



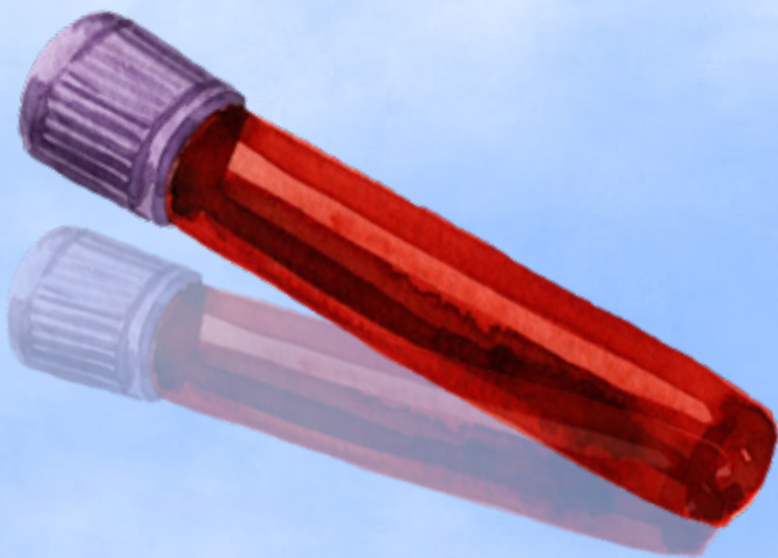
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STANFORD BLOOD CENTER





Dear Donors, Volunteers and Friends,

Happy New Year! And what an incredible feat it has been to get to this point!

Each quarter we deliver our digital donor newsletter, *PULSE*, with a winter edition that it is both print and digital, to talk about what has been happening around your Blood Center and, most importantly, to show the amazing impact of your generosity. This edition, we are especially proud to feature a look back at 2020: all the unexpected challenges we have faced, and all of the ways we have come together as a community to be there for those patients who need us.

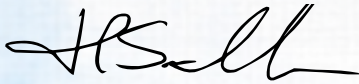
Since March of last year, all of our lives have been impacted. We've feared for our health and the health of our loved ones, and, amidst numerous social justice events that only added to the feelings of chaos and hurt, we've struggled to find ways to support each other as a community while we have been separated. Though so much changed, one thing that has remained constant is local pa-

tients' need for life-saving blood products. No matter how many COVID-19 cases are reported, no matter the injustices rocking our nation, or the fires raging in our own backyards, patients did and do need donations every single day. And despite so many important issues demanding our attention, you, our loyal and selfless blood donors, have continued to show up to offer your unwavering support of people whom you will likely never meet, but whose lives have undoubtedly been changed by your acts of kindness and everyday bravery.

While our future remains uncertain in many ways, what this past year has revealed above all else is the unshakable strength we have when we work together. I truly feel that our spirit is stronger than ever and that, no matter what comes our way, we will continue to be the anchor in the storm for our community.

Throughout this edition of *PULSE* (which is available in full at stanfordbloodcenter.org/pulse), we have compiled stories that highlight just some of the lives you've touched and some of the ways that your donations have allowed us to make great leaps in innovation to respond to patients' needs during these difficult times. From the bottom of my heart, thank you for giving us the means, the strength and the inspiration to continue providing hope for healing to local patients.

With gratitude,



Harpreet Sandhu, Executive Director/CEO



COVID-19 Convalescent Plasma

In the start of April 2020, SBC became one of the first blood centers in the U.S. to create a COVID-19 convalescent plasma (CCP) program. The program, which encouraged recovered COVID-19 patients to donate antibody-rich plasma for current COVID-19 patients, gained national media attention and led to over a thousand community members offering to donate. Thanks to the generosity of our CCP donors, many of whom had never given blood before, we have been able to make nearly 1,300 CCP units* to support patients across the U.S. While we can't name everyone who has supported this program, we'd like to highlight some of those hospital partners and donors who have seen the real impact of CCP and have made this program the incredible, potentially life-saving resource it is.

From Our Hospital Partners

"The COVID-19 pandemic has created a historic challenge for Stanford Hospital and has had a devastating impact on the lives of patients and their family members. However, a bright spot in these difficult times has been the outstanding collaboration between Stanford Blood Center and the Stanford Transfusion Service. SBC's convalescent plasma donation program has facilitated the investigation of this potentially promising therapeutic strategy. We are so grateful for the generous donors and the tireless efforts of the SBC team members who have provided a ray of hope for our patients." — Marie Hollenhorst, MD, PhD, Attending Physician in Transfusion Medicine and Hematology; and Lead Investigator in the Convalescent Plasma Expanded Access Protocol

"During the early months of the pandemic, supplies of CCP were very limited, with many hospitals in northern California, including UCSF, needing to wait for several days to obtain a single unit of CCP to treat severely ill COVID-19 patients at their facilities. CCP units provided by SBC were typically made available within one to two hours and were used to treat more than 25 critically ill COVID-19 patients admitted to the intensive care units at UCSF hospitals. UCSF Transfusion Service and patients at our facility are indebted to SBC team members, and especially grateful to SBC plasma donors for their selfless support. Thank you!" — Ashok Nambiar, MD, Medical Director, UCSF Transfusion Medicine

Read CCP stories on our blog: stanfordbloodcenter.org/sbc-blog.

To learn more about SBC's CCP program, visit stanfordbloodcenter.org/covid19plasma.

From Our Donors



“When you survive something like cancer, you normally don’t have the opportunity to help others with your own struggle, medically speaking. This virus is unique in that, if you’ve survived it, you have an opportunity to really help people.”

— John Tallarida

“There are a lot of misconceptions around plasma donation. One question I get a lot is about whether I’ve met the patients my plasma went to, and I have to explain that that’s

not typically how it goes; there isn’t that one-to-one connection. But I’m grateful just knowing I was able to help someone. To be able to do something truly good for the community during this really difficult time — and potentially even to save a life: That is enough.”

