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Authors

Krysov, Vikki

Balshin, Michelle

Azar, Elijah

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Overcoming Hesitancy and Barriers to Care with Integration of Telemedicine in a Free Student-run Health Clinic

Vikki A. Krysov[1] ⓘD, Michelle E. Balshin[2] ⓘD, Elijah N. Azar[3] ⓘD, Karina Cernioglo[1] ⓘD, David Perekopskiy[1], Altynay T. Nurpeissova[3] ⓘD, and Lucy Zhonglu Shi[4] ⓘD

Abstract

Introduction: Nadezhda Clinic is a free student-run health clinic that provides culturally sensitive primary care services to the underserved Russian-speaking population of the greater Sacramento area. At the onset of the COVID-19 pandemic, the clinic suspended in-person services and solely offered telemedicine visits. Most patients were hesitant to utilize telemedicine due to poor technological literacy, privacy concerns, and a preference for in-person care. **Objective:** This quality improvement project aimed to evaluate whether the implementation of culturally sensitive telemedicine services and outreach strategies would help address patient hesitancy and barriers to care. **Methods:** Successful implementation of telemedicine was dependent on building trust with the community, providing multilingual technological assistance, and offering personalized support. Some measures that were reviewed in order to assess this included comparison of patient demographics, clinic attendance, and distance reached between in-person and telemedicine services. **Results:** Telemedicine implementation was associated with increased clinic attendance rates with a no-show rate as low as 13% when compared to in-person services with a no-show rate of 20%. Telehealth services also enabled the clinic to reach patients in rural areas up to 120 miles away. **Conclusions:** With the implementation of a culturally sensitive telemedicine protocol, Nadezhda Clinic achieved greater patient retention rates and reached patients at further distances, suggesting an overall reduction in hesitancy and barriers to care. Free clinics offering telemedicine are critical to further address healthcare disparities in marginalized communities.

Keywords

student-run free clinic, telemedicine, telehealth, underserved, culturally sensitive care, primary care

Introduction

An estimated 9.8% of Sacramento residents were born in the former Soviet Union, contributing to the large Russian-speaking population.[1] Due to language and cultural barriers, this population has low rates of health insurance enrollment and limited integration with the healthcare system due to difficulty navigating healthcare services and communicating with medical personnel.[2-5] In addition to these barriers, immigrant communities may also express hesitancy in seeking healthcare due to fear of being misunderstood by medical professionals.[6] There may be additional cultural barriers in telemedicine implementation, although prior research has predominantly focused on factors such as income, education level, age, and urban/rural residence.[7,8] Immigrant populations benefit from culturally and language-concordant care that recognizes their background and the unique challenges they face.

[1]University of California, Davis School of Medicine, Sacramento, CA, USA
[2]A.T. Still University School of Osteopathic Medicine, Mesa, AZ, USA
[3]University of California, Davis, Davis, CA, USA
[4]University of California, Davis, Division of Hospital Medicine, Sacramento, CA, USA

Corresponding Author:
Vikki A. Krysov, School of Medicine, University of California, Davis, 4610 X St, Sacramento, CA 95817, USA.
Email: vakrysov@ucdavis.edu

Nadezhda Clinic, a student-run free clinic (SRFC), was established in August 2019 with the goal of providing culturally sensitive primary care services to the local community. SRFCs are led by volunteer undergraduate, health professional students, and attending physicians. When Nadezhda Clinic was first established there were certain challenges including significant patient hesitancy toward telemedicine, absence of an electronic medical record (EMR) system for coordinating remote care, and a lack of infrastructure for hosting telehealth services. Patients expressed skepticism toward a physician being able to accurately diagnose problems virtually, suggesting that in-person services were important for establishing trust with patients.

