

CASE STUDY

Emergency Blood Drives During the Covid-19 Pandemic: A New Model of Collaboration among UCSF Leadership, Medical Students, and a Community Partner

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The closure of public spaces during the Covid-19 pandemic has led to the cancellation of thousands of community blood drives — a major source of blood for hospitals. The United States is at risk for a secondary public health crisis if a continuous pipeline of community donations is not reestablished. At University of California San Francisco (UCSF), a multidisciplinary group formed to plan and execute a series of emergency blood drives with new protocols to minimize risk of Covid-19 transmission. The working group included UCSF medical students, senior faculty, health system leadership, School of Medicine deans, hospital and campus operations, and a major blood provider. The combined expertise of this group overcame administrative and safety hurdles to establish a replicable model of community-based donation and create an opportunity for people to contribute to a critical public health need. Here, they describe the formation of the working group, major hurdles and solutions, and their blood drive model.

KEY TAKEAWAYS

- » Even in light of shelter-in-place requirements, blood drives are necessary and feasible, and academic medical centers can fill the gap left by the closure of public spaces and cancellation of community drives.

- » A multidisciplinary collaboration between School of Medicine students, faculty, deans, UCSF Health leadership, facilities, operations, communications, and media is critical to overcoming the increased, complex, and evolving barriers to holding large events during the Covid-19 pandemic.
- » Medical students are well suited to lead and staff blood drives during the Covid-19 pandemic.
- » Aligning the interests of the medical center, blood provider, and community enabled us to have an immediate, tangible impact by accelerating the planning process (2 weeks vs. typical 8–12 weeks).
- » The updated blood drive model, which was established to address emergent needs, offers a long-term, sustainable approach for others to use during and beyond the Covid-19 pandemic.

The Challenge

In response to the Covid-19 pandemic, San Francisco instituted a broad-reaching shelter-in-place policy on March 16, 2020, that immediately closed community spaces.¹ Evolving nationwide limitations on public gatherings had led to the mass cancellation of blood drives, which are the primary source of blood products in hospitals.² In mid-March, two major blood providers, Vitalant and American Red Cross, announced diminished blood supplies of as little as 2 days' worth.³ The disruption of the standard model of community-based blood drives has put the health care system at risk for a critical blood shortage if a continuous pipeline of community donations is not reestablished.⁴

Rapidly developing a safe, sustainable model for collecting blood donations in community settings during the Covid-19 pandemic is a necessity given the short half-life of blood products² and the need for continuous donations.

The Goal

Our goal was to quickly adapt standard blood drive procedures to comply with shelter-in-place and physical distancing requirements and execute a series of blood drives on UCSF's campus to: (1) develop a replicable blood drive model at our academic medical center with potential for adaptation by other health care and nonmedical institutions; (2) address the ongoing need for collecting blood products during the Covid-19 pandemic; (3) provide a safe opportunity for individuals to contribute to a critical public health need; and (4) inspire confidence in donors that safe blood donation is possible in the Covid-19 era.

The Team

Central to this effort was a partnership between two senior UCSF faculty (the chair of Laboratory Medicine and a senior faculty member in the Department of Surgery) and two UCSF School of Medicine (SOM) students. Senior UCSF Health leadership including the Chief Clinical Officer, Chief Medical Officer, and SOM deans served as integral partners in addressing institutional

and administrative hurdles. The Donor Recruitment Representative and Manager of Donor Recruitment from Vitalant represented the blood provider in operational aspects of drive organization.

The SOM students served as project managers, planning and coordinating drive logistics, including working with UCSF Media Relations, UCSF Communications, UC Police Department (UCPD), facilities management, and parking management. Student volunteer coordinators recruited and managed health professions students to staff the drives. Vitalant contributed all equipment and personnel for collection of blood products. Blood donors from UCSF and the San Francisco community were recruited through internal UCSF messaging and local media coverage.

The Execution

In mid-March, a third-year UCSF medical student was approached by a senior faculty member interested in organizing a blood drive to address the impending blood shortage. Planning began the next day, March 18. Concurrently, under the guidance of the UCSF SOM deans and the [UCSF Covid Student Aid](#) initiative, a first-year UCSF medical student surveyed interest in volunteer activities, which yielded 200 students interested in donating blood. These UCSF SOM students became the UCSF Blood Drive project managers, with two senior faculty providing direct guidance and oversight. One faculty sponsor introduced the students to Vitalant to assess potential barriers to organizing multiday drives on UCSF's campuses. Once feasibility was confirmed, the project managers connected with UCSF Health and SOM leadership to form a multidisciplinary, virtual UCSF Blood Drive Working Group consisting of the team members listed above.