— Andrew Armstrong

“This is my way of fighting back. Not just by donating, but by promoting accurate information, and by doing all I can to make sure people see and hear about convalescent plasma. It really could save lives.” — Robert Jendrey



“... When you put all the politics and the debate about mortality rates and all those other numbers aside, it really boils down to caring about other people. To me, it makes a lot of sense to help in any way you can, be it as simple as wearing a mask or as involved as donating plasma.” — Jared Nash

**Data for this article was collected prior to December 2020 to enable timely printing. To read this article in full, visit stanfordbloodcenter.org/pulse.*

Purple Top Tubes:

Your Impact on Research

By Marino Bozic, Research and Clinical Services Manager

When you make a whole blood or apheresis donation at SBC, you may notice the phlebotomists collecting tubes from your donation. One of the tubes you will see drawn is a purple (or lavender) top K2EDTA tube, which is coated with spray-dried K2EDTA, an anticoagulant, on its inner wall.

SBC has its own infectious disease testing lab and for every donation, this lab requires a standard cluster of tubes (four purple top and two red top) for ascertaining important data such as ABO/Rh (blood type), as well as whether the blood is positive or negative for CMV, HIV, hepatitis and West Nile virus, to name a few.

The other reason these tubes are so important is that they serve as valuable specimens in our research community on a daily basis. They are commonly used for hematology tests, including red cell grouping, antibody screening, Rh typing and assessing the state or presence of HIV RNA. They usually serve as healthy donor samples and controls for experiments that oftentimes have the purpose of improving patient care. In 2019 and 2020, the Blood Center provided researchers roughly 11,000 purple top tubes!

These additional purple top tubes are drawn along with the standard tube cluster only when there is a research request. Typically, tubes are supplied on either the day of or day after they are requested. However, when the researcher has special requests, such as tubes from donors only of a certain ethnicity, age or gender, the availability will depend on how soon someone who meets that criteria is planning to come in and give blood, since we do not usually make appointments just to draw research tubes. (Note that, while we look at this donor information to determine whom to collect from, the donor's name and identifying information are not provided to the researchers.)

So, the next time you see that purple top tube being drawn, you can take pride knowing that it is embarking on a unique journey with the potential to benefit some really valuable research studies. By giving blood and research products, you're supporting the patients of today and tomorrow!

To read this article in full, visit stanfordbloodcenter.org/pulse.



Next-Generation Sequencing

By Deepti Sharma, PhD, Clinical Laboratory Scientist; Tamara A. Vayntrub, Project Manager; Bing Melody Zhang, MD, MS, FCAP, Assistant Director, HLA Lab

SBC is now using next-generation sequencing (NGS) as the basis for its HLA typing method for both bone marrow and stem cell as well as solid organ transplants. The testing has already made a great impact, improving the success and safety of transplants for patients by helping accurately identify potential donor and patient matches before the transplants are performed. Recently, SBC validated the NGS-based chimerism testing, which brings a higher level of test sensitivity and accuracy to monitor engraftment in patients after a marrow or stem cell transplant.

Improving Organ Transplants

As a bit of background, the human leukocyte antigen, “HLA,” is a highly complex genetic system with thousands of different HLA proteins being expressed on human cell surfaces based on the unique genetic code of each individual. The HLA proteins are critical in “self” versus “non-self” distinction by our immune system, and therefore the HLA differences between the patient and organ donor play a major role in acceptance or rejection of foreign tissue for transplants.

The expression of each HLA protein is linked to each other expression genetically and is difficult to tease out on a granular level unless deep genetic examination is performed. NGS is a technology that can be applied to HLA typing based on deep sequencing of the entire HLA genes, combined with powerful bioinformatic tools. This method provides complete HLA sequence information at the HLA allele level, which improves our understanding of allele diversity and the degree of a match between patients and their transplant donors.

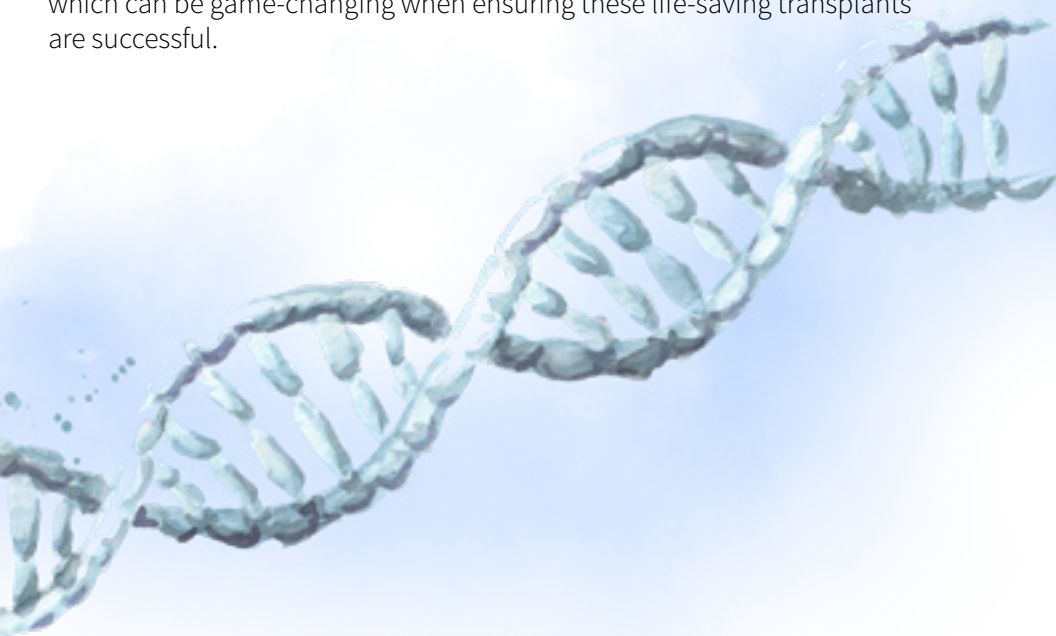
The Histocompatibility & Immunogenetics Laboratory (HLA Lab) at SBC has been a pioneer for more than 50 years in the discovery of a multitude of genetic variants of HLA molecules. The genetic similarity of HLA molecules between a patient and the prospective donor is crucial in determining whether or not the patient can successfully receive a transplant from that donor. Finding a volunteer marrow or stem cell donor from the general healthy population who is a perfect genetic match to the patient’s HLA variants is no easy task. The high resolution HLA typing results of solid organ transplant recipients and donors, generated from the innovative NGS-based method, also enable accurate assessment of compatibility and immunological risk before and after transplants.

