Assessing and Responding to Patients in the COVID-19 Era: A Student-Run Free Clinic's Use of Telehealth

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Background: In March 2020, the University of California, San Diego Student-Run Free Clinic Project (SRFCP) transitioned to telehealth in response to the COVID-19 pandemic and Governor Gavin Newsom's stay-at-home executive order. SRFCP patients, many of whom suffer from chronic diseases and lack health insurance, require health care maintenance, food, and emotional support. Telehealth allowed SRFCP to implement pandemic-specific needs assessment.
Methods: Data was pulled from patient charts regarding age, sex, date of visit, and mode of communication between March 16 and June 30, 2020. Responses to a COVID-19 specific needs assessment were analyzed with regard to being at high risk for COVID-19, food security, and emotional well-being. The number of psychiatry referrals and number of food deliveries during this period were also gathered from weekly schedules and from Epic.
Results: A total of 585 telehealth primary care visits occurred in our specified time frame, of which approximately 34% were conducted by video. Across all four clinic locations, 314 unique patients were seen by medical teams. Three-fourths of patients were female, and 85% were considered high-risk. Patients across all age groups were determined to be at high risk for COVID-19. Additionally, 25% of respondents expressed concerns about their emotional well-being, and 25% indicated current or imminent lack of food at the time of their visit. A total of 533 food prescriptions were delivered to patients, and 21 referrals were made to the psychology and psychiatry specialty care clinics.
Conclusion: The SRFCP successfully implemented telehealth visits and established and enhanced programs to better support patients during the COVID-19 pandemic. This was made possible by incredible collaboration between medical students, volunteers, staff, physicians, and community organizations.

The University of California, San Diego Student-Run Free Clinic Project (SRFCP) was established in 1997 and continues to uphold its mission of providing "high-quality health care for the underserved while inspiring the next generation of health professionals." The SRFCP is managed by first- and second-year medical students in collaboration with physicians, volunteers, and staff at each of the four clinic sites across San Diego. The SRFCP provides free-of-charge medical, nutritional, dental, and social service visits, along with medications and vaccinations. It provides primary and specialty care—ranging from cardiology to psychiatry—to over 500 uninsured and underinsured patients. Over the years, the SRFCP has partnered with many groups, including California Western School of Law students, Pacific College of Health and Science acupuncturists, and Feeding San Diego volunteers to ensure patients receive holistic care.

Since many SRFCP patients are Spanish-speaking, partnering with interpreters has been an instrumental part of the SRFCP's success. Interpreters not only provide translation services for our patients and medical teams, but also serve as a cultural bridge while discussing sensitive

topics, such as mental health concerns or social structures.

When COVID-19 cases began rising in the United States in early March, it was unclear how the SRFCP would continue to provide care to patients. Initially, the COVID-19 pandemic was expected to be an equalizer for all U.S. citizens, but the pandemic quickly illuminated health disparities deeply seeded in the U.S. healthcare system. In San Diego, Hispanic and Latinx residents make up over half of COVID-19-positive cases and hospitalizations, along with half of COVID-19 deaths despite accounting for only 34% of the San Diego County population.[1,2] In addition, 70% of the San Diego Hispanic population lives in ZIP Codes with higher-than-average unemployment rates.[3]

A majority of SRFCP patients are low-income and Hispanic or Latinx, and continuing care through the pandemic has been crucial for addressing the variety of patient needs, including providing COVID-19 education, food, and emotional support. The SRFCP has successfully strengthened established relationships with this vulnerable population amid a political atmosphere that breeds mistrust and fear due to recent changes in the public charge rule.[4]

The SRFCP closed its doors to in-person visits starting March 16, 2020 in response to California Governor Gavin Newsom's stay-at-home executive order and transitioned to telehealth services immediately after. Capabilities for telehealth visits had not been previously set up, so new workflows and task forces were promptly established. Telehealth visits began immediately on March 16 to prevent any major gaps in care for patients. In an effort to best address the needs of SRFCP patients, a needs assessment was implemented in late March.

A task force of medical students, Spanish interpreters, social workers, and SRFCP staff assembled on April 3 to assist patients in downloading and navigating password-protected Zoom video conferencing. Patients were first screened for access to appropriate technology (**Figure 1**), including phone or computer with

video capabilities, email access, and access to WiFi or unlimited data.