“ *The disruption of the standard model of community-based blood drives has put the health care system at risk for a critical blood shortage if a continuous pipeline of community donations is not reestablished.* ”

The group decided to open the drives to the community rather than limiting them to UCSF affiliates only. UCSF-only drives would limit additional foot traffic of non-UCSF personnel on campus; however, it was important to our leadership to ensure that the effort was an inclusive community partnership, consistent with our mission as a public institution. We held the drives at campus sites that were set apart from clinical areas in order to minimize traffic in areas dedicated to patient care.

Project managers met with Vitalant staff for an in-person walk-through of potential spaces. Requirements included >1,500 square feet (for optimal physical distancing), adequate electrical supply, ramp accessibility, nearby parking, and separation from clinical areas. We identified ideal spaces at two UCSF campuses: an indoor gymnasium at Parnassus Heights and a banquet hall at Mission Bay. We relied on our Working Group to facilitate use of this space; similar spaces had been converted to meet evolving Covid-19 pandemic needs.

We worked with UCSF facilities to ensure appropriate tables and chairs were available. UCPD was brought on board to ensure that community members could enter UCSF's campus. UCSF parking secured space for Vitalant vehicles, including a box truck and minivan, blocking metered spaces and loading areas in front of the donation sites for the duration of drives. The UCSF Communications team created standardized signage to direct donors and minimize unnecessary traffic (Figure 1).

FIGURE 1

Signage Directing Individuals to Location of Blood Drives



Source: The authors

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In collaboration with Vitalant, UCSF Communications, and our faculty partners, we developed a standardized communication outlining the need for blood donation and addressing potential questions and concerns (Figure 2a, Figure 2b).

FIGURE 2A

UCSF-wide Communication about Emergency Blood Drives

Dear UCSF Community,

Over the next two weeks, we will hold blood drives at our Parnassus and Mission Bay campuses, and we urge you to participate. Blood has a short shelf life and must be continually replenished. As people shelter at home, there has been a critical nation-wide blood shortage which also will impact UCSF Health and our ability to care for patients.

The nation's two largest blood providers, American Red Cross and Vitalant, have put out calls for emergency donations. We are partnering with Vitalant, the largest provider in San Francisco, at the following locations and dates:

- **Parnassus Heights – Millberry Union Gymnasium: April 1st, 2nd, and 3rd**
- **Mission Bay Conference Center: April 7th, 8th, and 9th**

Please make an appointment to donate blood at these sites. Anyone who meets eligibility criteria, regardless of affiliation with UCSF, can [sign up here](#) (sponsor code: UCSF).

We recognize you may question whether it's safe to donate blood during this time. It is important that you comply with social distancing guidelines whenever you leave your home. We are also following these guidelines once you arrive at the donation site including scheduling appointments to prevent overlap of donors, restricting all visitors, and spacing activities at the donation site at least six feet apart. All potential donors will undergo the standard health and travel screening process we are using at our hospital entrances. Recent studies have failed to detect the COVID-19 virus in the blood of patients with active COVID-19 disease, affirming that the virus is not a blood-borne pathogen.

Blood drives are essential health care operations that are carried out with extensive planning and oversight to ensure the comfort and safety of donors, especially in light of the ongoing pandemic.

We are deeply grateful for your consideration to donate blood during this critical time. The drive is open to anyone who meets eligibility criteria, so if you know of others who might be interested, please share this information and encourage them to sign up.

As we carry on with our lives and our work in these uncertain times, thank you for continuing to reflect our PRIDE values in all that you do.