Evaluating Success of Transplantation

Bone marrow and stem cell transplants are necessary most often for patients with various blood disorders, such as leukemias and lymphomas. To gauge how successful a transplant has been, medical professionals will check on two populations of cells in the patient's blood or bone marrow: the new, healthy donor cells, and the old, possibly diseased recipient cells. If the majority of the cells in the patient post-transplant are from the healthy donor, the transplant is likely successful; if a large number are still the patient's own cells, this signals a failing transplant and a return of disease. Often, timely treatment of a patient with a failing transplant will depend on how early and accurately the medical team can detect the reemergence of the patient's own cells.

SBC is currently testing and validating an extremely sensitive test using NGS technology that will allow a better determination of engraftment success (stable establishment of healthy donor cells in the patient). The introduction of this technology provides the opportunity to improve the current model by using a more sensitive method that can identify very small amounts of both donor and recipient cells after the transplant, thereby increasing the ability to detect disease relapse at an early stage, sometimes even before the patient shows any physical signs of illness.

Ultimately, introduction of this pioneering laboratory technology will allow us to achieve greater accuracy, sensitivity and a quicker turnaround time for results, which can be game-changing when ensuring these life-saving transplants are successful.



Perspective From SBC's Founder:

AIDS Epidemic vs. COVID-19 Pandemic

Dr. Edgar Engleman is the founding Medical Director of Stanford Blood Center (SBC), as well as Professor of Pathology and Medicine at Stanford University. Over the course of his career, Dr. Engleman's passion for supporting patients has fueled accomplishments that have radically transformed the blood industry and patient care. In particular, his unrivaled understanding of the immune system enabled him and his team to produce the first AIDS virus blood screening test in 1983, to create a technology that became the basis of the first immunotherapy for cancer to be approved by the FDA in 2010, and to contribute to research that has significantly improved outcomes for transplant patients.

Having been with SBC since its inception in 1978, Dr. Engleman's perspective on where we are today, and especially where we have been this past year, is informed by a rich history of challenges and innovative problem-solving. To help us better understand how far we've come and, in doing so, what that can teach us about patient care in the age of COVID-19, Dr. Engleman unpacks the AIDS epidemic and how it compares to the COVID-19 pandemic for the Blood Center.

AIDS Epidemic

Dr. Engleman's investigation into the immune response and HIV was never in his initial plans, but rather was the result of quick pivoting to address a critical need during a crisis. The AIDS epidemic was a scary time because, for years, public health officials, medical researchers and the general public knew there was a problem but were unable to identify a solution.

"It became clear fairly quickly how the infection was transmitted, but the infectious agent wasn't identified for nearly five years," Dr. Engleman reflected. "We knew how to identify risk factors, but we didn't know who really was infected, especially since the disease is very slow to develop and most people who were infected felt perfectly well for several years following their apparent infection."

AIDS was also particularly frightening because it was known to be transmitted through bodily fluids, including blood. All blood centers could do during this time was try to limit donations based on known risk factors (such as IV drug use and common AIDS symptoms) and hope for more information on the causative agent. What was known is that years before people developed the symptoms of AIDS,

their immune cells underwent dramatic changes, and Dr. Engleman's test measured those changes. After the test was introduced in the early 1980s, it not only demonstrated how the blood supply could be made safe from AIDS, but also it ultimately led to a transformation of the standards of blood donor testing and of safety for the recipients of blood transfusion everywhere. The risk of HIV transmission through blood transfusion in the U.S. is now less than one in 1.5 million.

COVID-19 Pandemic

"I've never experienced anything like the COVID-19 pandemic," said Dr. Engleman. In particular, he noted that the "extraordinarily infectious nature of COVID-19 and just how many people could have it without knowing it" has been unique and has changed the way we interact with one another in unprecedented ways.

One of the positive differences between these two crises, however, is the response of the scientific community. "There are some similarities with AIDS — especially with everyone being frightened — but you can see how far the science has advanced. It took us five years to identify the virus causing AIDS; it took us closer to five days to identify the virus causing COVID-19 (SARS-CoV-2)." Both the first blood screening for AIDS and the first blood antibody test for COVID-19 were developed at Stanford.

Now,* medical researchers at Stanford and beyond continue to use this knowledge of the virus and the immune response to the virus to find light at the end of the tunnel. "The challenge of developing a COVID vaccine is, in the end, an immunology challenge," said Dr. Engleman, "the hope that the vaccine will sensitize our immune system to SARS-CoV-2 so that, if and when we are exposed to the virus, our immune system can attack and neutralize it before the virus can get established in our tissues."

As someone who has built his career around studying and harnessing the immune system for public good, Dr. Engleman knows the power of immunotherapy and vaccine-based prevention. "I know a vaccine will work," he said. "It's just a question of when and how well."

