Diversity in the Donor Pool Saves Lives
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Ensuring a diverse blood donor pool is a critical priority for the blood community.

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In addition to supporting frequently transfused patients, having a diverse donor pool helps patients with rare blood.

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Major Strides Made in AABB’s First Decade
Diverse Patients Need Diverse Blood

Diversifying the blood supply—the theme of this issue of AABB News—is an essential objective of the blood community. It is one that has gained increased attention in recent years, as our understanding about transfusing patients with optimally matched blood has grown.

When we talk about diversifying the blood supply, we are often referring to expanding the donor pool so that a wide variety of blood from donors of various backgrounds is available. This helps us provide optimal care by finding the best-matched blood for transfusions to patients who are frequently transfused, namely those with sickle cell disease and thalassemia. Although it’s less common to refer to patients with rare blood, these patients benefit from a diverse donor pool, as well. To meet the needs of the general population, we need donors from diverse groups.

The first feature article this month, starting on page 6, discusses the reasons why diversity in the blood supply is so important and describes efforts to increase that diversity. Although we commonly discuss the ABO and Rh antigens, there are many, many more that may need to be matched to protect patients from the risk of a transfusion reaction. Another feature article, which begins on page 14, addresses how a diverse blood supply can support patients with rare blood who need a transfusion and how many blood centers identify donors with rare blood. Some individuals need rare blood that is only present in less than 1,000 individuals in the United States, and having diverse donors in the donor pool may help blood banks locate such rare blood. As AABB continues to celebrate its 75th Anniversary, we’re also continuing AABB News’s monthly “AABB history” article. In this issue, we highlight our Association during its first full decade: the 1950s.

AABB’s 75th Anniversary Celebration

It’s an apt time to be discussing AABB’s history, just when the Association is celebrating its 75th anniversary this year. Although we are highlighting this key anniversary throughout all of 2022, AABB is planning our big celebration for the 2022 AABB Annual Meeting, which will be held Oct. 1-4 in Orlando. This is the perfect time to mark your calendars. You won’t want to miss our Association’s first in-person meeting since the COVID-19 pandemic began 2 years ago. So get ready to talk to your colleagues face-to-face and join us to honor AABB’s past, present and future as we celebrate this truly momentous anniversary.

Dana Devine MSA
AABB President
Mark your calendars!
October 1-4, 2022 in Orlando, FL.

The AABB Annual Meeting brings together the latest research and practice-changing resources for the fields of blood and biotherapies.

Details on virtual learning options will be available Spring 2022.

aabb.org/annual-meeting
Since its founding in 1952, Bio-Rad has sought to advance health care through the development, manufacturing and marketing of innovative products for life science research and clinical diagnostics.

As clinical diagnostic facilities have begun to expand throughout the world, lab directors and clinicians seek ways to maximize productivity and minimize expenses. “Bio-Rad helps optimize workflows and turn-around time through our state-of-the-art systems designed with today’s evolving diagnostics laboratories in mind,” said Mbithe Nguku, a product manager at Bio-Rad Laboratories, Inc. “These systems include fully- and semi-automated gel platforms, a microplate solid-phase platform and reagents that can meet blood bank testing requirements.”

By providing a broad range of innovative products and services to global clinical diagnostics and life science research markets, Bio-Rad Laboratories has played a leading role in the advancement of scientific discovery, said Nguku.

Nguku noted that one of Bio-Rad’s focus areas – immunohematology products – is of particular importance to the AABB community. “Bio-Rad’s immunohematology products empower transfusion facilities to use methods, platforms and informatics specific to their unique needs,” Nguku said.

When it comes to moving the field of blood banking and transfusion medicine forward, Bio-Rad values scalability in their blood bank solutions. According to Nguku, some of the company’s products offer complete solutions that involve information, data management, remote access, security and quality control.