Figure 1. Pre-visit technology assessment.

To further accommodate the needs of high-risk patients, the Food Prescription Program was also expanded to include food deliveries. The program was first created by a medical student in 2015 due to tremendous food insecurity within the SRFCP patient population.[5]

Food prescriptions—which include fresh produce, eggs, and canned and frozen food—were donated by Feeding San Diego, a county-wide hunger relief and food rescue organization. Feeding San Diego partners with local and national agencies to provide to those in need. In an effort to minimize patient use of public transport during the pandemic, the Food Prescription Program was expanded at the end of March to include delivery of food, along with medications, to patients' homes while observing social distancing recommendations.

In this article, we discuss the physical, emotional, and food needs of SRFCP patients and how novel programs were established to help respond to those needs.

Methods
The SRFCP has four clinics located within San Diego neighborhoods: Downtown (DT), Normal Heights (NH), Pacific Beach (PB), and Lemon Grove (LG). All four locations transitioned to telehealth starting Monday, March 16, 2020 and maintained the same meeting schedule as established for in-person visits (**Figure 2**).

Patient visits were conducted via phone or video by medical students supervised by volunteer attendings or attendings alone. Spanish interpreters provided assistance for Spanish-speaking patients. Historically, the SRFCP serves

predominantly Latinx and Spanish-speaking patients with limited or no health insurance and access to healthcare.

Figure 2. SRFCP locations and weekly schedule.

Clinic Location	Weekday	Time
Downtown (DT)	Monday	5-10 p.m.
Normal Heights (NH)	Tuesday	1-5 p.m.
Pacific Beach (PB)	Wednesday	5-10 p.m.
Lemon Grove (LG)	Every other Friday	1-5 p.m.

The following data were collected from encounters that took place between March 16 and June 30, 2020.

Total Visits
All telehealth primary care visit notes (denoted as either "Office Visit" or "Non-Face-to-Face" on Epic Schedule) written by medical students, residents, or attendings were reviewed. Type of visit (i.e. phone or video) was determined by schedule notes or visit notes.

Needs Assessment
A COVID-19 needs assessment (**Figure 3**) was added to a pre-populated note template on Epic for telehealth visits at all clinic sites. Full implementation was reached by the end of March and maintained through the summer. The needs assessment was established to ensure that patients' needs, questions regarding COVID-19, and stressors were addressed. The questionnaire was intended to be filled out once per patient, as indicated in the header. Needs assessments were conducted verbally over telephone or video by medical students with the assistance of Spanish interpreters if necessary.

Figure 3. Needs assessment (questions collected and analyzed denoted with '*').

Parameters
High-risk for COVID-19: Defined as patients with age ≥ 65, diabetes, hypertension, pulmonary comorbidities (e.g. asthma), smoking, or homeless. Notes with no indication filled out were investigated to find patients' risk based on the "Problem List" or "Diagnosis" section of the specific visit. The data gathered were classified as a binary, "Yes" or "No."

Concerns for emotional well-being: Patients' emotional well-being was assessed by providers with respect to the question, "Any concerns about emotional well-being?" Single-word answers of "Yes/No" were coded accordingly. Written answers with use of descriptors including "stress," "sad," "anxious," "worried," or "depressed" were coded as "Yes," while answers indicating no emotional distress were coded as "No."

Food security: Patients' food security was assessed by providers with respect to the question, "Is there enough food in the house?" Providers explicitly stating "Yes/No" were coded accordingly. Written answers indicating use of food assistance services other than the SRFCP Food Prescription Program, specific requests for food delivery, or worry about the imminent lack of food were marked as "No."

Psychiatry and psychology specialty care clinic referrals: Psychiatry and psychology specialty care clinic referral data were queried in Epic and provided by SRFCP staff.

Data Collection and Statistical Analysis
All data were recorded in the Microsoft Excel Web App housed in iShare, a secure data repository accessed only by SRFCP staff and students. All patients seen during this time frame, with or without a completed needs assessment, were included in the dataset to ensure every patient was captured at least once. Blank responses were not included in the analysis of needs assessment data.

