



San Diego Blood Bank Launches Innovative Precision Blood™ Expansion

Precision Blood™ typing matches blood recipients with donors of 30+ blood groups using 300 antigen markers, which can reduce blood transfusion reactions – a breakthrough that transforms the standard of care for patients today

San Diego, Calif. – April 24, 2023 – San Diego Blood Bank (SDBB) today launched its groundbreaking Precision Blood™ initiative expansion, which the nonprofit healthcare organization believes can greatly improve the standard of care as we know it today for blood transfusion patients. SDBB, and its division Southern California Blood Bank, is primed to fully launch the program and scale the Precision Blood™ typing process. Thanks to generous grants from The Conrad Prebys Foundation and the David C. Copley Foundation to support the first phase of SDBB's Precision Blood™ initiative, over 30,000 blood donations collected and processed by SDBB have received Precision Blood™ typing to better match with blood recipients.

The organization's collection efforts and research initiatives in San Diego, Orange, and Los Angeles Counties impact patients in need throughout Southern California and across the U.S.

With the official launch of the Precision Blood™ expansion, SDBB and Southern California Blood Bank leaders are also issuing a call for research funding; hospital and laboratory partners; and more diverse blood donors in order to truly scale the Precision Blood™ typing process.

"We want people to know the thought of advanced medical research happening in the future is actually happening now with Precision Blood™," says Nikhil Nayak, chief business officer, San Diego Blood Bank. "Our initial work reveals how Precision Blood™ is positively changing and saving lives today. With the funding we need to continue this groundbreaking innovation, we will be able to expand our capabilities to meet the needs of more transfusion patients."

Revolutionizing treatment for blood transfusion patients

Nearly 18 million blood transfusions happen each year throughout the U.S., for everything from routine surgeries to treatments for patients with leukemia or other cancers, kidney disease, bone marrow disorders, childbirth complications, or sickle cell disease. When someone receives a blood transfusion, it is critical the blood they receive is a close match to their own.

However, patients who receive multiple transfusions are at risk for adverse transfusion responses to antigens in donor blood that do not precisely match. That is because the body recognizes the difference in red blood cell antigens that may cause a patient's immune system to reject transfusion, leading to life-threatening reactions and other complications. Between 14 and 44% of chronically transfused patients develop antibodies against red blood cells, which may cause reactions and negative health outcomes including a decreased life expectancy.

SDBB's Precision Blood™ initiative is based on medical research showing there are over 30 blood groups containing over 300 antigens which impact how well a person will respond to

blood transfusions or match with a donor. This is a new frontier in precision medicine for blood transfusion patients. By comparison, only two blood groups and three antigens are typically considered for routine transfusion (involving the widely known blood types A+, A-, B+, B-, AB+, AB-, O+ and O-).

“Ultimately, we want to help as many patients receive the best matched blood available when needed,” said Dr. Mark Edmunds, chief medical officer for San Diego Blood Bank. “For example, when a patient receives specific blood matched with a donor of similar racial or ethnic background, there may be a decrease in adverse transfusion reactions and improved clinical outcomes.”

Precision Blood™ in action for patients and donors

Kamila is an empathetic and truly sweet child who loves to be outdoors playing with bugs and climbing up trees. Born with a genetic blood disorder called thalassemia that requires chronic lifelong blood transfusions, Kamila received her first blood transfusion at two months old and will continue to depend on them every three weeks for the rest of her life. Thanks to generous blood donors and San Diego Blood Bank’s Precision Blood™ research, Kamila is now receiving blood that is more precisely matched.

"So far, my daughter Kamila has not experienced any of the serious complications that living with thalassemia can present, but because she's had over 150 blood transfusions from over 150 different blood donors, she has developed antibodies - significantly decreasing her pool of matched donors," said Kamila's mother, Maria Saradpon. "Without matched donors, Kamila would not be able to receive the only treatment available for her condition, which are lifelong blood transfusions. With better matched blood, Kamila can continue to thrive, and her future is bright."

For decades, blood donors who have given to SDBB and Southern California Blood Bank have enabled groundbreaking research and technological breakthroughs that make a difference in the lives of patients. Precision Blood™ donors who help Kamila and patients like her will receive the added benefit of learning more about their specific blood type and will be able to use this information to advocate for more specifically matched medical treatments for themselves and their families moving forward.