In March of 2020, the World Health Organization declared COVID-19 to be a global pandemic and the total number of people infected with SARS CoV-2 rose to 750,890 with a 4.8% fatality rate (36,405 people).[9] Given the novelty of the virus and a lack of targeted treatments and vaccines at the time, public health interventions such as social distancing were implemented as a means of controlling viral transmission.[10,11] In response to institutional mandates, Nadezhda Clinic closed all in-person services. Because a majority of patients seen at the clinic had not been established with another primary care provider (PCP) or were uninsured, the interruption of services posed a threat to healthcare access. When considering people infected with SARS CoV-2, low-income and minority populations were at greater risk for hospitalization for reasons such as higher prevalence of chronic medical comorbidities, reduced access to healthcare, and inability to safely shelter at home.[12-14] Furthermore, the COVID-19 pandemic magnified health concerns of immigrant communities due to immigration status, difficulty understanding public health alerts, and lack of access to affordable, preventative health services.[15,16] Therefore, telemedicine was an imperative tool that could enable continued, safe delivery of care in the midst of community quarantines, overwhelming strain on healthcare systems, and a decline in in-person care availability worldwide.[11,17-20]

Many Nadezhda Clinic patients previously expressed their challenges in accessing healthcare due to language barriers and dismissal in medical settings. While telemedicine has the potential to widen existing disparities in healthcare access, a culturally adapted approach may help facilitate uptake among underserved populations.[21,22] In spite of initial patient hesitancy with using telemedicine services, Nadezhda Clinic was able to successfully develop a culturally sensitive and HIPAA-compliant telemedicine protocol utilizing Zoom teleconferencing software that increased community outreach, support, and healthcare engagement. Telehealth services were offered exclusively from July 2020 through September 2021 and patients were seen over the span of 14 clinic days. Due to temporary policy changes by the U.S.
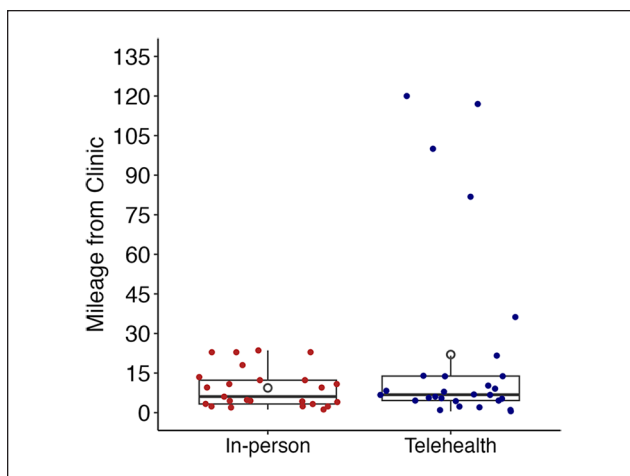

Figure 1. Distance from the Sacramento clinic in miles for patients utilizing in-person and telehealth services. Average mileage from the clinic for in-person services was 9.4 miles (1.2, 23.6). For telehealth services, the average mileage from the clinic was 22 miles (0.5, 120). Patients seen in-person are depicted with red circles and patients seen via telehealth are depicted with navy blue circles. Mean for each group is denoted by a white circle.

Department of Health and Human Services to expedite the adoption of telehealth during the COVID-19 public health emergency, Nadezhda Clinic was able to reach patients at a greater geographical distance.[23,24] Effectiveness of telemedicine implementation was assessed by comparing the use of in-person and telehealth services. Ultimately, the aim of this quality improvement project was to evaluate whether a culturally sensitive approach to telemedicine implementation and outreach within a free clinic would help address existing patient hesitancy and barriers to care experienced by the underserved Slavic community of Sacramento.

Methods

This was a quality improvement project focused on improving care for a specific patient population in a single clinic and was not subject to IRB oversight. SRFC funding comes from donations, fundraisers, and grants. During the COVID-19 pandemic, Nadezhda Clinic was awarded funds from the National Association of Free & Charitable Clinics (NAFC). This funding granted access to an EMR system called Practice Fusion™, allowing for better care coordination amongst providers. The clinic chose Zoom teleconferencing software for telehealth visits as it provided both audio and video capabilities, enhanced security features, and breakout room functions that could be adapted to replicate the workflow in a clinic office (Supplemental Figure 1). Other SRFCs across the country also reported success utilizing Zoom teleconferencing to host telemedicine

clinics.[25,26] Additional information on clinic day workflow is included in the supplemental file.

