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The Experiences of Sexual and Gender Minority Participants With a Remote Biospecimen Collection Protocol

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### Authors

Panyanouvong, Nicholas

Lella, Paavani

Sunder, Gowri

et al.

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## **The experiences of sexual and gender minority participants with a remote biospecimen collection protocol**

**Author list:** Nicholas Panyanouvong<sup>1,2,3</sup>, Paavani Lella<sup>1,4,5</sup>, Gowri Sunder, MDes<sup>1,6</sup> Micah E. Lubensky, PhD<sup>1,6</sup>, Zubin Dastur, MS, MPH<sup>1,7</sup>, Bradley E. Aouizerat, PhD<sup>8,9</sup>, Nadra Lisha, PhD<sup>10</sup>, Torsten B. Neilands, PhD<sup>11</sup>, Elena Flowers, PhD<sup>12</sup>, Mitchell R. Lunn, MD, MAS<sup>1,2,13</sup>, Juno Obedin-Maliver, MD, MPH, MAS<sup>1,2,7</sup>, Annesa Flentje, PhD<sup>1,6,14</sup>

### **Corresponding Author:**

Annesa Flentje, PhD. [Annesa.Flentje@ucsf.edu](mailto:Annesa.Flentje@ucsf.edu). 415-502-0697.

Community Health Systems, School of Nursing, University of California, San Francisco, 2 Koret Way, N505, San Francisco, CA 94143, USA

<sup>1</sup>The PRIDE Study/PRIDENet, Stanford University School of Medicine, Stanford, California, United States

<sup>2</sup>Department of Epidemiology and Population Health, Stanford University School of Medicine, Stanford, California, United States

<sup>3</sup>Department of Biology, Stanford University School of Humanities and Sciences, Stanford, CA

<sup>4</sup>Department of Biology, University of San Francisco College of Arts and Sciences, San Francisco, California, United States

<sup>5</sup>Department of Theology and Religious Studies, University of San Francisco College of Arts and Sciences, San Francisco, California, United States

<sup>6</sup>Community Health Systems, School of Nursing, University of California, San Francisco, San Francisco, California, United States

<sup>7</sup>Department of Obstetrics and Gynecology, Stanford University School of Medicine, Stanford, California, United States

<sup>8</sup>College of Dentistry, Translational Research Center, New York University, New York, New York, United States

<sup>9</sup>Rory Meyers College of Nursing, New York University, New York, New York, United States

<sup>10</sup>Center for Tobacco Control and Research and Education, University of California, San Francisco, San Francisco, California, United States

<sup>11</sup>Division of Prevention Science, Department of Medicine, University of California, San Francisco, San Francisco, California, United States

<sup>12</sup>Department of Physiological Nursing, University of California, School of Nursing, University of California, San Francisco, San Francisco, California, United States

<sup>13</sup>Division of Nephrology, Department of Medicine, Stanford University School of Medicine, Stanford, California, United States

<sup>14</sup>Alliance Health Project, Department of Psychiatry and Behavioral Sciences, School of Medicine, University of California, San Francisco, San Francisco, California, United States

**Keywords:** polysubstance use, alcohol use, tobacco use, gender, population health

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### **Author Contributions**

Nicholas Panyanouvong: Formal analysis, writing - original draft, writing - review and editing.

Paavani Lella: Formal analysis, writing - original draft, writing - review and editing.

Gowri Sunder: Formal analysis, data curation, project administration, writing- original draft, writing - review and editing, visualization.

Micah Lubensky: Methodology, resources, writing - review and editing, project administration.

Zubin Dastur: Resources, project administration, writing - review and editing.

Bradley E. Aouizerat: Conceptualization, writing - review and editing.

Nadra Lisha: Formal analysis, data curation, writing - original draft, writing - review and editing.

Torsten B. Neilands: Methodology, formal analysis, writing - review and editing.

Elena Flowers: Development of biospecimen protocol

Mitchell R. Lunn: Conceptualization, investigation, resources, writing – review and editing, funding acquisition

Juno Obedin-Maliver: Conceptualization, investigation, resources, writing – review and editing, funding acquisition

Annesa Flentje: Conceptualization, methodology, investigation, resources, writing-review and editing, supervision, project administration, funding acquisition.

