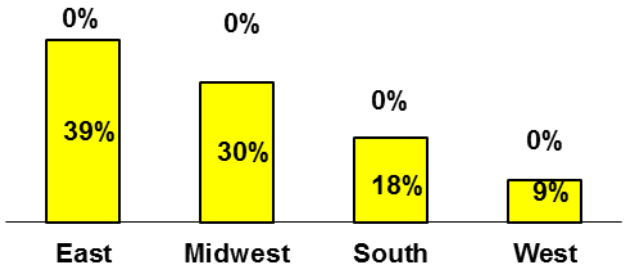
Citation: RTS,S Clinical Trials Partnership. Efficacy and safety of RTS,S/AS01 malaria vaccine with or without a booster dose in infants and children in Africa: final results of a phase 3, individually randomized, controlled trial. Lancet. 2015 Apr 23. [Epub ahead of print]♦

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

Total ABC Red Cell Inventory



Percent of Regional Inventory at 2 Days Supply or Less, April 29, 2015



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

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www.AmericasBlood.org

MEMBER NEWS

Community Blood Center of the Carolinas (CBCC) announced on April 27 that it is kicking off its Seventh Annual Students Saving Summer Scholarship Program. High school and college students who organize and host a successful blood drive with CBCC between June 1 and Sept. 30 have the chance to earn scholarship money for their secondary education. Those with the top five producing blood drives will each receive a $1,000 scholarship from CBCC. Since 2009, CBCC has awarded more than 300 scholarships and grants. "More than twenty percent of our donors are students, all of whom play a critical role in saving local lives today and into the future," said Martin Grable, CBCC president and CEO. "As almost everyone knows, our blood supply tends to drop with families on vacation and school blood drives on hiatus. 'Students Saving Summer' is as vital to our summer blood supply as education is to these students' future. We'd like to support them as they support CBCC and help save local lives this summer." (Source: CBCC press release, 4/27/15)

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MEMBER NEWS (continued from page 11)

Rock River Valley Blood Center held the 12th Annual Red Shoe Run/Walk for Donor Awareness on April 15 at Northern Illinois University's Rockford campus. The event attracted 552 runners and 258 walkers, who showed their support for a worthy cause on a sunny spring morning. Rock River Valley Blood Center hosts this event annually to recognize the lifesaving, life-restoring benefits of blood, organ, tissue, eye, and marrow donation, as well as the goodwill created in the community by donors. More than $53,000 was raised to help pay the cost for adding new donors to the Be the Match Marrow Donor Registry through Rock River Valley Blood Center. The top female runner was Shannon Teunissen of Belvidere, Ill., and the top male runner was Jeremy Stevens of Winnebago.

Pictured above, the 23WIFR News Team, including (from left to right) Mike Garrigan (anchor, event emcee), Scott Grodsky (sports director), Whitney Martin (anchor, event emcee), and Mark Henderson (chief meteorologist) in their custom-made shirts.

PEOPLE

Jeffrey D. Allen, MBA, was recently named chief operating officer and chief financial officer at Innovative Blood Resources, including its divisions Memorial Blood Centers and Nebraska Community Blood Bank. With more than 25 years' experience, Mr. Allen will provide operational and financial leadership for these organizations. Mr. Allen's strong background in healthcare and biomedical services helps the organization optimize opportunities for expansion while focusing on bottom line results. He provides leadership for key areas within the organization, including client services, donor services, financial, human resources, and information services. Mr. Allen previously served as CEO for the American Red Cross Pacific Northwest and Northern CA Regions. He also was chief strategy and finance officer for BloodCenter of Wisconsin, and held a variety of executive finance and business development roles for Baxter Healthcare. (Source: Innovative Blood Resources announcement, 4/28/15)

MEETINGS

June 1 **FDA Transmissible Spongiform Encephalopathies Advisory Committee Meeting, Silver Spring, Md.**

The Food and Drug Administration will hold a meeting of its Transmissible Spongiform Encephalopathies Advisory Committee on June 1 from 8 a.m. to 5 p.m. at the FDA White Oak Campus in Silver Spring, Md. The committee will discuss the variant Creutzfeldt-Jakob Disease (vCJD) situation worldwide and in the US. It will also hear presentations from FDA on current measures to reduce the risk of vCJD from transfusion in the US and a mathematical model of the risk reduction achievable under the current alternative geographically based deferral policies in conjunction with leukocyte reduction. More information can be found here.

Contact: Bryan Emery or Rosanna Harvey; Bryan.Emery@fda.hhs.gov or Rosanna.Harvey@fda.hhs.gov.