All data were de-identified, and all extraneous protected health information were removed prior to analysis. The data was summarized in R (Version 1.3.959) and visualized using the *ggplot2* package.

Results

From March 16 to June 30, 2020, a total of 585 telehealth primary care visits occurred at SRFCP's four clinic locations (**Figure 4**). Approximately 34% of visits were conducted by video.

Figure 4. Stacked bar chart of visit type at each SRFCP clinic location.
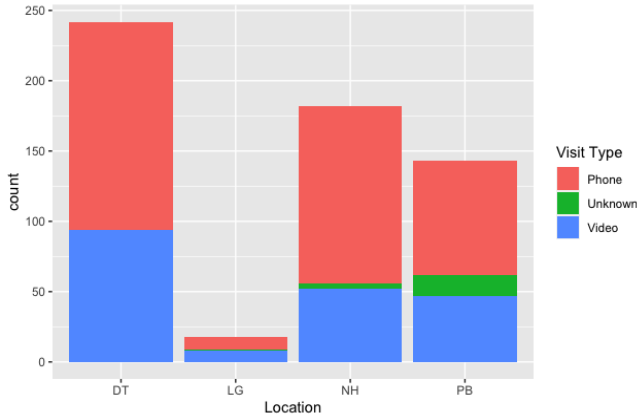
Needs Assessment

Across the 585 telehealth primary care visits, 314 unique patients were seen by medical teams (**Table 1**). Mean age across all clinic locations was 55.5 years (SD = 10.8).

Most patients in the total population were female (75%), and the majority were considered high-risk for COVID-19 (85%). A substantial proportion of both male and female patients were labeled high-risk (**Figure 5**).

Although patients over the age of 65 meet the criteria of being at high risk for COVID-19, patients across all ages were deemed high-risk based on other risk factors (**Figure 6**).

Table 1. Patient demographic characteristics across SRFCP sites.

Demographic	DT n = 98	NH n = 106	PB n = 98	LG n = 12	All n = 314
Age at visit Mean (SD)	56.0 (9.6)	56.7 (12.1)	54.4 (10.5)	48.5 (7.7)	55.5 (10.8)
Sex Female (%)	68 (69%)	88 (83%)	68 (69%)	10 (83%)	234 (75%)
High risk for COVID-19 Yes (%)	84 (87%)	99 (93%)	75 (77%)	8 (67%)	267 (85%)

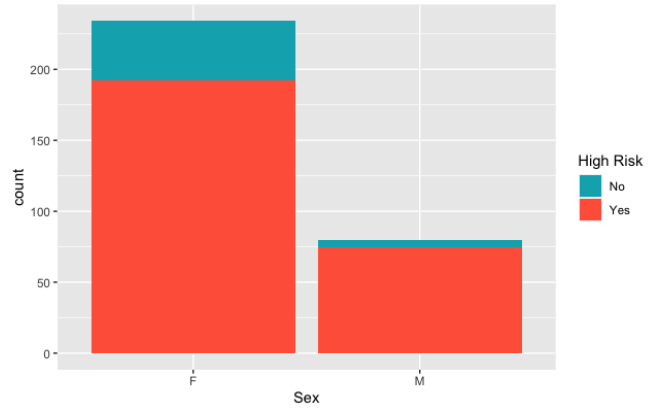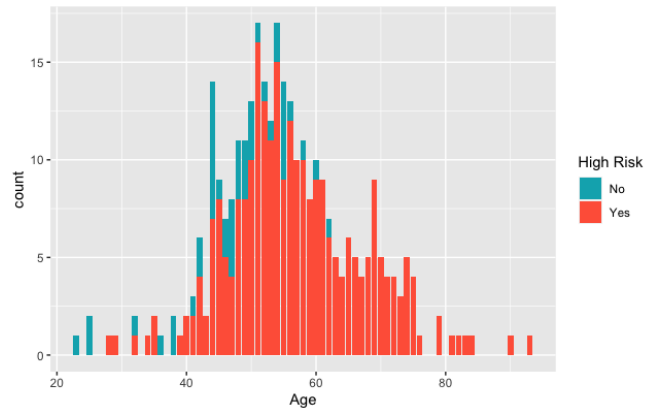**Figure 5.** Stacked bar chart of COVID-19 risk by sex.