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## **Abstract**

Sexual and gender minority (SGM) communities are underrepresented in biomedical studies, highlighting the importance of developing biospecimen collection protocols aimed at engaging SGM participants. We aimed to learn more about SGM participants' experiences with a remote (*i.e.*, not performed at a central location) biospecimen collection study pioneered by The PRIDE Study, a cohort study of SGM adults residing in the United States and its territories. Feedback was collected from 112 SGM participants following blood donation for a parent study investigating the relationship between minority stress, substance use, and epigenetic markers of substance use and minority stress. We used an inductive and collaborative approach to qualitative analysis and identified major themes and areas for protocol improvement. Major themes among participant feedback were: (1) communication with the research team, (2) convenience of donation, (3) interactions with clinical laboratory staff, and (4) anonymity and privacy. Most participants indicated that they experienced little to no problems during the donation process and expressed approval for the clarity and transparency of the informed consent process, ease of communication with the research team, and measures taken to protect participant confidentiality during their appointment. The most common challenges encountered by participants related to the inconvenience of handling and transporting study materials to the clinical laboratory site and clinical laboratory staff's unfamiliarity with the study protocol. Some participants indicated a preference for more elements of the study protocol (*e.g.*, transporting collection materials) to be left to the responsibility of the research team. Future studies should

carefully consider the delegation of responsibility between participants and the research team to balance both study reach and participant accessibility. Alternative formats, such as at-home collection or collaboration with community health workers, may further enhance participant satisfaction and convenience.

**Keywords:** LGBTQ+, biospecimens, biospecimen collection, research protocols

**Statement of Public Health Significance:** Sexual and/or gender minority (SGM) people are underrepresented in biospecimen research. While remote biospecimen collection promises to improve convenience and accessibility of study participation, little research has been done to characterize the factors that facilitate or inhibit SGM participant engagement with these protocols.

## **Introduction**

The practice of collecting, storing, and processing biospecimens for use in research has enabled scientists to generate unprecedented quantities of biological data from diverse populations, revolutionizing research in genomics, bioinformatics, and numerous other fields of medicine.<sup>1-3</sup> Biospecimen analysis may offer new insights into disease and underlying mechanisms, especially among those historically underrepresented in health sciences research, such as sexual and gender minority (SGM) communities.<sup>4</sup> Improving minority representation in biomedical research is crucial in light of recent studies highlighting the heterogeneity of disease patterns and treatment efficacy between groups on the basis of race, ethnicity, sex, gender, and other demographic variables.<sup>5</sup>

SGM people have historically contended with a number of well-documented health disparities. Social stigma, medical mistrust, and minority stress<sup>6</sup> have exposed SGM individuals to disproportionate levels of mistreatment and discrimination, which has given rise to poor physiological and mental health outcomes.<sup>7</sup> SGM people experience delays in cancer screening and diagnosis<sup>8,9</sup>, elevated rates of sexually transmitted infections (STIs)<sup>10</sup>, and may be at a greater risk of cardiovascular disease<sup>11</sup>. Improving enrollment and retention of SGM people in studies that collect biospecimens may help to reduce health disparities and enable research to improve SGM patient care.

Unfortunately, large research studies have just begun to capture sexual orientation and gender identity information, which limits available resources to study existing biospecimens in SGM populations. For example, of 153 studies investigating the effects of gender-affirming

treatment among transgender and gender-diverse (TGD) individuals, only one incorporated biospecimen data<sup>12</sup>. This study also found that SGM status was generally not recorded during biospecimen collection. For example, one of the biospecimen search engines reviewed in the study included only “Male” and “Female” as possible queries, failing to differentiate sex from gender and omitting more expanded gender options (*e.g.*, transgender man, woman, non-binary)<sup>13</sup>. This illustrates that problems in infrastructure may propagate SGM invisibility and underrepresentation in biospecimen studies. There is almost no literature documenting best practices and recruitment strategies for biospecimen studies among SGM populations; existing studies are largely limited to predominantly cisgender sexual minority men and are primarily concerned with perceptions and attitudes prior to donation<sup>14,15</sup>. Members of other SGM subgroups, particularly transgender and gender-expansive people, may encounter additional barriers to participation in biospecimen research, especially those taking place in centralized academic research sites.