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MEETINGS (continued from page 12)

June 27-July 1 **25th Regional Congress of the ISBT, London, UK.**

The International Society of Blood Transfusion (ISBT) will hold its 25th Regional Congress in conjunction with the 33rd Annual Conference of the British Blood Transfusion Society in London, UK, from June 27 to July 1. Attendees will join more than 2,000 delegates from across the globe to share experiences about transfusion medicine during the scientific sessions and networking events. Attendees will hear about the latest developments in transfusion medicine and will find current and new technologies in the exhibition area. More information and registration details can be found here.

Sept. 26 **13th Annual Canadian Blood Services International Symposium: "Blood-Borne Pathogens: Defend, Detect, and Destroy," Toronto, Ontario**

Canadian Blood Services will hold its 13th Annual International Symposium titled "Blood-Borne Pathogens: Defend, Detect, and Destroy," in Toronto, Ontario on Sept. 26. More details including speakers and registration information 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

Sr. Program Manager – Donor & Volunteer Engagement (Job #7574ABC). Puget Sound Blood Center is now Bloodworks Northwest! We've grown, and today we're touching and saving lives far beyond Puget Sound -- serving nearly 90 hospitals in Washington, Oregon, and Alaska. Every day we work to save lives through research, innovation, education and excellence in blood, medical and laboratory services. We have proudly served donors and patients in partnership with our community for 70 years. Requirements include: Bachelor's degree in Marketing, Business Management, Communications, Public Relations, or equivalent experience; minimum five years senior level experience in some combination of program management, marketing or community relations, with demonstrated experience in budgeting, analytics and public speaking. Experience with nonprofit or community giving programs preferred. Experience in designing and implementing successful social media campaigns, demonstrated effective written, verbal and interpersonal communication skills, excellent facilitation, negotiation and conflict resolution skills are all required. More information at www.bloodworksnw.org. Qualified applicants send resumes to humanresources@bloodworksnw.org Attention: Job #7574ABC. Bloodworks Northwest is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, sex, religion, national origin, age, protected veteran status, disability status, or any other characteristic protected by law.

Director of Blood Collections Operations and Training. Kentucky Blood Center, located in Lexington, Kentucky is seeking a resourceful, self-motivated individual to assist the Executive Director of Blood Collections in oversight of all aspects of technical and administrative functions of the Blood Collections operations and training, ensuring quality, accuracy, excellent customer service and efficiency of the departments. Responsibilities include, but are not limited to; monitoring and reviewing staff schedules; reviewing and approving Performance Evaluations; supporting Blood Collection Managers with personnel challenges; assisting with special projects; overseeing training and proficiency of Blood Collections staff to assure safe and pleasing donation experiences for donors and safe blood products for recipients; and overseeing staff competency. MLS or Registered Nurse required. Competitive

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POSITIONS (continued from page 13)

salary, comprehensive benefits including health/dental, life, STD, LTD, 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.

Manufacturing/Hospital Services Manager. Blood Bank of Hawaii, a medium-size blood center (50,000 RBC distributions annually), has an exciting opportunity for a Manufacturing/Hospital Services Manager. This leadership position is responsible for overseeing the operations, staffing and management of the Component Laboratory and Hospital Services departments. Responsibilities will include: Ensuring efficient and effective operations in blood product manufacturing, Hospital satisfaction in meeting blood product needs and mentoring and developing a Hospital Services Supervisor and a Manufacturing Supervisor. The ideal candidate will have a BA/BS in Medical Technology or a related science, knowledge of federal and state regulations as they relate to blood center operations, and at least three years of blood center experience. Two or more years of supervisory experience required. We offer a competitive salary and excellent benefits. Please apply via our website: www.bbh.org/.

Medical Technologist. The Blood & Tissue Center of Central Texas, located in Austin, is hiring a certified lab professional to perform all patient testing functions and donor processing. This includes viral marker EIA testing, ABO testing, antibody screens and work-ups, antigen testing and cross-matching, as well as RPR and CMV testing. This position will have a direct impact on our mission and will ultimately help save lives in our community. Even better, they will work in a great environment with smart people who care about the work they do! Qualified candidates must be able to work in an area where bio-hazardous elements can exist. BS in Medical Technology (or equivalent) and ASCP or NCA Certification as a Medical Technologist or Blood Bank Technologist is required. AS and certification as MLT or BB will also be considered. Must be at least 21 years old, have a valid driver's license, proof of vehicle insurance, and an acceptable driving record. Must be able to work a rotating weekly schedule, participate in on-call, and have the availability to work on the weekends and holidays as scheduled. Familiarity with cGMP, AABB and FDA regulations is desired. Please visit www.inyourhands.org to apply.