Furthermore, there was a strong focus on patient outreach and support, specifically addressing language and technological barriers. Clinic volunteers were no longer able to interact with community members in-person, so engagement efforts shifted to personalized phone calls and more creative uses of digital media. Any patient that expressed interest in the clinic's services received a personal phone call from the scheduling director who addressed patient concerns regarding telemedicine services in the patient's preferred language. The clinic created a Zoom tutorial in Russian which guided patients on navigating the application on personal devices. When scheduling a telehealth visit, the scheduling director shared the Zoom tutorial via text or email.

The clinic also knew its patient population relied on local churches, Russian language radio and newspapers for community engagement and therefore targeted its efforts toward these media outlets. This community-centered outreach and understanding of patients' cultural background were critical for overcoming patient hesitancy toward telehealth and securing community trust. Further, when developing the telemedicine protocol, roles were thoughtfully created to address patients' needs (Supplemental Table 1). While some patients continued to express skepticism, others were willing to try telemedicine and provide feedback.

Additionally, free virtual workshops were developed in Russian related to diabetes, hypertension, and COVID-19. Animated and narrated Russian language videos on medical topics including those on mental health, Alzheimer's disease and dementia, and women's health were also created and shared on the clinic's social media sites. This reinforced that the clinic was a reliable source for receiving medical information and healthcare.

Upon checking in to their appointments over Zoom, patients provided consent to receive telemedicine and interpreting services from the clinic. During the telemedicine visit, each patient was paired with a clinic volunteer known as a patient advocate. In addition to providing interpreting services, an undergraduate patient advocate conducted a social needs assessment, assessing for access to health insurance, housing, food, and other services. The team provided additional information and resources to address each patient's specific needs. If the patient did not have insurance or a PCP, the health educator referred the patient to Sacramento Covered, a partner organization staffed with multilingual insurance navigators. After the referral was made, the team maintained contact with the patient to ensure they were able to obtain insurance and establish care with a PCP.

Paper and electronic clinic records from August 2019 to September 2021 were reviewed for quality improvement purposes. Records were divided into 3 time periods: 7 months of in-person services offered from August 2019 to February 2020, the first 7 months of telehealth services offered from July 2020 to January 2021, and the last 7 months that telehealth services were offered from February 2021 to September 2021. Demographic information including sex, preferred language, age, and county of residence and appointment characteristics were reviewed. The no-show rate from the first and last 7 months of telemedicine was compared to the no-show rate from the first 7 months that in-person services were offered. Statistical significance was determined using the 2-population proportion Z test with the P-value set at .05. The mileage from the clinic site to the patient's home was calculated and mean mileage was compared among patients that utilized in-person and telehealth services via a Mann-Whitney U test.

Results

In person services were offered for 7 months between August 2019 to February 2020 and were utilized by 25 unique patients. Among the 25 unique patients seen, 64% were female (n = 16) and 36% were male (n = 9). Ninety-two percent of participants spoke Russian and/or Ukrainian alone (n = 23) and 8% spoke English alone (n = 2). Ninety-two percent of patients were 36 to 64 years old (n = 23) while 8% were 65 years or older (n = 2). Ninety-six percent of participants resided within Sacramento (n = 24; Table 1). A total of 45 appointments were scheduled and 36 appointments were attended with a no-show rate of 20% (Table 2). Two of the 9 no-show visits were rescheduled to a later date and attended, while the remaining 7 visits were not rescheduled. Of the 25 patients that received in-person services, 3 later returned for a telehealth visit.

During the first 7 months of telemedicine offered between July 2020 and January 2021, a total of 16 unique patients utilized telemedicine, of which 50% were female (n = 8) and 50% were male (n = 8). Seventy-five percent of participants spoke Russian and/or Ukrainian alone (n = 12), 18.8% spoke English alone (n = 3), and 6.3% had no language preference (n = 1). Nineteen percent of participants were 18 to 35 years old (n = 3), 62.5% were 36 to 64 years old (n = 10), and 18.8% were 65 years or older (n = 3). Sixty three percent resided within Sacramento while 37.5% (n = 10) resided in other counties including Placer, Yuba, San Mateo, San Francisco, and Contra Costa counties (n = 6). The proportion of patients residing in other counties was significantly greater in the group seen during the first 7 months of telemedicine when compared to those seen in-person (P = .01; Table 1). A total of 31 appointments were scheduled and 26 appointments were attended for a no-show rate of 16.1%. There was no significant difference in the no-show rate between in-person services and the first 7 months of telehealth (P = .38; Table 2). Three of the 5 no-show visits were rescheduled to a later date and attended, while 2 were not rescheduled. Of the 16 patients that

Table 1. Demographic Characteristics of Nadezhda Patients Based on Services Utilized.