Sincerely,

Anya Greenberg, MS3 & Hope Schwartz, MS1, On behalf of UCSF COVID Student Aid

Clifford A. Lowell, MD-PhD, Distinguished Professor and Chair, UCSF Department of Laboratory Medicine

Joshua Adler, MD, Chief Clinical Officer, UCSF Health

Source: The authors

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FIGURE 2B

UCSF-wide Communication about Emergency Blood Drives

UCSF BLOOD DRIVE INFORMATION & FAQ

Sign me up! How do I donate? UCSF is partnering with [Vitalant](#) to hold two 3-day blood drives at UCSF's campuses:

Campus	UCSF Parnassus	UCSF Mission Bay
Dates	April 1-3	April 7-9
Times	10am-3pm	9am-2pm
Location	Millberry Union Gymnasium	Mission Bay Conference Center Fisher Banquet Room West
Appointment Sign-up	Sign Up Here (sponsor code: UCSF)	

Am I eligible to donate blood? Please see eligibility requirements from [Vitalant](#). Standard requirements have been updated to include a 28-day deferral for donors who have increased risk of COVID-19 exposure within the last four weeks.

We are under shelter-in-place orders. Is blood donation considered an essential activity? Even if you are sheltering in place, you can leave home to do "essential" things such as buy food, pick up medications — and donate blood, which falls under the category of necessary medical activities.

What happens before and during the donation visit? Please [complete the fast track health history questionnaire before arrival to \(but on the same day as\) your appointment \(sign up here, sponsor code: UCSF\)](#). Please bring a picture ID with first and last name. Plan to spend one hour total for your visit. The session begins with COVID-19 screening questions about your travel, health symptoms, and possible exposure to someone with COVID-19; health history; and a mini-physical (including temperature, blood pressure, finger stick blood check). The blood donation takes 10-15 minutes. Donors rest, hydrate, and snack for 15 minutes before leaving. Prepare by hydrating in the day to hours beforehand. Try to eat dark leafy greens, lentils, and dark meats with a side of vitamin C to replenish your iron.

What happens if my screening indicates concern about potential COVID-19? You will not be able to donate blood. You will be given a mask and asked to follow up with your health care provider for further instructions.

What steps will be taken to prevent transmission of COVID-19 to volunteer donors? Donors will come by appointment only to prevent crowding, and appointments will be limited to space out participants and reduce waiting. The blood donation will be set up to comply with social distancing guidelines, and visitors accompanying donors will not be allowed in the blood donation area. Donors will be screened for COVID-19 upon before entry. [Vitalant](#) staff follow rigorous safety and disinfection protocols.

Is there risk of transmission of COVID-19 to blood product recipients? There are no known cases of transfusion-transmission of COVID-19.

Will the donated blood be tested for COVID-19? [Vitalant](#) does not test blood for COVID-19.

What if there are no appointments available at my preferred time at the UCSF blood drive or if I want to donate before April 1st? If you would like to donate and all available appointment slots are filled, please email Anya Greenberg (anya.greenberg@ucsf.edu) and Hope Schwartz (hope.schwartz@ucsf.edu) to express your interest. This will help us track demand to inform planning for future drives at UCSF. You can also donate at a blood center in the Bay Area of your choosing ([Vitalant](#) or [American Red Cross](#)). Please use their app, their website, or call to make an appointment. The nearest blood center to UCSF's Parnassus Campus is the [Vitalant Irwin Memorial Blood Center](#) on Masonic Ave—a 10-minute drive or 30-minute walk from Parnassus.

Source: The authors

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Key points included: (1) blood donation is an *essential activity* under San Francisco's shelter-in-place regulations; (2) risk of transmission of Covid-19 through blood products is minimal⁵; and (3) appropriate measures would be taken to ensure physical distancing. Our communication strategy included campus-wide outreach to UCSF students and employees; listings on the UCSF Covid-19 webpage and UCSF calendar; an online and print newspaper story; and a social media blast from UCSF students and the UCSF Health official social media pages. All 185 appointment slots were

filled within <24 hours of beginning our outreach using Vitalant's online donor recruitment system, with additional individuals added to an alternate list.

To support blood drive operations given the adapted workflow, we recruited UCSF student volunteer coordinators, who managed drive staffing and worked with the SOM administration to approve volunteer tasks (Figure 3). We drew from a large pool of UCSF students, who currently have flexibility given suspended clinical clerkships and remote classroom activities. Although medical schools filled the volunteer roles at our drive, these roles don't require any medical knowledge and could be filled by a diverse set of individuals in drives outside of health care organizations.