RN – Therapeutic Apheresis (Part Time). We are looking for a Nurse to be part of our Apheresis Program. This opportunity includes collecting peripheral blood stem cells for the Be The Match program and mononuclear cells for the Dendreon Program. Responsibilities also include performing plasma exchange, red blood cell exchange, white cell depletions and photopheresis to help hospital patients with varying levels of acuity. The majority of procedures are done on a one to one nurse to patient ratio. To perform all procedures, you will work with four different apheresis instruments and develop a career in a field that is growing every year. The schedule is primarily first shift, three days a week, Monday - Friday. Also involves occasional evenings and rotating on-call weekends. The ideal candidate will enjoy working independently with minimum supervision, be able to multi-task and work under high pressure situations. You will learn to apply your apheresis and nursing skills to both adult and pediatric patients. Licensure as a Registered Nurse required. Experience in intensive care, advanced hospital nursing, or dialysis is preferred. Please apply via our website: www.miblood.org. EOE

Medical Director. Blood Systems is seeking a full-time clinically-focused Transfusion Medicine physician to join its Medical Affairs team. The Medical Director is responsible for coordinating communications between United Blood Services' district centers, the local medical community, and Corporate Medical Affairs in Scottsdale, AZ. Responsibilities include consultation with hospital staff and clinicians, hospital visits, patient blood management oversight, CLIA laboratory directorship, and medical direction to collections, manufacturing, and local clinical service functions. The successful candidate will be able to direct district medical operations from a number of hub locations within the 20 states served by Blood Systems. Requirements: 1) MD, DO or equivalent degree 2) Medical license in the state(s) of work within six months 3) Board eligibility in Transfusion Medicine 4) Blood Bank/Transfusion Medicine certification within two years of employment 5) Fellowship training or equivalent experience in blood banking/transfusion 6) Experience at a blood center and/or hospital transfusion service including provision of education, clinical consultations, and some combination of therapeutic apheresis, cell therapy, laboratory, immunohematology, etc. experience. For more information or to apply please visit: www.bloodsystems.org > Employment. Blood Systems provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups. Our organization participates in E-Verify, for more information click here.

Director, Regional Center (LifeShare). Blood Systems is hiring for a Director, Regional Center to fill its vacancy in Elyria, OH at our new member location LifeShare. Under minimal direction, this position is responsible for daily management of all operational and regulatory activities of the blood center. This position is responsible for ensuring the compliance with policies, programs, or directives set forth by Blood Systems. This position is responsible for the daily operational management of the full scope of the blood center. Requirements: Bachelor's degree, eight years related experience to include five

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years supervisory experience. Knowledge of healthcare or blood service operations and previous blood center or healthcare industry experience preferred. For immediate considered, please apply no later than **5/7/2015** on our website at: www.bloodsystems.org > Employment. Find the Hero in You. Donate blood three times a year! Blood Systems provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups. Our organization participates in E-Verify, for more information click here.

Quality Manager (CBS-Bergen). Blood Systems is searching for an experienced Quality Manager to join its team in Montvale, NJ! Under minimal supervision, this position is responsible for assisting in managing the review of quality systems and compliance in all areas of technical and clinical operations. This position serves as a resource to operations on quality issues. Participates in performance improvement initiatives through data and process analysis. Requirements: Bachelor's degree, four years related experience in a regulated industry required to include two years in a quality, regulatory, and/or auditing environment. Certification as a Medical Technologist or SBB and six months supervisor experience preferred. For immediate considered, please apply no later than **5/5/2015** on our website at: www.bloodsystems.org > Employment. *Find the Hero in You. Donate blood three times a year!* Blood Systems provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups. Our organization participates in E-Verify, for more information click here.

IRL Advanced Clinical Lab Specialist (2nd Shift). Blood Systems Laboratories is searching for an experienced lab professional to join its immunohematology reference lab in Phoenix, AZ. The busy IRL team performs complex antibody identification, red cell and platelet molecular genotyping and platelet testing for hospitals throughout the country. Requires: Bachelor's degree; must satisfy CLIA requirements for High Complexity Testing; California testing requirements must be met within one year; certification as a Medical Technologist or Blood Banking Technologist (BB) by a recognized certifying agency; three years clinical laboratory testing experience; one year of transfusion service experience. For immediate considered, please apply no later than **5/1/2015** on our website at: www.bloodsystems.org > Employment**.** *Find the Hero in You. Donate blood three times a year!* Blood Systems provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups. Our organization participates in E-Verify, for more information click here.