SBC continues to support the scientific community in its fight against COVID-19 by providing blood products to COVID-19 researchers in many labs at Stanford and here at the Blood Center, including research being performed in SBC's Flow Cytometry Lab, and providing COVID-19 convalescent plasma to boost the immune response of patients currently fighting COVID-19.

Takeaways

Despite the current state of affairs, Dr. Engleman remains hopeful, dedicated as ever to the power of medicine and medical research, which he has seen transform public health and save lives, time and time again.

“Though we continue to wade through uncharted territory, it is very exciting to witness and be directly involved in discoveries that are improving the lives of patients,” he said. “Ultimately, all this work that our group and others in the medical community at large have been doing and continue to do is enabling patients to live longer and happier lives — which is why I’m still doing it.”

**Note that this article was written in November 2020 to enable timely printing.*

Read more about Dr. Engleman’s immunotherapy milestones in cancer treatment and organ transplantation by reading the full version of this article at stanfordbloodcenter.org/pulse.



Hadley's Story:

A Six-Year-Old's Fight Against Cancer During a Global Pandemic

It's hard to believe that for the bulk of 2019, Katy Crain knew very little about cancer. She considered herself lucky to have never had any close family members affected by it, and while she was sympathetic to cancer patients and had donated blood before, the concept seemed removed from her everyday life. All of this is hard to believe because, today, Katy can talk in extensive detail about different types of leukemia, about the treatment required — she could guide you through a model of the main types of cells that blood is made of and describe how the body is attacked at the cellular level. While all of us have struggled in the past year to adapt to a “new normal” during the COVID-19 pandemic, for Katy and her family, the phrase “new normal” represents a much deeper struggle.

Katy and her partner Pam are mothers to two daughters, Makena, age 10, and Hadley, age 6. In fall of 2019, the whole family was looking forward to Hadley starting school. But shortly after Hadley started kindergarten, she began to complain that her legs were hurting, and her teacher and school staff began to note to the family that Hadley wasn't running around on the playground with the other kids. Though at first Katy shrugged it off since Hadley was generally low energy, Hadley's pain soon became constant and persistent.

“Hadley started limping,” Katy said. “The doctor was convinced it was growing pains, but it was getting worse, and quickly. There was one day we went to a birthday party and she actually started crying and asking for a wheelchair. I was crying, too — it was really stressful not knowing what was going on, and not knowing how to help.”

Insisting there was something beyond growing pains at play, Katy brought Hadley back to the doctor in September, where they did a blood draw and noted that, while everything appeared fairly normal, Hadley was a bit anemic and showed some signs of inflammation. A referral was put in for rheumatology, but the appointment wasn't until January 2020.

In the meantime, the family tried to hold out, but Hadley kept getting worse. “I remember watching her on Halloween. She had been so excited to dress up in her cheetah costume — Hadley loves everything about cats. But she struggled trick-or-treating. It was heartbreaking seeing how she couldn't run and keep up

with the other kids. Eventually she refused to walk at all, and we had to put her in a stroller and wheel her all the way up to the door to get candy,” Katy recalled.

All this time, Hadley continued to limit her activity at school, missing out on valuable playtime with her peers and even the school’s walk-a-thon (though she powered through and completed four laps around the field). Then on November 13, Katy got a phone call from Hadley’s principal. “They told me that Hadley fell at lunch and that she was okay but is crying in the office. I rushed down to the school and saw that she couldn’t put any weight on her foot. All she could say was, ‘Mommy, it feels puffy, it feels puffy.’” They clearly could not wait any longer to get help. Katy took Hadley from school that day and went straight to the emergency room.

After the examination and multiple blood draws — a process that was very traumatic for Hadley who, having had her blood drawn after her first doctor’s visit, knew the pain involved — Hadley, Katy and Pam were left to wait in the ER. They heard doctors and nurses floating the word “oncology” around but had no real idea what was going on, just an overwhelming sense of dread and fear for what was to come.

It wasn’t until midnight that a doctor came into the room. “When she walked in, she asked if we knew what was going on. It kind of reminds me of when you get pulled over and the police officer asks you if you know why, and you don’t know what to say, and you’re just anxious... She told us, ‘We believe Hadley has leukemia,’ and we were floored. Not much from that moment is a clear memory,” Katy said. The few things she does remember are telling the doctor that her job of telling moms their children had cancer must be incredibly difficult; and being aware that she was “the mom sobbing in an ER hallway’ that others must be feeling sorry for.”



The doctor informed Katy and Pam that it could be one of two types of leukemia: one that was much more aggressive but for which treatment would be done much sooner, and one that would be a lot easier to beat, but for which treatment would be much longer. They weren't sure which to hope for.

Over the next few days, Hadley had a biopsy and additional testing that confirmed she had acute lymphoblastic leukemia, a blood cancer with a great prognosis but with a two-and-a-half-year treatment plan. "We knew we would be fighting this for a long time," Katy said. She already has the date marked on her calendar when treatment will end: June 24, 2022.

From the moment of diagnosis, everything happened very quickly. Hadley began chemotherapy and lost her hair, there were more hospital stays, more clinical visits. "You never know how much it will take, how intense it is," Katy reflected. "Every night, Hadley takes a chemo pill, and every week she gets a different type of chemo at the infusion center, and she has had 10 lumbar puncture procedures under general anesthesia where they inject chemo into her spinal fluid. We show up every Friday to the hospital, and it is a day-long process that starts when they use a needle to access the port put in her chest and draw blood. Then they tell us if her blood counts are safe enough for chemo, if she needs to wait or if she needs a transfusion."

As of fall 2020, Hadley has had 12 blood transfusions. "I remember the first time seeing that bag — it's the same little bag that they collect during donation. As I watched the blood traveling down the tube from the bag and into Hadley, it was very surreal thinking how someone had been sitting in a chair just like this with a needle in their arm donating, and now we were here on the receiving end." Though bags of donated blood are stripped of their donors' information, Katy always sneaks a peek to try to glean any information she can, in the hopes that the person who donated knows how grateful she and her family are.