Demographic Characteristic	In-person services (August 2019-February 2020) (n = 25)		First 7 months telehealth (July 2020-January 2021) (n = 16)		Last 7 months telehealth (February 2021-September 2021) (n = 19)	
	n	%	n	%	n	%
Sex						
Female	16	64.0	8	50.0	10	52.6
Male	9	36.0	8	50.0	9	47.4
Preferred language						
Russian and/or Ukrainian	23	92.0	12	75.0	11	57.9
English	2	8.0	3	18.8	2	10.5
No preference	0	0	1	6.3	6	31.6
Age						
18-35	0	0.0	3	18.8	2	10.5
36-64	23	92.0	10	62.5	14	73.7
65+	2	8.0	3	18.8	3	15.8
Residence						
Sacramento county	24	96.0	10	62.5	13	68.4
Other county	1	4.0	6	37.5	6	31.6

Table 2. Appointment Attendance.

Appointment Outcome	In-person services (August 2019-February 2020) (n = 25)	First 7 months telehealth (July 2020-January 2021) (n = 16)	Last 7 months telehealth (February 2021-September 2021) (n = 19)
Appointments scheduled	45	31	38
Appointments attended	36	26	33
No-show rate (%)	20.0	16.1	13.2

utilized telemedicine services during the first 7 months, 7 patients returned during the last 7 months that telehealth services were offered.

During the last 7 months of telemedicine offered between February 2021 and September 2021, a total of 19 unique patients utilized telemedicine, of which 52.6% were female (n = 10) and 47.9% were male (n = 9). Fifty-eight percent of participants spoke Russian and/or Ukrainian alone (n = 11), 10.5% spoke English alone (n = 2), and 31.6% had no language preference (n = 6). Eleven percent of participants were 18 to 35 years old (n = 2), 73.7% were 36 to 64 years old (n = 14), and 15.8% were 65 years or older (n = 3). Sixty eight percent resided within Sacramento (n = 13) while 31.6% resided in other counties including Placer, Yuba, and San Mateo counties (n = 6). The proportion of patients residing in other counties was significantly greater in the group seen during the last 7 months of telemedicine when compared to those seen in-person ($P = .02$; Table 1). A total of 38 appointments were scheduled and 33 appointments were attended for a no-show rate of 13.2%. There was no significant difference in the no-show rate between in-person services and the last 7 months of telehealth ($P = .27$; Table 2).

Three of the 5 no-show visits were rescheduled to a later date and attended, while 2 were not rescheduled.

Across the 7 months that in-person services were offered, a total of 36 in-person visits were attended. Twenty-five visits were to establish care (69.4%) and 11 visits were for follow-up (30.6%). Thirty-two visits were completed with a Russian or Ukrainian-speaking interpreter (88.9%) and 4 visits were completed in English (11.1%). Across the 14 months that telehealth services were offered, a total of 59 telehealth visits were attended. Twenty-five visits (42.4%) were to establish care while 34 visits were for follow-up (57.6%). Forty-four visits were completed with a Russian or Ukrainian-speaking interpreter (74.6%) while 15 visits were completed in English (25.4%; Table 3). The proportion of follow-up visits attended via telehealth was significantly greater than the proportion of follow-up visits attended in-person ($P = .01$). The proportion of attended in-person visits that required an interpreter was not significantly different from the proportion of attended telehealth visits that required an interpreter ($P = .15$).

For patients utilizing in-person services (n = 25), the average distance from the patient home to the Sacramento

Table 3. Appointment Characteristics.