The purpose of this study is to examine biospecimen collection procedures as experienced by the participants of The Population Research in Identity and Disparities for Equality (PRIDE) Study, a US national longitudinal cohort study of the health of SGM people. Given the national reach of The PRIDE Study, we provided participants with the necessary biospecimen collection materials and facilitated peripheral venous blood collection at a clinical laboratory near the participants’ residences. In this paper, we briefly outline the biospecimen collection protocol and examine the participants’ experiences through qualitative analysis of participant responses to post-study surveys. We provide recommendations for future biospecimen collection research with SGM participant populations.



## **Methods**

### **Study Participants**

Participants invited to submit biospecimens were randomly selected from participants currently enrolled in The PRIDE Study. Sampling criteria were defined by a linked study (R01DA052016) examining DNA methylation markers associated with substance use and minority stress at the intersection of sex and gender, which uses The PRIDE Study as its sampling base. The PRIDE Study is based at Stanford University with a site at The University of California, San Francisco (UCSF).<sup>16</sup> In order to be eligible for The PRIDE Study at the time of data collection, participants needed to meet the following criteria: 1) identify as LGBTQ+ or as SGM, 2) be able to read in English and provide consent, 3) live within the United States or one of its territories, and 4) be 18 years or older. To be selected for biospecimen collection, participants had to be under the age of 65, report a prior history of substance use (*e.g.*, substance use including heavy episodic alcohol use), and provide a zip code located within 20 miles of a partner clinical laboratory facility.

### **Biospecimen Donation**

Eligible prospective participants for this sub-study received an email or text message notification inviting them to participate in the study. Interested participants were prompted to review a series of six video tutorials (with written transcripts available) providing information about the study, informed consent process, and biospecimen collection, followed by brief questions to assess their understanding. Following completion, participants were given the option to either opt out without consenting, or to consent to provide biospecimens for the sub-study. Those who consented could also provide further consent for any number of the following: 1) to

allow those biospecimens to be used in future studies within The PRIDE Study, and 2) to share their epigenetic data with a National Institute of Health (NIH) Data Repository.

Consented participants were sent an 11 x 9.5 x 10.62'' styrofoam box containing shipping materials, including ice packs, an absorbent sleeve, an insulator box, two potassium ethylenediaminetetraacetic acid (K<sub>2</sub>EDTA) blood collection tubes, and a biohazard bag. Participants were also provided with instructions for their appointment, including a request to freeze the provided ice packs 24 hours before their visit and to bring all materials to their appointment (full instructions available under **Supplementary Figure 1**). Participants were prompted to contact study coordinators to schedule a blood specimen collection appointment with their local clinical laboratory. Because the specimen would be shipped overnight, participants could select any time prior to 1:00 PM local time Monday through Thursday, if their appointment day was not prior to a federal holiday.

Numerous safeguards were taken to protect participant privacy. All participant names and dates of birth were de-identified to clinical laboratory staff, with each participant assigned a registration number. Laboratory-facing study materials did not contain the name of The PRIDE Study. All participant identifiers (*e.g.*, name, date of birth) were removed from all materials. Study instructions included a reminder that participants were under no obligation to answer questions related to personal health information or the purpose of the research study during their appointment (**Supplementary Figure 2**). Upon arrival at their appointment, participants provided biospecimen collection materials, specific collection and packing instructions, and a pre-paid shipping label to laboratory staff. After performing blood specimen collection, staff

were instructed to call Federal Express for same-day pickup and overnight shipping back to The PRIDE Study.