Aside from the treatment itself, one of the hardest parts has been explaining it all to Hadley — why she has to take medicine that makes her sick, why she can't go to school, why she feels like "the only six-year-old in the world who has this." Even explaining to Hadley's sister, Makena, why Hadley acts upset when she has to take steroids and why she has to spend more time with relatives during Hadley's hospital visits has been extremely trying for them all.

Then, as if adjusting to their new reality weren't difficult enough, COVID-19 hit its first peak just before Hadley was given clearance to go back to school and spend time with her friends. "We weren't yet over the trauma of hearing Hadley had cancer when the pandemic happened," Katy said. All that time spent looking forward

to returning to school and seeing friends, to “normal,” was for naught. Even the trip planned for Hadley’s “Make-a-Wish” had been canceled, something Hadley still hasn’t come to terms with. Hadley isn’t the only one who feels the pain of the pandemic, either. “They say it takes a village to raise a child,” Katy said. “We have a fantastic community, and they are helping all they can, but now it’s palpable how much we are lacking those villages.”

Though they can’t share meals or watch the kids, the one thing Hadley’s village has done to show their support is donate blood. “When Hadley was first diagnosed, I had coworkers from New York to Texas wearing cat ears — they have sort of become Hadley’s symbol — and sending me pictures of them giving blood. They even featured Hadley at her sister’s school, too, when there was a blood drive,” Katy said.

Now whenever people ask what they can do to help, Katy tells them about the importance of blood donation. “Even if it doesn’t go to Hadley, I know there’s a parent on the other side of that who is so thankful,” Katy said.

So, while Katy adjusts to her own new normal — giving Hadley a nightly chemo pill, hearing Hadley remind her to bring numbing cream in the car any time they go out in expectation of a hospital visit, knowing way more about cancer (and teaching her kindergartner way more about cancer) than she could have ever imagined — she is hopeful that, by telling her story, she and Hadley can help save lives in the process.



Sam and Beth's CCP Story:

Critically Ill Patient and Wife

Turned Plasma Donors

Dr. Sam P. Most, Chief of the Division of Facial Plastic & Reconstructive Surgery at Stanford Health Care (SHC) and professor at Stanford University School of Medicine, is not only an accomplished and beloved member of the Stanford community; he is also a dedicated husband in his familial life and a healthy, active individual in his personal life. However, when faced with COVID-19, neither his role in the healthcare community, nor his strong support system at home, nor even his glowing medical record were enough to prevent him from becoming very ill.

Sam first started feeling “a little off” on Friday, February 28. By that Sunday, he had all the symptoms he thought indicated flu. Despite his reservations that he could have COVID-19, he decided to be tested for the virus when, instead of his symptoms getting better after a few days as they typically would with the flu, he felt himself continually declining. By Friday, March 6, Sam became the staff member at SHC to be diagnosed with COVID-19.

Even though he was free of any preexisting medical conditions and was in great health prior to his illness, Sam could not shake the virus, spending the next week “pretty much horizontal,” unable to eat and unable to muster enough energy at times to get out of bed or even to talk. While at home, he was under the care of his wife, Beth, who, despite contracting a milder yet significant case of COVID-19 herself, was extremely attentive and doing all she could to support Sam. However, his illness eventually became so severe that he had to be hospitalized.

For 13 days, Sam was laid up at SHC, fighting to keep going. During this time, his condition deteriorated to requiring oxygen and intensive monitoring, though he was able to avoid intubation. This was not only a terrifying time for Sam, but also for Beth who, even if she hadn't had COVID-19 herself, would not have been able to visit due to Sam's assignment to an isolation room.

“It is very surreal to see someone in your family so sick,” Beth said. “Normally when a loved one is ill, you can go see them, you can check on them. There were times when Sam was so sick that he couldn't text me back because he couldn't muster the energy to even hold up his phone.” With periodic updates from hospital staff as her only source of news, she said it was hard to believe that something this devastating was all really happening.



Finally, toward the end of his nearly two-week stay in the hospital, Sam started showing signs of improvement. Weakened by the illness and having lost nearly 20 pounds, being able to move around without the aid of a walker after two weeks of requiring one was a reason to celebrate. At last, Sam was released from the hospital and allowed to return home to recover and rehabilitate, a long process that he attests was only made possible with the support of Beth, his “guardian angel.”

While recovering, Sam learned about COVID-19 convalescent plasma (CCP) and, after some investigation, contacted Stanford Blood Center to get involved.

“We knew that if either of us could prevent anyone from going through what Sam had to go through, we would do it in a heartbeat,” Beth said. Since recovering from COVID-19, Beth and Sam have both made multiple successful donations.

Now that the couple is fully recovered and is moving past their frightening experience, they are focusing their energy on giving back and are sharing their story in the hopes of benefiting other COVID-19 patients. “For me as a healthy person to get that sick that quickly and to feel as awful as I did was really hard for me and for my family,” Sam said. “We knew that when I got out, it was really important for us to try to donate CCP, to make a positive out of what was extremely negative.”

Through their donations and advocacy, both Sam and Beth have already benefited countless patients, and we at SBC are so grateful for their selfless generosity.

To read this article in full, visit stanfordbloodcenter.org/pulse.

To learn more about SBC’s CCP program, visit stanfordbloodcenter.org/covid19plasma.

What It Meant to Be “Team SBC” in 2020

To help paint a clearer picture of how the challenges of 2020 affected teams all around the Blood Center, we asked team members to tell us, in a few sentences, what being an SBC team member in 2020 meant to them.