**AABB Corporate Partner**

Bio-Rad joined the AABB Corporate Partners Program based on the value it places on AABB as the leading voice for the blood and biotherapies community. AABB members are a “unique, highly educated audience with the desire to advance their professional knowledge,” said Nguku. “When AABB members choose Bio-Rad, they are automatically connected to our transfusion science and blood banking experts, sharing their knowledge and wisdom. Through continued education via webinars, additional training and product support, we provide a community of knowledge for our audience to feel confident in us delivering their results.”

In joining the Corporate Partners Program, Bio-Rad hopes to gain exposure and access to the leading scientific minds from the blood and biotherapies community, Nguku explained. “We are thrilled to provide more continuing education offerings and engaging with the blood banking leaders to understand their needs for post-pandemic health care and transfusion medicine, to offer comprehensive solutions to the laboratory.”

Specifically, Bio-Rad has an external quality assurance program for blood bank samples. The company also offers a blood bank module with software that promotes quality control, streamlines workflows and replaces paper records in the blood bank with digital recording. Bio-Rad also has HIV testing solutions, including a supplemental assay with confirmation and differentiation, which meets the second step of the Centers for Disease Control and Prevention’s Recommended Laboratory HIV Testing Algorithm for Serum or Plasma Specimens. This assay is available for both diagnostic and donor testing in clinical laboratories and donor/plasma centers.
Invest in yourself, your profession and your organization.

AABB’s eCasts offer a wide variety of education opportunities for professionals in blood banking, transfusion medicine and biotherapies. The programs are developed and led by world-renowned experts and are designed to help advance the field and promote professional development.

These 60- to 90-minute interactive, online programs provide CE/CME credits at your convenience. Programs are available both live and on-demand and can be purchased for individual or group viewing.

aabb.org/eCasts

*AABB offers continuing education credits/contact hours for most AABB eLearning activities. Continuing Medical Education (CME) activities have been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of CME Outfitters and AABB. CME Outfitters is accredited by the ACCME to provide continuing medical education for physicians.
Throughout the past several decades, the blood community has continually advanced the field and worked tirelessly to ensure the optimal safety of blood transfusions. However, the potential for adverse events has not been completely eliminated.

The risk is most likely to be elevated when there is incompatibility between the recipient of a blood transfusion and the unit of blood he or she is given. In particular, if a recipient has developed red blood cell antibodies following a blood transfusion or pregnancy, a delayed hemolytic transfusion reaction is possible if a hospital is unaware of the existing antibody. These risks are especially a concern among patients who require frequent blood transfusions and who have relatively high prevalence rates of red blood cell alloimmunization, including those with sickle cell disease, thalassemia and select other diseases.

Currently, there are several systems in place to try to address these issues. When a patient is known to have a particular alloantibody, health care providers will specifically order blood products lacking that antigen. However, these antibodies can decrease over time, sometimes falling below the level of potential detection (then referred to as “evanescent antibodies”). In such cases, transfusion with a particular unit of blood may appear to be compatible but the opposite could actually be true.

An additional concern is that patients are not always treated at the same facility or by the same health care providers. In instances where a patient moves or begins receiving care at a different facility, information about their antibodies might not be shared. Health care providers may try to get more information about their patient by calling the patient’s previous providers, but this is not always effective. Additionally, while the practice of sharing medical records has increased in recent years, data about a patient’s antibodies is often not included or fully detailed in such records.

Jeanne Hendrickson, MD, professor of laboratory medicine at Yale University, is working with many others on developing a proposal for the creation of a nationwide registry to track patients’ antibodies. Hendrickson, along with her colleagues George Hauser, MD, and Chris Tormey, MD, both from Yale University; and Claudia Cohn, MD, PhD, from the University of Minnesota and AABB’s chief medical officer, recently wrote a white paper highlighting the need and potential benefits of a nationwide antibody registry.