### **Participant Experiences with Biospecimen Collection**

Following their appointment, participants were emailed a link to a feedback survey inviting them to share their thoughts on the biospecimen donation process. The survey asked participants to rate the ease and clarity of the consent process, ease of receiving and handling study materials, ease of the blood draw, degree of respect offered by clinical laboratory staff, and likelihood of recommending the study to others. Responses were scored on a 4-point scale ranging from “Strongly Disagree” to “Strongly Agree”. The feedback survey also invited participants to further share their thoughts and concerns with open-ended questions about difficulties or concerns during the study and any additional feedback. Following completion of this survey, participants were compensated for their biospecimen donation and feedback with a \$50 electronic gift card.

### **Data Analysis**

After specimens were collected from the first 112 participants, an analysis of participant feedback was conducted in order to evaluate the performance of the current workflow and inform changes to study protocol moving forward. The experience ratings were tabulated and reported as both raw counts and percentages. Open-ended data were qualitatively analyzed by a team of 2 researchers consistent with thematic analysis<sup>17</sup> using the qualitative analysis software Dedoose<sup>18</sup>. We identified prominent ‘codes’ (*i.e.*, themes and patterns) in the data. Invoking an iterative and collaborative approach, after each researcher independently analyzed and coded the data,

discrepancies were identified and resolved through group discussion. This process was repeated until a consensus was reached regarding coding structure and the coding of each excerpt.

## Results

### Demographics

One hundred and twelve participants were included in this report. Demographic information - age, race, ethnicity, sexual orientation, gender identity, geographic region, and personal history of substance use - was collected in The PRIDE Study Annual Questionnaire (**Table 1**). Participants ranged from 21 to 61 years of age (mean = 37.51, *SD* = 10.25). Among them, 87.5% reported White race alone or in combination with another race or ethnicity category, and 25.9% of participants reported more than one race or ethnicity. Over half of participants were classified as gender minority based on responses to questions about gender identity and sex assigned at birth (as in Flentje et al. 2020)<sup>19</sup>, with 12 identifying as transgender men, 6 as transgender women, and 55 as gender-expansive people (*i.e.*, identifying outside of the gender binary). Most participants were college-educated with 28.6% completing four years of college and 45.5% having completed a graduate degree.

**Table 1:** Participant Demographics (*N* = 112)

<b>Individual Level Variables</b>	
<b>Age (Mean, SD)</b>	37.5, 10.25
<b>Race and ethnicity (n (%))<sup>a</sup></b>	
American Indian / Alaska Native	2 (1.8%)
Asian	2 (1.8%)
Black, African American, or African	11 (9.8%)
Hispanic, Latino, or Spanish	25 (22.3%)

Middle Eastern or North African	4 (3.6%)
Native Hawaiian / Pacific Islander	1 (0.9%)
White	98 (87.5%)
Another race or ethnicity not listed	4 (3.6%)
Endorsed more than one race or ethnicity	29 (25.9%)
<b>Gender Identity (n, %)</b>	
Cisgender Man	22 (19.6%)
Cisgender Woman	17 (15.2%)
Gender-Expansive (SAAB <sup>b</sup> Male)	17 (15.2%)
Gender-Expansive (SAAB Female)	38 (33.9%)
Transgender Man	12 (10.7%)
Transgender Woman	6 (5.4%)
<b>Sexual Orientation (n, %)<sup>a</sup></b>	
Asexual	13 (11.6%)
Bisexual	33 (29.5%)
Gay	32 (28.6%)
Lesbian	23 (20.5%)
Pansexual	21 (18.8%)
Queer	66 (58.9%)
Questioning	2 (1.8%)
Same-gender loving	4 (3.6%)

	Straight / heterosexual	1 (0.9%)
	Another sexual orientation	9 (8.0%)
<b>Household Income (n, %)</b>		
	≤ \$20,000	38 (33.9%)
	\$20,001 - \$40,000	24 (21.4%)
	\$40,001 - \$60,000	16 (14.3%)
	> \$60,000	32 (28.6%)
	Not reported	2 (1.8%)
<b>Geographic Region (n, %)</b>		
	Northeast	31 (27.7%)
	Midwest	16 (14.3%)
	South	28 (25%)
	West	28 (25%)
	Not reported	9 (8.0%)
<b>Education Level Completed (n, %)</b>		
	High school diploma / General Education Development (GED)	21 (18.8%)
	Some college	8 (7.1%)
	College degree	32 (28.6%)
	Graduate degree	51 (45.5%)
<p><sup>a</sup>Participants could endorse multiple categories, thus these demographic categories may sum to &gt;100%.</p> <p><sup>b</sup>SAAB refers to sex assigned at birth.</p>		