“Last year was my 21st year working in SBC’s Processing Laboratory, which performs tests to ensure safety of each unit of blood available for patients. Twenty-twenty ushered in major organizational challenges but, personally, I felt even more energized to come to SBC each day to ensure that our work continued. I am very grateful to each of our donors, volunteers and colleagues who, working as a team, continue to make the SBC mission possible.”
— Pette D. Pamukcu, CLS Lead for CLS Processing Laboratory

“

Twenty-twenty was incredibly challenging, but what I’ve learned is that our organization is unlike any other. We have overcome all obstacles through collaboration, resilience and dedication to our mission. I have never been so proud to be a part of a team.

— Michael Martinez, Collections Manager

”

“As Donor Services Training Supervisor, I participate in the selection of candidates applying for nurse and technician positions and their overall initial training. Adaptions seemed to pop up on a daily basis due to COVID-19. However, the new team members took it all in stride as if the challenges were standard and typical processes. This cohort is one of the strongest, most positive and enthusiastic group of new-hires we’ve had!”
— Karen Boudin, Training Supervisor





“ Our team, Field Recruitment, was hit hard due to most of our blood drive partners having to cancel drives. I was inspired by many of my team members who took the ball and ran with it, doing whatever it took to pull together, to reinvent and recreate so we could continue to bring in what blood we could. I walked away from these challenging times feeling like no matter what we are faced with, SBC, with the help of our amazing donors, can prevail!

— Tonya Rae Medina,
Administrative Associate

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“ Though this has been evident since long before 2020, the challenges we faced drove home that we are so lucky to have the blood donors who choose to support us. I truly feel that SBC donors are the most sophisticated, dedicated, caring and conscientious group, and we see that in their continued loyalty through the years and their dedication to helping our patients at a moment's notice.

— Arlene Layon,
Medical Services Manager

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“Because my department is a support department, we are usually not intimately involved in what you'd think of as 'day-to-day operations' at the Blood Center, like the phlebotomists and blood inventory management teams are. When SBC started COVID-19 convalescent plasma collections, however, we became so involved, whether that be by preparing vials for testing, putting together samples for research studies or saving repositories for future use. Having those constant interactions with different departments at SBC has been gratifying. The success with this program has been a total team effort.”

— Lorna Tolentino, Flow Cytometry Lab Manager

To read this article in full, visit stanfordbloodcenter.org/pulse.

In Loving Memory, Susan H. Belanger, RN

August 22, 1950 – May 18, 2020

It is with deep sadness that we inform our donor community of the passing of one of our charge nurses, Susan Belanger, on May 18, 2020.

For nearly 20 years, Sue, affectionately referred to as “Sue B.,” was an integral part of the SBC Collections team. She left an indelible impression on everyone who knew her and helped save countless lives through her work as a registered nurse.

Sue started as an oncology nurse at Good Samaritan in 1992. She began a “second career” in nursing in 2001 when she became a charge nurse here at SBC, where she worked until her death. Sue was inspired in her journey to help patients by the experience of her son, Geoff, who was encouraged to join the Blood Center many years ago as well by his mother. Geoff was born with Diamond-Blackfan anemia and received multiple transfusions at a young age, which made Sue even more engaged in patient care and treatment. After joining SBC, Sue also pursued a BA in psychology from San Jose State University, where she graduated magna cum laude in 2002.

Sue was hardworking, selfless and generous; both a counselor and a confidante. She was so proud of her family and their accomplishments. Their education and achievements gave her a sense of fulfillment in being a good mother and provider, setting her children up for success in life. Sue loved spending time with her family, especially her grandson Giovanni, and she was ecstatic about the birth of her second grandson, Sebastien.

Sue touched the lives of everyone she met. Words cannot express how much she was loved or how much she will be missed.

Shortly before Sue's passing, SBC released an article about her and Geoff. You can learn more about their relationship and her passion for supporting others at stanfordbloodcenter.org/driven-to-serve. To read this article in full, visit stanfordbloodcenter.org/pulse.

Hosting a Blood Drive During a Pandemic

Q&A With BDC Jim Gardner of Good Karma Bikes

Q: How long have you been holding blood drives with SBC, and what first made you become a Blood Drive Coordinator (BDC)?

A: I've been a BDC since 2016 with Good Karma Bikes. With an organization like Good Karma, we look for these kinds of opportunities to support the community. In fact, Good Karma just won "Nonprofit of the Year" for California Senate District 15! Clearly, we take the "karma" in our name seriously.

Q: How have your responsibilities as a BDC changed during the pandemic?

A: Usually being a BDC is all about advertising on the front end and simply making people aware of your drive. During the COVID-era, my job involves a lot more of answering donors' and potential donors' questions. People are, understandably, very cautious, so I get a lot of "Is it safe?", "Will our waiting area and canteen be socially distanced?", "What about close contact with nurses or phlebotomists?" I talk often about the highly regulated industry of blood collection and all the safety measures we have in place during these drives, including masking, social distancing and frequent cleaning of donor areas.

Q: Have you seen any impact to donor turnout during your drives?

A: While this isn't the case for every drive or for SBC's center collections, we at Good Karma have consistently seen an even better turnout since the start of the pandemic; at that first drive, we were nearly 200% over our goal! I think it's because the customers we have at Good Karma are very socially conscious and they understand what a challenge it is right now to get donations.

Q: Why was it important to you to keep holding drives, even during a pandemic?

A: In times of need, as we are in right now, it's important to step up with everything you can reasonably do to support the community. To me, it's this spirit of "We are all in this together." We've got to help each other, and when one person can't donate, the rest of us have to help out. It's that simple.

Thank you to Jim, Good Karma Bikes and all of our blood drive partners throughout the community! Your support is invaluable in saving lives!

To read this article in full, visit stanfordbloodcenter.org/pulse.