In the future, as the program is scaled, anyone who donates blood to the San Diego Blood Bank and is tested with this technology will see their Precision Blood™ type information in their online donor portal, along with current cholesterol information that is performed on every blood donor. Additionally, donors can soon receive a report of their own Precision Blood™ type analysis, with details on their exact antigen profile after they sign a medical release form. Once healthcare technology systems can improve the interface between blood banks and hospital partners, medical providers will have immediate access to a patient's precise blood type information, which will improve a blood type match and decrease the possibility of a reaction after a blood transfusion during surgery or other medical treatment.

“Knowledge is power, and Precision Blood™ provides a new level of knowledge to both donors and recipients’ families,” continued Nayak. “Through expanding our Precision Blood™ initiative, we can continue to have this impact on patients like Kamila and on donors who have helped save and improve her life.”

The Need: Funding for research, hospital and laboratory partners, more diverse donors

SDBB has access to blood donors from across the U.S. through affiliations with numerous blood centers around the country, including the National Blood Collaborative, and is a leader in

Precision Blood™ testing for this reason. However, within its current laboratory configuration, SDBB only has space capacity to run 15,000 samples per year. As a nonprofit organization, SDBB needs support from funders to expand testing capacity and run more research to ensure proper typing and matching of the right blood with the right patient. .

Over the next two years, SDBB and Southern California Blood Bank aim to expand the diversity of their blood products while partnering with hospitals and biotechnology organizations to expand lab capacity and conduct the research needed to further scale their Precision Blood™ typing process so that these closely matched blood supplies can be delivered to any patient who needs them. Current hospital and laboratory partners include Rady Children's Hospital-San Diego, Kaiser Permanente-San Diego and Harbor-UCLA Medical Center.

Leaders from SDBB and Southern California Blood Bank have a goal to raise \$4 million to:

- Further scale sample testing and build a comprehensive Precision Blood™ products inventory;
- Perform comprehensive scientific testing of the feasibility of Precision Blood™ for transfusions as opposed to the current standard of care;
- Compare clinical outcomes in patients transfused with standard blood services and those transfused with Precision Blood™.

Additional funders, hospitals, and laboratory partners are needed to support the expansion of the Precision Blood™ initiative and are encouraged to contact Cherryl Castro-Lector at 619-400-8214 or clector@sandiegobloodbank.org.

None of the Precision Blood™ initiative can be accomplished, however, without a vast diverse donor base that can provide the vital blood products needed for research, typing, and matching for patients. While SDBB outperforms many other blood banks nationwide in its efforts to recruit donors that reflect the true diversity of its community, the organization realizes there is still more work to do: 63% of their blood donors are Caucasian, while only 1.5% of donors are Black and 11.6% are Hispanic. The organization hopes that more diverse donors, particularly those who identify as Black and Hispanic, will step forward to make Precision Blood™ more impactful for more patients.

“We recognize every patient is an individual and their treatment should be tailored for that individual,” says Dr. Edmunds. “The more closely your donor looks like you in terms of your genetic background, the more likely a transfusion is going to be successful.”

How to make a blood donation appointment

Interested donors are encouraged to contact SDBB and Southern California Blood Bank and set up a blood donation appointment by visiting sandiegobloodbank.org/donors or scbloodbank.org to find a blood donation center or mobile site in their area and book a blood donation appointment online, or call at 619- 400-8251.

A Precision Blood™ donation appointment is just like any other blood donation appointment. All personal identifiers are removed from every blood sample, and donor data will remain anonymous.

“Our objective is to save lives through blood products and raise the standard of care in blood transfusions,” said Dr. Edmunds. “Precision Blood™ is the next logical step in our progression

toward these goals and helping patients increase the probability of improved medical outcomes.”

To learn more about San Diego Blood Bank and the Precision Blood™ initiative, please visit sandiegobloodbank.org/precision-blood.

About San Diego Blood Bank / Southern California Blood Bank

San Diego Blood Bank is a 501(c)(3) nonprofit organization also operating as Southern California Blood Bank, serving hospitals throughout Southern California. San Diego Blood Bank is dedicated to community health by providing a reliable supply of blood to patients in need. Our vision is to further ensure the health of our community by simultaneously delivering related health and wellness education and services and collaborate with various partners in medical research. San Diego Blood Bank currently operates nine fixed site donation locations and 10 bloodmobiles. For more information about SDBB, visit SanDiegoBloodBank.org or connect with us on [Facebook](#), [Instagram](#), [Twitter](#) and [LinkedIn](#).

Media Contact:

Geneva Gámez / geneva@scatenadaniels.com / 619-939-6084

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