FIGURE 3

UCSF-wide Communication about Emergency Blood Drives

UCSF COVID Student Aid -- Blood Drive Signup Instructions											
1. Please only volunteer if you can 100% commit to following through with the volunteer commitment. Given current circumstances, we cannot afford late cancellations											
2. Sign up for the role/time-slot you are available using the tabs below											
3. PARNASSUS dates are April 1-3 and MISSION BAY dates are April 7-9											
Role Descriptions:											
Point Person:	Will provide general oversight of the drive operations and coordinate with the Vitalant (Blood Drive Partner) for the day. Will be available to problem solve as things come up throughout the day.										
Set-Up:	Will meet with Vitalant team in the morning to help bring equipment into the donation space and set things up for the drive										
COVID-19 Screener	Will screen all donors for COVID-19 infection using UCSF screening tool and safety protocol										
Check-In	Will confirm appointments and move the donor to the donation space										
Temperature Checker	Will take donors' temperatures following safety protocol										
Canteen Manager	Will offer refreshments and monitor donors while donating (some people may need snacks should they experience a vasovagal response)										
Back-Up Donor	Individual that HAS NOT signed up to donate blood and is available to donate on short-notice, should a cancellation occur (you may sign up for this role in addition to volunteering)										
For any questions or concerns, please contact one of our volunteer coordinators.											
Volunteer Signup: UCSF Parnassus											
Location: Millberry Union Gymnasium											
Shift Name	Shift Role	Shift Time	Weds 4/1			Thurs 4/2			Fri 4/3		
Point-Person	Overnight	All day	Name	Phone #	Email	Name	Phone #	Email	Name	Phone #	Email
Set Up	Set-Up #1	8:30-10:00am									
	Set-Up #2	8:30-10:00am									
	Set-Up #3	8:30-10:00am									
Drive Operations Shift 1	COVID-19 Screener	9:30am-12:30pm									
	Check-In	9:30am-12:30pm									
	Temperature Checker	9:30am-12:30pm									
	Canteen Manager	9:30am-12:30pm									
	Back-Up Donor 1	9:30am-12:30pm									
Drive Operations Shift 2	Back-Up Donor 2	9:30am-12:30pm									
	COVID-19 Screener	12:30-3:30pm									
	Check-In	12:30-3:30pm									
	Temperature Checker	12:30-3:30pm									
	Canteen Manager	12:30-3:30pm									
Take-Down	Back-Up Donor 1	12:30-3:30pm									
	Back-Up Donor 2	12:30-3:30pm									
	Take-Down #1	3:00-5:30pm									
	Take-Down #2	3:00-5:30pm									
	Take-Down #3	3:00-5:30pm									
Volunteer Signup: UCSF Mission Bay											
Location: Mission Bay Conference Center, Fisher Banquet Room West											
Shift Name	Shift Role	Shift Time	Tues 4/7			Weds 4/8			Thurs 4/9		
Point-Person	Overnight	All day	Name	Phone #	Email	Name	Phone #	Email	Name	Phone #	Email
Set Up	Set-Up #1	7:30-9:00am									
	Set-Up #2	7:30-9:00am									
	Set-Up #3	7:30-9:00am									
Drive Operations Shift 1	COVID-19 Screener	8:30am-11:30pm									
	Check-In	8:30am-11:30pm									
	Temperature Checker	8:30am-11:30pm									
	Canteen Manager	8:30am-11:30pm									
	Back-Up Donor 1	8:30am-11:30pm									
Drive Operations Shift 2	Back-Up Donor 2	8:30am-11:30pm									
	COVID-19 Screener	11:30-2:30pm									
	Check-In	11:30-2:30pm									
	Temperature Checker	11:30-2:30pm									
	Canteen Manager	11:30-2:30pm									
Take-Down	Back-Up Donor 1	11:30-2:30pm									
	Back-Up Donor 2	11:30-2:30pm									
	Take-Down #1	2:00-4:30pm									
	Take-Down #2	2:00-4:30pm									
	Take-Down #3	2:00-4:30pm									