Recent Milestone Donors

100 Donations



Dean Endo



Catherine Chandler

- | | | |
|--------------------|--------------------|--------------------|
| Catherine Anderson | Dean Endo | Mark Nelson |
| Craig Barker | Robert Fazo | Catherine Noonan |
| Cheryl Basinger | Werner Field | Douglas Olson |
| Shannon Berendes | Charles Garwin | Catherine Palter |
| James Bockholt | Herbert Gong | Kelley Prebil |
| Robert Bollier | Mary Hanrahan | Michael Randel |
| Claudia Buchner | Arthur Hardee | Keith Reckdahl |
| Craig Champion | Linda Heiple | Timothy Schacher |
| Catherine Chandler | Christopher Heiser | Shelly Segall |
| Mary Chow | Robert Higa | Erika Shue |
| Charles Clark | Alvin Hironaga | JW Smith |
| Donna Clarke | Alan Hubbard | George Stevens |
| Clement Dickey | Ryan Johnson | Dennis Symanski |
| Stephen Elrick | Paul King | Eric Tannenwald |
| | Karey Krauter | Robert Tompkins |
| | Kenneth Ledbetter | Kenneth Valenzuela |
| | Joshua Lipp | James Vanpernis |
| | David Marks | Kathy Wimble |
| | Susan McMahon | Arnim Wolter |
| | William Menkin | May Yasui |
| | Gordon Mitchard | |

200 Donations

- | | |
|-------------------|---------------------|
| Edward Gory | Raymond Normantas |
| David Heintzelman | Robert Ouye |
| Sandra Hinzmann | Hussain Saribeiklou |
| David Lemire | Sharon Storm |
| Thomas Macauley | Susan Watkins |
| Kevin Moeller | Curtis Weil |
| John Murayama | Gregory Woodward |



Susan Watkins



Hussain Saribeiklou

300 Donations

Daniel Barritt
Hilary Hart
John Mendoza
Rafael Ornes
Shelley Shostak
Edward Wallace

Hilary Hart

300th
donation

400 Donations

Jeffrey Alford
Raghavendra Loka
Ronald Mancini
Mary Snedden

John Mendoza

300th
donation

500 Donations

Ben Brian
Joseph Michael

600 Donations

Fred van den Haak
Thomas Welch

Ben Brian

500th
donation

700 Donations

Eric Buhr

700th
donation

This article includes all donors who reached a new milestone between December 1, 2019, and November 15, 2020.

Words That Work

From January to November* of last year, SBC welcomed nearly 7,900 first-time donors! These donors came from a number of different places, and we know from talking with new donors that often one of the most successful and powerful outreach tools is you, our current donors! Your own generosity and knowledge of donation is a real inspiration for many, and a great starting point for any community advocacy you can do to help spread the word about patients' need for blood.

We know that starting that conversation about donation can be difficult for some folks, so we thought we'd help out by providing some facts that you can use to motivate people in your life to follow your example and give back. With your help, we can build up our donor community to keep meeting patients' needs for many years to come!

Why Donate Blood?

- One blood donation could save up to three lives
- An estimated 38% of people in the U.S. can donate blood, but less than 10% actually do
- 1 in 7 patients visiting a hospital will require a blood transfusion
- 1 in 83 births will require a blood transfusion

Why Donate Now?

- About every 2 seconds, someone in the U.S. needs blood
- Every day in the U.S., patients require approximately 30,000 units of red blood cells, 7,000 units of platelets and 10,000 units of plasma

Why Donate at SBC?

- SBC was founded in 1978 to respond to the increasingly large and complex transfusion needs of Stanford Health Care and Lucile Packard Children's Hospital Stanford, as well as to perform research and teaching
- As a community blood center, SBC supports local patients first and works closely with partner hospitals to collect only the blood that is needed
- SBC is unique in that we separate out byproducts of the donation process that can't be transfused — such as white blood cells — and make them available to researchers in the area who are working on innovative cures and therapies for the patients of tomorrow

Read more about blood donation and its impact at stanfordbloodcenter.org/first-time-donor and stanfordbloodcenter.org/blood-donation-facts.

**Data for this article was collected prior to December 2020 to enable timely printing.*

Racial and Ethnic Diversity in Donation

Go into a blood center to donate today, and there are many factors that influence your eligibility to donate: age, travel history, disease risk, medications. One thing that is never a cause for deferral today, but once proved an incredible barrier to giving blood, was race.

America's first blood center, established 1937 in Chicago, accepted donations regardless of the donor's skin color, but labeled all donations made by Black people with an "N" for "Negro." Blood labeled in this way was seen as less desirable and usually either reserved for Black patients or outright refused by hospitals. Despite lacking any scientific evidence that there was a difference between blood given by Black and white donors, the segregation of blood products — or outright refusal of Black donors — was the industry standard until around the end of World War II.

The struggle for equitability in donation, though difficult, was ultimately successful. Today, blood collection practitioners and the medical community consider race and ethnicity in donation in a very different and much more forward-thinking way. In some cases, employing demographics as an identifying factor for blood donors — particularly for donors of color — can actually be lifesaving for certain patients.

One of the most common examples we see is with sickle cell patients, who often require blood that not only is ABO type compatible, but also has an extended match for other red blood cell antigens such as Duffy and Kidd. Finding a matched blood donor in these situations is much more likely if the donor is Black.

Another example of a story you may recall from a few years ago is that of Zainab,



a two-year-old girl battling cancer who sparked an international search for blood. Zainab, who was supported by a sister blood center in Florida, was in desperate need of a very rare type of blood that had to be negative for a red cell antigen called Indian b (Inb) to prevent severe transfusion complications.