## Ratings of Biospecimen Process Experiences

Participant responses to the five items querying experiences with the biospecimen process are shown in **Table 2**. Most participants indicated little to no difficulty navigating the study onboarding process ( $n = 104$ ; 92.9%) or obtaining study materials ( $n = 102$ ; 91.1%). Similarly, few participants reported difficulties at the site of biospecimen donation with only 13 (11.6%) expressing that it was difficult to get their blood drawn and 6 (5.4%) indicating that they felt disrespected by clinic staff.

**Table 2:** Participant Responses to Likert-scale Feedback Items ( $n = 112$ )

Question	Participant Rating			
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
"I found the consent process easy to understand."	104 (92.9%)	6 (5.4%)	1 (0.9%)	1 (0.9%)
"It was easy to receive the materials for the study in the mail."	102 (91.1%)	6 (5.4%)	4 (3.6%)	0
"It was easy to get my blood drawn at [Clinical laboratory]."	59 (52.7%)	40 (35.7%)	9 (8.0%)	4 (3.6%)
"The technicians at [Clinical laboratory] treated me with respect."	99 (88.4%)	7 (6.2%)	4 (3.6%)	2 (1.8%)
"I would recommend this study to other people."	86 (76.8%)	23 (20.5%)	2 (1.8%)	1 (0.9%)

## **Qualitative Analysis**

Ninety-one participants provided written responses to the open-ended questions. Of those participants, 24 indicated that they experienced no problems without providing more specific feedback. Among the 67 remaining responses, we identified four key themes: (1) communication with study coordinators, (2) convenience, (3) interactions with laboratory staff, and (4) anonymity and privacy.

### **Communication with Study Coordinators**

Many participants indicated that they appreciated receiving one-on-one phone calls and email correspondence from study coordinators prior to their appointment. Participants felt that this ongoing communication helped resolve confusion related to logistical concerns such as appointment scheduling or the at-home preparation of biospecimen collection materials. One participant stated: "I seem to require a lot of hand holding when there's a lot of paperwork involved, so it was great that I got a call from one of the coordinators to walk me through what I needed to do."

Participants expressed varying sentiments about the onboarding and consent process. Some participants indicated that the transparency and thoroughness of the educational consent videos greatly increased their comfort in donating; as one participant remarked, "The transparency around consent made me feel comfortable in being a participant in a study rather than just a number in a collection." However, other participants, especially those who had prior exposure to biomedical research or had previously



donated biospecimens, found the consent process to be tedious; one participant commented, “I did not find the video process to be needed. I have a higher amount of education and a history of conducting research, so I found the consent process to be somewhat repetitive, elementary, and annoying. I wish there had been an option to read the consent form and then be quizzed on it to ensure my understanding of it.”

### **Convenience**

Many participants provided feedback concerning the perceived ease and convenience of donating their biospecimens. One commonly cited challenge was the packaging and transportation of study materials to the biospecimen collection site. One participant commented that “the box is too big”, and another asserted that “I shouldn’t have to deal with phlebotomy materials being sent to me”, proposing instead that the materials be sent directly to the laboratory where the blood draw is performed. Another participant suggested that future studies should implement “rideshare options for patients/test subjects” (e.g., Uber or Lyft) to ameliorate these concerns.

Participants reported difficulties shipping their collected biospecimens back to study coordinators. While some participants merely expressed uncertainty if the biospecimens had been shipped on time (“There was concern that my blood specimens were not delivered back to your lab by FedEx in time.”), others said that they had been wrongfully left in charge of packaging and shipping the materials, despite the fact that this was the

responsibility of clinical laboratory staff: “I was told by [clinical laboratory] staff that I had to ship the specimen.”