Hendrickson said such a registry would be an important advancement in further optimizing the safety of blood transfusion for patients throughout the United States. “Transfusion safety will be improved by having an accurate antibody history for patients who require a blood transfusion,” she told AABB News. “Evanescent antibodies can be evaded if a blood bank knows about them and can select red blood cells lacking the cognate antigens for transfusion.”

Hendrickson noted that nationwide antibody registry systems are in place in other countries and have helped to further improve transfusion safety. “A registry like the one we are proposing has existed in the Netherlands for more than a decade and has been shown to significantly improve transfusion safety, reducing the risk of delayed hemolytic transfusion reactions by 50%,” she said.

Hendrickson said that thus far, she and her colleagues and collaborators have met with strong support for their proposal. “There has been overwhelming interest and support from the community and from every organization that we have talked to,” Hendrickson said. “Members of the blood community understand this will improve patient safety.”

In June 2020, AABB submitted comments to the
Department of Health and Human Services that advocated for the establishment of a national red blood cell antigen typing patient database and noted that such a resource would improve patient outcomes by expediting access to compatible units of blood for individuals with special transfusion requirements. Since that time, AABB has been working with the American Society for Clinical Pathology, the American Society for Hematology, America’s Blood Centers, the American Red Cross and others to identify opportunities to drive progress.

In a recent survey about the development of such a registry among members the AABB Transfusion Medicine Subsection Coordinating Committee, 97% of respondents said they were in favor of a nationwide red blood cell antibody registry.

Gagan Mathur, MD, MBA, director of transfusion medicine and associate professor of clinical pathology at the Keck School of Medicine at the University of Southern California, is a strong supporter of the development of a nationwide antibody registry. He recently collaborated with colleagues on a paper published in Vox Sanguinis titled “A Case for National Registry of RBC Antibodies.”

This paper highlights a patient with an increased risk for bleeding who was undergoing a liver transplant. The initial antibody screening was negative but a history of anti-Jka was identified in a review of the patient’s history in a local registry of RBC antibodies. The surgery was, therefore, postponed until well-matched antigen-negative blood products could be transfused.

Mathur told AABB that without the local registry, this patient’s evanescent antibodies would not have been identified, thus increasing the risk for a transfusion-related adverse event. “The registry allowed us to identify the patient’s increased risk and administer the appropriately matched units of blood,” Mathur said. “We were fortunate that there happened to be a local registry, but that is not always the case. This patient’s story sheds light on the need for a nationwide registry. I believe it is essential for patient safety and improved outcomes.”

Next Steps
Hendrickson and her colleagues and collaborators are working to make their proposal a reality. They have formed a nonprofit group to help move this project forward and have shared their proposal with various government agencies and health care leaders.

Some key issues need to be addressed before the registry can be realized. First, the blood bank information systems at facilities throughout the country need to be set up to coordinate with one another and share information. There are currently about six major blood bank information systems, none of which currently communicates with the others. Hendrickson and her colleagues have been in communication with leaders of these major blood bank information systems to explain the proposal for the nationwide antibody registry and gain their support. One of the systems has already signed on to the project and is developing an interface to coordinate with a nationwide registry. Hendrickson and her colleagues are hoping to gain the support of the other blood bank information systems soon.

In addition, there is inconsistency with the terminology used at various facilities to describe antibodies. Hendrickson said consistent terminology throughout the country is essential in ensuring the success of this project. “We have developed a working group of dedicated volunteers who are compiling a uniform antibody list, focused around ISBT terminology,” Hendrickson said.

Hendrickson said that although much additional work is needed, she is optimistic that the registry will eventually be implemented. “The time is right to initiate a nationwide registry,” she said. “Such a registry will be particularly important for alloimmunized patients who have been cared for at more than one hospital system. If this project is successfully implemented, it will further advance our goal of optimizing transfusion medicine quality and safety for all patients.”

“Transfusion safety will be improved by having an accurate antibody history for patients who require a blood transfusion.”

—Jeanne Hendrickson, MD