Figure 6. Stacked bar chart of COVID-19 risk by age.

Among respondents for each needs assessment question, 25% expressed concerns regarding emotional well-being, and 25% indicated lack of food security (**Table 2**).

Table 2. Needs assessment responses (percentages calculated among respondents only).

Needs Assessment Responses	DT	NH	PB	LG	All
Concerns about emotional well-being Yes (%)	18 (27%)	18 (22%)	24 (28%)	1 (9%)	61 (25%)

Food-secure No (%)	11 (17%)	20 (24%)	27 (33%)	2 (20%)	60 (25%)

Food deliveries: A total of 533 food prescriptions were delivered to patients over 16 weeks, averaging 33 per week.

Psychiatry and psychology specialty care clinic referrals: Twenty-one referrals were made to the psychology and psychiatry specialty care clinics during this time period.

Discussion

The SRFCP was able to address a number of urgent patient needs by promptly implementing telehealth visits and organizing a food and medication delivery program. The established relationship between the SRFCP and long-time patients and their families allowed for the smooth implementation and acceptance of new clinic workflows. Telehealth has allowed the SRFCP to continue fostering patient-provider relationships and care for patients during an especially challenging time economically, physically, and emotionally.

Technology: Telehealth visits had not been established prior to the COVID-19 pandemic. The task force had immense success, with about one-third of telehealth primary care visits held via video conference, allowing medical care teams to better communicate with patients, assess body language, and visualize physical abnormalities. Furthermore, video visits provided some unique benefits, such as the ability to speak to family members and deepen relationships by gaining a glimpse into patients' home lives.

Continuation of care: With 85% of patients at high risk for COVID-19 due to associated risk factors, it was especially important that the SRFCP be able to continue care remotely and deliver food and medications, limiting the need for patients to leave their homes. Many SRFCP patients present with complex care needs, and ensuring continuity of patient visits allowed acute issues to be handled quickly, likely avoiding ER visits. Reliable and timely COVID-19 education distribution has proven to be extremely important, especially in the Hispanic/Latinx community, due to language

barriers and lack of access to care.[6] Though not shown in the data presented, many instances of misinformation from online resources and media coverage were caught and corrected by SRFCP care teams, including two incidences of patients gargling bleach.

Emotional well-being: COVID-19 has impacted the emotional well-being of patients, with one-fourth of patients noting emotional concerns. Three out of the four SRFCP sites have a psychiatry specialty care clinic staffed by medical students and attending psychiatrists. The psychology specialty care clinic, which is led by a licensed clinical psychologist, occurs at two of four SRFCP sites. The psychiatry and psychology specialty care clinics have been able to continue clinics regularly via telehealth to meet the needs of the patient population.

Food security and delivery program: The COVID-19 pandemic has caused additional financial hardships for SRFCP patients. One-fourth of patients reported a lack of food security at the time of their visit, and the SRFCP was able to expand the Food Prescription Program to provide home deliveries. The delivery program involves many volunteers who assist with picking up and organizing food into individual bags for patients. Deliveries are completed by pairs of medical students one day per week. Spanish interpreters are available over the phone to assist in alerting patients of the deliverers' arrival and instruct them to maintain social distancing.

The strengths of this study include a large sample size and data on a vulnerable population in the early months of the COVID-19 pandemic. Limitations of this analysis include issues around data collection. The purpose of the needs assessment was to ensure that patients' needs were met, and it was not originally intended for data-gathering. As a result, some responses were ambiguous and required interpretation by the data analysis team. Many needs assessments were not completed due to time constraints of the visit and the need to address pressing health issues. Despite this, the data provides a glimpse into the needs of the SRFCP patient population during an incredibly challenging time.

Conclusion

The SRFCP was able to adapt quickly to evolving patient issues, from forming a task force to assist with technology support for patients to developing a new food and medication delivery system. The successes of the SRFCP continue to rest on the close collaboration between medical students, physicians, social workers, Spanish interpreters, clinic volunteers, and community organizations. We hope this article will serve as an example of how student-run free clinics can adapt to an ever-changing climate and maintain a patient-centered model of delivering care.

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