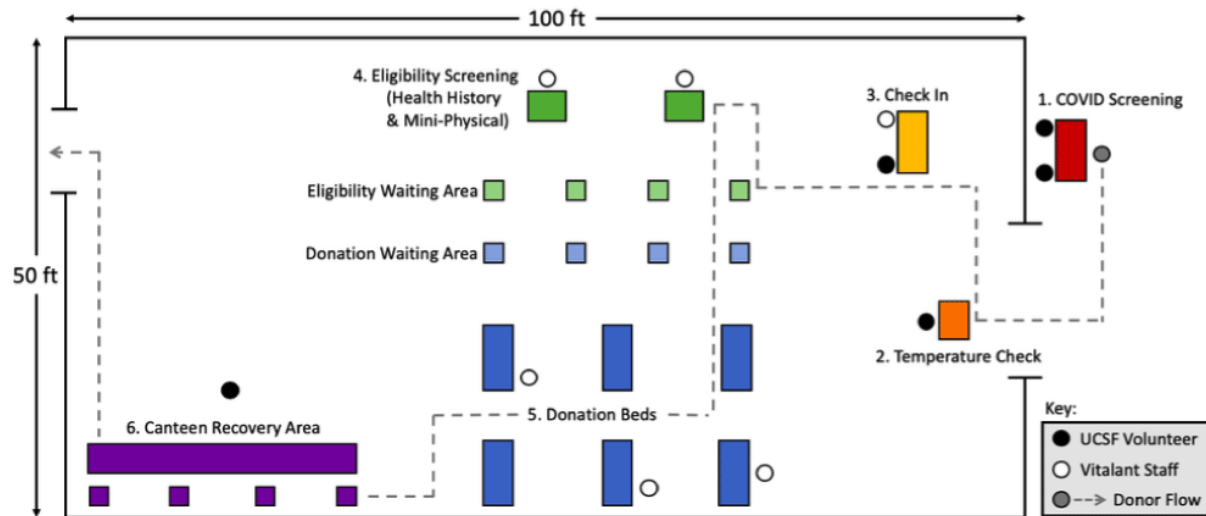
Source: The authors

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We collaborated with Vitalant staff and the UCSF Chief Medical Officer to ensure set-up and procedures were adjusted to minimize the likelihood of Covid-19 transmission according to the following protocol (Figure 4):

FIGURE 4

Parnassus Heights Location Set-Up and Donor Flow (Millberry Union Gymnasium)



Source: The authors

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Prior to entering the donation area, all staff, volunteers, and donors received UCSF’s standard Covid-19 verbal screen and a temperature check. All check-in and screening stations, waiting area chairs, blood donation tables, and canteen stations were set-up greater than 6 feet apart, and appointments were scheduled every 15 minutes to minimize crowding. We prohibited visitors who were not donating blood and required walk-in donors to leave the area and wait for a phone call rather than waiting in the donor area, as they would in a standard drive. Post-donation canteen snacks were handed out individually. When donation was complete, donors exited from a separate door to maintain forward flow through the space.

To comply with [Centers for Disease Control and Prevention \(CDC\) guidelines](#) around universal use of face coverings released on April 3, all Vitalant staff and student volunteers wore surgical masks and gloves during our second drive. Donors were asked to come with an appropriate face covering, and donors without coverings were provided surgical masks.

Given the Covid-19-related considerations, fewer appointments than typical for a blood drive were scheduled to maintain physical distancing. Thus, we recognized the necessity of filling every appointment to maximize donations with fewer opportunities. To address donor cancellations more than 24 hours before their appointment, we drew from an alternate list of UCSF students or staff who were employed at each campus. We maximized attendance by sending personalized reminder emails to scheduled donors the night before the drive (in addition to automated reminders from Vitalant’s online scheduling system).

In any blood drive, Vitalant expects some no-shows, deferrals who do not meet eligibility requirements, and screen-outs. Although we discouraged walk-ins in official communications, we were able to accept a limited number as replacements for no-shows and dropouts or when staff had extra capacity. Through this multipronged approach, the drives ran at 90% of total donation capacity and exceeded Vitalant's red blood cell unit goal for the drive series by 20%. Seventy-three percent of total donors were first-time donors, which is significantly higher than usual and indicates a large, motivated, previously untapped pool of potential blood donors.

After publicizing UCSF's blood drives, we were approached by medical students, health professionals, and employees of private organizations across the country interested in holding blood drives at their institutions. We have individually addressed as many questions as possible and hope this case study helps others looking to replicate our model.

The Hurdles

Overcoming concerns about the appropriateness of blood drives during shelter-in-place:

Established that blood drives are essential health care activities as a foundation for this effort.

Identifying spaces large enough to allow for physical distancing: Tapped UCSF Health and SOM leadership to rearrange use of space at the hospital administration level.