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.

Audit Manager. BPL Plasma, Inc. is seeking an Audit Manager for our US based plasmapheresis centers. The Audit Manager shall be responsible for scheduling and conducting internal audits while ensuring BPL Plasma meet FDA cGMP, EU, IQPP, CLIA, COLA and customer requirements. Upon completion of the audit, prepare audit reports and communicate findings to management team. Analyze audit data / reports in determining compliance trends and audit strategies. Provide tracking and trending reports of audit findings to senior management. The Audit Manager will report to the Compliance Director. Must be available to relocate to Austin, TX. Education / Experience: Bachelor's degree in scientific or technical field. Seven plus years' experience within the plasma, blood or biological industries with cGMP and EU auditing experience. Five plus years' managerial experience. Certification in auditor training programs, such as (ASQ, ISO etc.) is preferred. Must have above average writing and verbal communication skills. Computer skills required (MS Office, Word, Excel, and PowerPoint). Knowledge of FDA, EU and cGMP regulations in a biological industry. Willing to travel domestically, overnight stays one to three days per week. To apply, please submit resumes fax to (979) 846-1215 or email smit-zelfelt@bplplasma.com. Please feel free to visit our website: www.bplplasma.com.

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Auditor. BPL Plasma, Inc. is seeking Auditors for our US based plasmapheresis centers. The Auditors shall conduct internal audits while ensuring BPL Plasma meet FDA cGMP, EU, IQPP, OSHA, COLA and customer requirements. The Auditors will perform internal audits, which covers operations and quality management system at BPL Plasma collection centers, corporate office and third party storage warehouse. Upon completion of the audit process will prepare audit reports and communicate findings to management team. Follow-up corrective and preventive actions to ensure implementation and compliance. The Auditors will report to the Auditing Manager. Positions are located in Florida and Texas. Education / Experience: Bachelor's degree in scientific. Three plus years' experience within the plasma, blood or biological industries with cGMP and EU auditing experience. Certification in auditor training programs, such as (ASQ, ISO etc.) is preferred. Must have above average writing and verbal communication skills. Computer skills required (MS Office, Word, Excel, and PowerPoint). Knowledge of FDA, EU and cGMP regulations in a biological industry. Willing to travel domestically, overnight stays of one to three days per week. To apply, please submit resumes fax to (979) 846-1215 or email smitzelfelt@bplplasma.com. Please feel free to visit our website: www.bplplasma.com.

Director of Patient Services. We are currently seeking a dynamic individual to direct our Hospital Services and Immunohematology Reference Laboratory divisions. Will oversee department staffing, budget, training, education, customer service programs and consultation services to customers and perform various projects as needed. Will assist in negotiating hospital service agreements and oversee all aspects of laboratory testing and technical operations. Must possess excellent communication (verbal/written), interaction, problem solving, negotiation leadership and organizational skills. Position requires a BS/BA in related field and four years relevant experience; Must possess eligibility for State of California Clinical Laboratory Scientist License (current CA CLS preferred) and be SBB (or equivalent) certified. To apply, visit our employment page at: http://www.bloodcenters.org/about-us/employment/. Requisition #15000476. Blood Centers of the Pacific provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups.

Immunohematology Reference Laboratory (IRL) Assistant Director. The Clinical Services Division, Hoxworth Blood Center seeks Immunohematology Reference Laboratory (IRL) Assistant Director. Ideal candidate will have five years' experience and SBB (ASCP) certification at supervisor level or above in areas of immunohematology reference testing and/or transfusion service. Assistant Director of this AABB accredited IRL is responsible for leadership, expertise, oversight with emphasis on customer interactions with 24 associated labs, regional transfusion services, coordinating development, training, and managing resources. Assistant Director assures that departmental processes, procedures, quality control activities are compliant with accreditation and regulatory standards. Assistant Director is responsible for testing, technical operation, employee counseling, evaluation and other supervisory functions. Other duties: developing/managing contracts, bids, budget, management of licensed regional antibody registry, relevant projects, education of selected transfusion service technologists, bachelors/masters students, post-doctoral physicians/scientists. Bachelor of Science degree clinical laboratory science (or equivalent), SBB (ASCP) certification, three years' experience. Apply for this position (Required ID 2746) at https://jobs.uc.edu/.