Participants also considered the biospecimen collection site location with respect to physical distance from their residence and their personal comfort and familiarity with the site. Some participants struggled to identify sites that were within a reasonable traveling distance; one participant lamented “There was no [clinical laboratory] that was convenient for me to get to. I was able to get to a [clinical laboratory], but it took a couple hours out of my day for the whole visit”. Another stated that “the nearest [clinical laboratory] to my house was 35 minutes away”. Participants generally preferred to donate biospecimens at sites they were familiar with: “My [clinical laboratory] location (which is already familiar with me from my general wellness blood work) was pretty easy to deal with as well.” Participants who were not familiar with the site occasionally had trouble navigating to their appointment, with one participant describing, “The [clinical laboratory] was VERY hard to find ... I drove around a lot looking for [it].”

Participants often experienced difficulty finding a suitable time slot for biospecimen donation, particularly because appointments were only available before 1:00 PM to facilitate same-day shipping: “The limited hours at [clinical laboratory] made this process a little harder.” These challenges were compounded by the fact that all scheduling was handled by study coordinators, rather than through the participant directly. As one person

explained, “Lab appointments had to be made in advance, by the study, no walk-in even though I had all the materials, and the lab is down the block. Also, only AM appointments. I’m on a night schedule so it was like waking up at what would be like 4 a.m. for a 9-5 person, to get to the lab. I missed two appointments in a row.” However, many participants reported finding it easy to reschedule appointments through the study coordinator: “I had to reschedule my appointment and it was easy to do, and I felt very supported.”

### **Interactions with Laboratory Staff**

Most participants reported relatively quick and seamless experiences at the clinical laboratories with some praising the kindness and professional conduct of clinic staff: “The technician was very friendly, respectful, and kind throughout the study. Similarly, the supervisor was also helpful and kind.” However, other participants expressed concerns regarding the preparedness of clinic staff. Notably, many participants felt that laboratory staff were unfamiliar with the study protocol, which often resulted in them soliciting assistance from participants (“[Clinical laboratory] was a little unprepared and [I] had to help the technician a bit, but together we made it happen”) or asking questions that participants felt uncomfortable or unqualified answering (“The [clinical laboratory] employee had no idea how the study worked and repeatedly asked me questions I could not answer. There must be a better way to communicate with the lab ...”) In other cases, participants experienced significant delays during their visit with some having to wait several hours after their initial time slot to get their blood drawn.

Furthermore, a small number of participants indicated that they experienced rude or condescending treatment. One participant detailed, “I was turned away from the [clinical laboratory] appointment. The person working there was somewhat rude and told me I didn’t schedule my appointment at the right time because they were closing.” Several participants noted that they were misgendered during their visit. For example, one participant recounted, “[Clinical laboratory] employees stopped me the moment I came in with my box, in a full waiting room, to misgender me repeatedly and ask my name. ‘Ma’am, what’s this? What’s she got? What’s your name?’”

### **Anonymity and Privacy**

Personal privacy and data security were key considerations. Participants generally approved of the fact that they were de-identified during their appointments (“I appreciate how easy it was to go through the blood draw appointment, and how I was de-identified the entire time.”), but some noted that the anonymity of the process generated further confusion during check-in: “[Clinical laboratory] process was confusing and weird due to the appointment being in the name of the lab.” Notably, clinical laboratory protocol required that all study participants show their ID at an automated check-in kiosk, which was incongruent with the study instructions initially provided to participants. As one person described, “I did have to use my ID to check in,

which I didn't mind doing at all, but I did want to let you all know, since the information said we shouldn't need to provide our names." Since May 2023, participants have been instructed to circumvent this process by either pressing 'Next' on the kiosk or requesting assistance from an employee to bypass the identification step.