“

Seventy-three percent of total donors were first-time donors, which is significantly higher than usual and indicates a large, motivated, previously untapped pool of potential blood donors.”

Setting up events to prevent transmission of Covid-19: Implemented universal Covid-19 screening prior to entry. Did not advertise walk-in availability to prevent crowding. Prohibited non-donor visitors. Followed CDC guidelines for personal protective equipment use. Ensured greater than 6 feet physical distance between all stations.

Addressing donor concerns about the safety of donating blood during the Covid-19 pandemic: Shared up-to-date evidence affirming that the virus is not a blood-borne pathogen.⁶ Clearly communicated steps being taken to prevent transmission.

Ensuring personal protective equipment (PPE) availability in accordance with CDC guidelines: Required Vitalant to provide PPE for their staff to meet the CDC guidelines. Worked with Covid-19 Command Center to procure masks from the UCSF supply for student volunteers and any donors who required a mask.

Operationalizing the blood drive quickly in light of the impending blood shortage: Cleared a wide range of administrative hurdles efficiently through an agile core group aligned with advisory multidisciplinary stakeholders. While typical blood drives take 8–12 weeks to plan, our planning phase spanned 2 weeks, from March 18 to March 31.

Adapting to emerging needs during the drive: Ensured that the evolving UCSF Covid-19 screening tool was current. Adapted to new CDC PPE guidelines by requiring masks for all Vitalant staff, providing masks to student volunteers, and sending email reminders about face coverings to donors after the new CDC guidance was released.

Metrics

Our five primary metrics assessed:

1. Compressed start-to-execute time to meet urgent need. Achieved: 2 weeks rather than typical 8–12 weeks.
2. Effective publicity of drives. Achieved: Publicity sufficient to address Covid-19–related concerns and ensure turnout sufficient to meet collection goals, with 100% of appointment slots filled prior to start of drives.
3. Efficient resource utilization. Achieved: 90% of blood drive capacity was used, which resulted in exceeding Vitalant’s collection goal by 20%.
4. Inspire new donors. Achieved: First-time donors reached 73% of total, well above typical range at Vitalant’s drives.
5. Meet or exceed Vitalant’s goal for red blood cell units collected. Achieved: Collected 155 units, which is 120% of the 129-unit goal. (Table 1).

Where to Start

- Identify motivated project managers and senior sponsors within the health system.
- Engage senior leadership and establish multidisciplinary working group for rapid approval process.
- Approach blood provider partner in local community with track record of coming on-site for blood drives.
- Establish protocols for preventing Covid-19 transmission in conjunction with blood provider and hospital leadership.
- Work with SOM leadership to approve student involvement in managing the project, volunteering for drives, and serving as donors.
- Identify point-person on each team for logistical coordination (e.g., facilities, parking, UCPD, printing, communications, student volunteer coordinators, etc.).
- Share learnings with other groups interested in holding blood drives under this adjusted model.

Table 1. Key Metrics from Two 3-Day Blood Drives at UCSF

		Parnassus	Mission Bay	Total
General				
a.	Dates of Drive	April 1–3, 2020	April 7–9, 2020	--
b.	Days to Plan	14	20	--
Appointments as of 24 Hours Prior to Drive				
c.	# Available Appointments	83	102	185
d.	% of Appointments Filled Prior to Drive	100%	100%	100%
Select Donation Statistics During Drive				
e.	No-Shows	6	19	25
f.	Deferrals	2	9	11
g.	Individuals with Insufficient Blood Drawn	15	15	30
h.	Total	23	43	66
i.	Walk-ins Accommodated (includes planned volunteer back-up donors)	21	26	47
j.	Total Donations (c-h+i)	81	85	166
k.	% of Available Capacity Used (j/c)	98%	83%	90%
l.	First-Time Donors	55	67	122
m.	% First-Time Donors (l/j)	68%	79%	73%
n.	Red Blood Cell Units – Collected	78	77	155
o.	Red Blood Cell Units – Vitalant Goal	57	72	129
p.	% of Vitalant Goal (n/o)	137%	107%	120%
Cost to UCSF				
q.	Facility	\$0*	\$0*	--
r.	Staff	\$0**	\$0**	--
s.	Other (supplies, signs)	Minimal	Minimal	--
* Spaces were donated for the drives				
** Staffed with UCSF student volunteers				

Source: The authors

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