Although all patients require blood that is ABO compatible, some patients like Zainab also need blood that is an extended match for one or more other red blood cell antigens. All individuals express a different combination of these other red blood cell antigens, but since blood types are determined by genetics, it follows that when a patient requires blood matched for other antigens, such as the rare Inb type for Zainab, you are more likely to find a match in certain geographic and ethnically specified populations.

In Zainab's case, the blood she needed is largely associated with people of South Asian descent, but, even so, it is estimated that only 4% or less of South Asian people even have this blood type. After a search that made headlines across the world and led to over 4,000 donations being tested for Inb, Zainab finally found her donors: five perfect matches from multiple countries who continued to donate throughout her treatment. As of early 2020, following two years of chemotherapy and more than a dozen transfusions, Zainab is in remission.

Though Zainab's experience was more harrowing than most, having patients who have special blood types or require blood with special antigens is not all that uncommon. In fact, SBC has its own Special Donations team that works precisely on patient cases like these. Once a patient with a specific blood need is identified, this team looks through many donor profiles in as much detail as possible to determine who is most likely to be a match for the patient in need. Chief among their considerations in selecting a possible donor are, you guessed it, race and ethnicity.

It's often painful to look at our nation and see just how many ways racism impacted (and, in some ways, continues to impact) outcomes in all facets of society. And while there is still work to be done across the healthcare spectrum, one thing is certain: Racial and ethnic diversity in blood donors is both necessary and celebrated. It is a source of strength and a means by which, both symbolically and literally, we can heal our community.

A special thank-you to the National Center for Biotechnology Information, University of Pennsylvania, the New York Times and WSVN Miami News (Zainab's story) for their previously published works on these topics, which were referenced in the writing of this article.

Donor Loyalty Store

Have you visited the “Store” tab on your donor portal lately? As a reminder, each donation you make earns you points,* which can be used to redeem items — or donate to other organizations — in the Donor Loyalty Store (DLS) on sbcdonor.org.

Store Items

The DLS features gifts for all price points. Our newest items include our 76-piece AAA excursion road kit and our redesigned cycling jersey. You can also order yourself a new donor ID card for free anytime in the DLS.



Donate Your Points Back

Every year, SBC partners with three Donate Your Points Back partners that you can make donations to with your points. This year we’re excited to welcome back the Leukemia & Lymphoma Society and Lucile Packard Children’s Hospital Stanford, and to add the Humane Society of Silicon Valley, which has been an outstanding Give Good partner in the past.

Four Seasons and Ten Times



If you donate at least four times (or the equivalent in double red blood cell donations, per our website*) in calendar year 2021, you’ll earn this year’s collectible Four Seasons t-shirt, which has an artsy theme and is available in both masculine and feminine cuts. If you donate at least 10 times in calendar year 2021, you’ll also be eligible for our 10 Times Gift for 2021, which is a high-quality first aid kit! Both of these items will automatically populate in your DLS for zero points once you become eligible.

**Curious about the points breakdown for each visit? Learn more about this and other topics related to the DLS at stanfordbloodcenter.org/donor-store.*

Impact by the Numbers

From January through November 2020*
your support meant:

1,295

COVID-19 convalescent
plasma products made
to support patients
throughout the U.S.

68,500

transfusions to support
local hospital patients

**Data for this article
was collected prior
to December 2020 to
enable timely printing.*

Over 20,000

research products shipped
to support cures and
therapies of the future



What Was, and What Is to Come

By Harpreet Sandhu, Executive Director/CEO

As we close out this issue, we want to reflect on how the challenges we have overcome and the innovations we have brought about will lead us into a new year that, though still shrouded with uncertainty, offers much to look forward to.

As we have touched on in bits and pieces throughout this magazine, COVID-19 has had a tremendous impact on our ability to collect as well as our daily operations and strategies. While we set out with a number of projects and goals on the forefront of our minds in January 2020, our working priorities quickly shifted. Even before there was a local presence of COVID-19, we wanted to make sure every appropriate safety measure was proactively implemented to protect our

donors, team members and patients. We watched public health information around the clock and frequently stopped at a moment's notice to update our safety guidelines, train team members and find effective ways of informing the community of our new policies.

Then in March, as COVID-19 began to hit close to home and mobile blood drives began to cancel, we worked quickly to answer questions and quell misinformation, rearranged team members' schedules to open more appointments, rescheduled donors and made frequent pleas to the media and public health officials to promote donation.

Despite navigating these challenges, we stayed open to support existing and new research customers and even started a plasma program that responded directly to the needs of COVID-19 patients at a time when very few blood centers were able to address the needs of regular patients, let alone those with COVID-19.

Ultimately, our story is one of success — thanks to you. The outpouring of support we received meant that, despite restrictions on public outings, despite social distancing and uncertainty around what was to come, *despite a global pandemic*, not a single surgery had to be rescheduled due to a blood shortage at SBC, and not a single patient at our partner hospitals was left without blood when they needed it most. As the world spun into chaos around us, we were an anchor for patients and for our community.

As we look toward the future, we are all too aware that our plans and priorities can change at a moment's notice. However, we have set some lofty goals that, with your support, I am certain we can achieve. Currently, we have nearly 70 projects planned to help maximize efficiency and create more avenues for serving our community. Chief among these is our plan to create more opportunities for donation to meet the growing patient need at our partner hospitals, which includes growing our mobile blood drive program and creating an easy-to-use app that makes appointment booking more accessible. We are also focusing our efforts on increasing the use of pathogen-reduction technology on our platelet units (a process that yields even safer products for immunocompromised patients) and even expanding our testing abilities to support other community blood centers.

Throughout all of this, we intend to keep you in the loop and remind you of the lives you are touching. We're so excited to grow our impact and to continue to be a rock for local patients, no matter what this year or any year throws in our path. Above all, we will continue to provide hope for healing and to save lives. Together.

To read this article in full, visit stanfordbloodcenter.org/pulse.

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