Despite the stringent privacy measures employed by study coordinators, some participants encountered lab technicians who, due to unfamiliarity with the study protocol, asked unwanted questions. In some cases, these exchanges took place in public settings like the clinic lobby or waiting room, further exacerbating the issue. As one participant stated, "I would have appreciated a little more privacy at [clinical laboratory]. The technician loudly asked the room if someone signed in as a 'study participant' and then kept asking questions about why I was registered as a study participant and what needs to be done in front of everyone in the waiting room. I had to ask the tech to let me in the back so I could have some privacy. It resulted in everyone in the waiting room knowing I was there for a study. This was anxiety provoking and if I had known anyone in the waiting room it would have felt very awkward."

## **Discussion**

Our biospecimen collection protocol was largely successful with most participants reporting little to no problems during the donation process. Participants largely approved of the correspondence they received from the

research team about the informed consent process and the ease with which they were able to contact study coordinators to clarify instructions or reschedule appointments. This extensive communication improved some participants' comfort and willingness to donate biospecimens. Participants expressed approval for the measures taken to ensure participant de-identification and encountered few problems in their interactions with clinical laboratory staff.

A relevant theme among participant feedback was that participants encountered clinical laboratory staff who exhibited varying degrees of familiarity with biospecimen collection procedures. While this lack of preparedness often presented an inconvenience for participants, it occasionally manifested itself as a deviation from study protocol (e.g., failure to ship the biospecimen to the research team in a timely manner). This is consistent with prior research demonstrating lower rates of adherence to study protocol using mail-based biospecimen collection, as opposed to a traditional in-clinic approach<sup>20</sup>, and points to the need for more streamlined, comprehensive lines of communication between researchers, clinic staff, and study participants in the future.

Participants sometimes fielded questions about the purpose of the research study during their appointment. Participants felt uncomfortable disclosing this information, especially in public settings where other people might respond negatively (e.g., waiting room). This is consistent with prior literature documenting patient expectations of disapproval and

stigmatization upon disclosure of SGM identity in healthcare settings and demonstrates that additional measures beyond mere de-identification, such as cultural competency training or the utilization of trusted community health workers, may better maintain participant comfort and confidentiality in future studies.<sup>21</sup> Furthermore, the de-identification of participants presented an unexpected challenge for some participants, who expressed that the anonymity of the process generated confusion when trying to check in to their appointment .

Unsurprisingly, the inconvenience of biospecimen donation represented another key area for improvement. Participants commonly expressed that they would have preferred a wider selection of appointment slots and clinic locations to choose from, echoing prior research that identified time constraints as a barrier to biospecimen donation.<sup>22</sup> Furthermore, some participants expressed concern over the burden of transporting phlebotomy materials from their place of residence to the site of biospecimen donation. Others asserted their belief that handling of study materials and logistics should be a responsibility left solely to the research team and clinic staff. While not possible in this study due to clinical laboratory protocols, workflows that delegate the responsibility for study materials to study staff and biospecimen collection sites may improve participant experience.

With remote biospecimen collection emerging as a powerful tool for capturing geographically diverse biological data, our study highlights key

factors and challenges that researchers should consider when employing these methods among stigmatized and underrepresented populations. Here, study efforts to protect participant identities were perceived favorably by participants. To ameliorate fears surrounding disclosure of SGM identity (and, in the case of transgender and gender-diverse participants, discomfort related to misgendering), future studies may consider partnering with established SGM community centers and clinics or enable participants to donate via their established healthcare provider. Prior research among Latinx communities suggests that familiarity with a clinical setting improves willingness to donate.<sup>23</sup> Researchers may also consider implementing an at-home collection protocol to maximize participant convenience and accessibility; in recent years, numerous studies have pivoted to an at-home self-collection protocol for the collection of less invasive biospecimens, including hair, saliva<sup>23</sup>, urine, and stool<sup>24</sup>. Finally, when possible, researchers should strive to minimize participants' responsibilities and implement measures like increased compensation or subsidized transportation to mitigate logistical barriers to study participation.