IRL Technologist (Medical Technologist). Are you looking to make a difference in the job you do? The American Red Cross collects over 6.5 million units of blood annually and provides best in class IRL/testing services via our network of 41 local IRL offices. The IRL Technologist will perform basic and advanced blood donor and patient tests and interpret results to determine blood donor-recipient compatibility as well as other duties as assigned. MT (ASCP) and/or BB (ASCP) required, blood banking experience is preferred. Positions available nationwide. For more information or to apply visit: www.americanredcross.apply2jobs.com. The American Red Cross Blood Services IRL group is accepting applications for a variety of positions in the following states: Alabama, Arizona, Arkansas, California, Georgia, Kansas, Kentucky, Maryland, Missouri, Nebraska, Ohio, Pennsylvania, Puerto Rico, South Carolina, Texas and Virginia. The American Red Cross is an Equal Opportunity/Affirmative Action employer. All qualified applicants will receive consideration for employment without regard to sex, gender identity, sexual orientation, race, color, religion, national origin, disability, protected veteran status, age, or any other characteristic protected by law.

Field Representative. Indiana Blood Center (IBC) is looking for two Field Representatives (Monroe and Brown County areas and Tippecanoe County area). This position will educate and motivate new and existing donor groups, chairpersons and committees to meet IBC blood needs through sponsorship of successful blood drives. Responsible for the achievement of the monthly and annual field recruitment collection goals in whole blood and other product lines. Educates and motivates new and existing donor groups on hosting blood. Ensures the adequacy of drive sites through the site inspection procedure. Complies with current donor incentive procedure and ensures all coordinators are trained and documentation is captured. Plans and implements donor recognition and promotions. Builds

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relationships with coordinators and account leaders. Conducts recruitment strategy meetings. Recruits donors at on-site drives. Conducts training and promotes the use of DonorPoint and online schedules in order to maximize donor potential. Conducts cold calls on inactive/new territories and performs territory blitzes. Performs account sweeps prior to lock-down period and resolves internal coordination issues. Performs account assessments to help identify territory strategies. BS/BA degree; three to five years sales experience required, with proven success in business to business sales preferred. Must have valid Driver License, acceptable driving record and reliable transportation to reach communities in assigned territory. Please apply at www.indianablood.org. EEO Employer/Vet/Disabled

Senior Manager, Transfusion Services (Elmsford, New York * Full Time). New York Blood Center seeks professional to oversee the overall operations and administration of laboratories under Transfusion Services. Requires a BS in Medical Technology, MT (ASCP), NYS Clinical Laboratory License, and six plus years of transfusion service experience, including five plus years of progressively responsible management experience in a clinical laboratory environment. The ability to develop/manage budgets a must. MBA/MPH/SBB preferred. Competitive compensation package. Please apply online at: http://bit.ly/1GcIRdN. EOE AA M/F/Vet/Disability

Account Representative – East Bay Region ($50,176 Salary + Lucrative Incentive Program). Blood Centers of the Pacific is a nonprofit, community-based organization that provides blood and blood components to hospitals, physicians, and patients throughout Northern California. Blood Centers of the Pacific supports over 50,000 patients every year with blood donated by our community. It also houses the Blood Systems Research Institute which conducts medical research to improve blood safety and patient care. We are currently seeking a marketing and account management oriented individual to work with corporations and organizations in the East Bay area to promote and increase blood donations by developing existing/new accounts and coordinating blood drives. Must be comfortable in an environment where an achievement of monthly/annual goals is expected. Position requires a BS/BA in related field and one year of relevant experience; valid California driver's license, acceptable driving record and own vehicle (mileage reimbursed). To apply, visit our employment page at: http://www.bloodcenters.org/about-us/employment/. Requisition #15000344. Blood Centers of the Pacific provides equal employment opportunities to minorities, females, veterans, and disabled individuals, as well as other protected groups.

HLA Tech (Carter BloodCare – Tyler, Texas). The HLA Tech works under the direct supervision of the HLA Manager, performing medical laboratory tests pertaining to organ transplantation and has the capability to perform disease association and platelet matching. This position also participates in extensive quality control exercises to ensure that all reagents and equipment perform correctly and that results are reported accurately. This position shares all with other Technologists and Manager. Baccalaureate degree in Medical Technology and CHT (ABHI) or CHS (ABHI) accreditation preferred. One year previous laboratory experience preferred. Must have the ability to work an on-call schedule. We maintain a drug-free workplace and perform pre-employment substance abuse testing. Carter BloodCare (CBC) is an EEO/Affirmative Action employer. CBC provides equal employment opportunities (EEO) to all employees or applicants and will not discriminate in its employment practices due to an applicant's race, color, religion, age, sex, national origin, and veteran or disability status. CBC is a Pro Disabled & Veteran Employer. Qualified candidates should apply online at www.carterbloodcare.org/.