This study had several limitations. While diverse in geographic location and SGM identity, participants who provided biospecimens were predominantly White and well-educated. As a result, many participants may have previously donated biospecimens or had prior exposure to biomedical research. Future studies should give special consideration to the experiences of racial minority participants (particularly in the context of the historical



exploitation of these groups by the scientific community) and participants who report no prior exposure to the biospecimen collection process. Finally, many of the participants enrolled in this study declined to provide write-in feedback beyond the brief survey items, so the feedback analyzed here may not accurately reflect the experiences of all participants in this protocol.

The study discussed in this descriptive report represents one of the first successful large-scale attempts to conduct remote biospecimen collection among an SGM research population, demonstrating that biospecimen collection is a feasible and welcome practice to SGM participants. While a remote approach was crucial to maximize study reach and accessibility, our analysis of participant feedback highlights the logistical and participant experience challenges that may be encountered when performing decentralized biospecimen collection among minoritized communities. Among the few participants who encountered challenges in donating biospecimens, several areas of potential improvement, including clinical laboratory preparedness and more convenient modes of donation, were identified.


## Supplementary Figures

Figure 1a: Participant instructions for biospecimen protocol

### Now that you've received your collection kit:

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- 1** Find the appointment confirmation email. If you do not have an appointment, please complete the scheduling form or contact us.
  
- 2** Freeze the ice packs before your appointment. You do not need to fast to give blood in this study.



**Freeze both ice packs overnight and bring them to your appointment!**

- 3** Bring the entire collection kit box and the confirmation code to the appointment at [REDACTED].
  
- 4** Arrive 10 minutes early if possible to your appointment. Shipping and the blood draw are at no cost to you.

**Figure 1b: Checklist for biospecimen collection kit**

## Collection Kit Contents



- Outer cardboard box
- Styrofoam insulator box
- Biohazard plastic bag
- Absorbent tube sleeve and bubble wrap
- Two tubes for blood draw
- 2 ice packs
- Folder (labeled "For [REDACTED]") with paperwork, tape, and prepaid shipping labels

*\*\*Find the [REDACTED] check-in QR code attached to the appointment confirmation email*

**PLEASE BRING EVERYTHING LISTED TO  
YOUR APPOINTMENT**

**Figure 2a: Participant FAQ sheet**

<b>FAQs - How to participate in this study</b>	
<b>Q</b>	<b>A</b>
<b>Do I have to pay for this study?</b>	No, you do not.
<b>What do I do if I need to reschedule or miss the appointment?</b>	Please call or email us to reschedule.
<b>Why do I need to freeze the ice packs?</b>	The blood samples need to stay cold when they are shipped back to our lab at Stanford University for us to be able to study them.
<b>When do I get paid for participating?</b>	After you give blood, we will send you a feedback survey. When you finish that, we send you an electronic gift card.
<b>Can I throw anything in this kit out?</b>	Please do not throw away anything in this kit, including the box. It is all necessary to bring to your appointment.
<b>What do I bring to the appointment?</b>	Bring the entire kit and the confirmation QR code or letter code to your appointment. (You can find this in the confirmation email.)
<b>I want to withdraw from this study?</b>	If you want to withdraw or quit this study, please contact us.

**Figure 2b: Participant FAQ sheet, cont.**

## FAQ's - Difficulty at a [REDACTED] appointment

### Biological Foundations of Stress Study

**Q**

The employees at [REDACTED] are confused about what they need to do. What do I do?

Someone asked me what this study is about. What should I say?

The employees at [REDACTED] refused to use my pronouns or were otherwise disrespectful.

**A**

Please point them to the numbers at the bottom of the flyer with the green heading "[REDACTED] lab directive" in the manila envelope. They should also be able to ask their supervisor.

You do not need to tell anyone at [REDACTED] what this study is about. You can just tell them this is a study about stress and health if you prefer to respond.

To make sure people across the country can be included in this research, we contract out these appointments to [REDACTED] patient centers.

Unfortunately, that means we cannot guarantee that they will be trained to work with LGBTQIA+ participants. We hope they treat you with respect, but as a study whose mission is to improve healthcare for our communities, we have to anticipate this may not always be the case.

**We want to know if you have a bad experience at [REDACTED], please contact us. We will take steps to address it.**

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