Appointment Characteristic	In-person visits attended (August 2019-February 2020) (n = 36)		Telehealth visits attended (July 2020-September 2021) (n = 59)	
	n	%	n	%
Type of visit				
Establishing care	25	69.4	25	42.4
Follow-up	11	30.6	34	57.6
Interpreter requested				
Yes	32	88.9	44	74.6
No	4	11.1	15	25.4

clinic site was 9.4 miles and ranged from 1.2 to 23.6 miles. In comparison, for patients utilizing telemedicine services (n = 28), the average distance from the patient home to the Sacramento clinic site was 22 miles and ranged from 0.5 to 120 miles (Figure 1). The difference in means across the 2 groups was not statistically significant (*P* = .57, Mann-Whitney *U* test).

Discussion

Following stay at home orders enacted in the spring of 2020, Nadezhda Clinic successfully developed a new telehealth protocol to continue safely providing care for the underserved Russian-speaking population of Sacramento and surrounding regions.

Demographic data demonstrated that most patients seeking in-person and telemedicine clinic services had limited English proficiency (LEP), with a majority of visits requiring an interpreter, highlighting the continued need for language-concordant healthcare services. The predominant age group seen by the clinic for both in-person and telemedicine services was patients ages 36 to 64 years. A majority of this group was ineligible for Medi-Cal due to immigration status, but this is no longer a barrier due to California's expansion of Medicaid coverage in the last 2 years.[27] About a third of patients seen via telemedicine were residents of other counties, including rural areas, compared to in-person services where patients were almost exclusively Sacramento County residents. The average distance from the clinic site increased more than twofold during the implementation of telehealth services as compared to in-person services and the maximum distance reached in miles multiplied nearly sixfold. Patients seen from other counties may have had limited access to care within their home county due to remoteness and shortages of healthcare providers, especially those that are language-concordant.[28]

As a relatively new clinic, the COVID-19 pandemic and telemedicine implementation negatively impacted patient retention. Upon the return of clinic services, the patient utilization rate was 64% and 76% of the capacity of in-person visits during the first and last 7 months of telemedicine, respectively, comparable to other student run-clinics utilizing telehealth.[29] The gradual decrease in no-show rate when comparing in-person services to the first and last 7 months of telehealth indicates that patients were more likely to keep and attend telehealth appointments (20.0%, 16.1%, and 13.2%, respectively; Table 2). This is consistent with the finding that a greater proportion of attended follow-up visits were via telehealth, likely secondary to a reduction in barriers to presentation and hesitancy to return via this format. This aligns with previous research that suggests patients at SRFCs that utilize telehealth services are more likely to attend appointments, when compared to in-person services.[25,29]

Globally, outpatient clinics that began offering telemedicine services in response to the COVID-19 pandemic similarly noted high rates of in-person appointment cancellations and highlighted the utility of targeted virtual programs. When 45% of scheduled in-person appointments were canceled without being rescheduled in a urology clinic in Italy, telemedicine implementation permitted efficient screening of cases and prevented delay in care delivery to clinic patients.[20] In a rheumatology clinic in India, telemedicine was positively received with 74% of scheduled visits switched from in-person to teleconsultation within 7 days of implementation.[19] Teleconsultation proved to be especially practical for its patient base, given a portion of patients previously traveled up to 250 km to reach the clinic, in some cases via public transport.[19] Meanwhile in Toronto, a virtual care program was developed to manage self-isolating patients diagnosed with COVID-19 and was rapidly adapted to address telehealth limitations, including delivery of portable oximeters to homes of patients experiencing ongoing dyspnea.[30]

On a local level, Nadezhda Clinic's targeted telemedicine services emphasized an understanding of the cultural background of its patients and utilization of specific forums for outreach increased acceptance of the clinic as a place where patient's medical, cultural, and social needs would be met. The clinic found that for LEP patients, utilizing patient advocates not only allows in-house interpretation services, but also addresses cultural and language barriers. Patient advocates simultaneously filled the role of a medical interpreter and that of a community health worker (CHW). Free clinics, especially those working with low-income, underinsured, and immigrant populations, can consider a similar role when integrating telemedicine to provide more personalized services to LEP patients. Another protocol utilizing a cultural and language-concordant patient advocate or CHW has been found to improve quality of care and patient outcomes.[31]

Limitations of this project include a small sample size which results in a lack of power and inability to detect statistical significance, lack of qualitative data to assess perceptions of telemedicine, and the focus on a specific

demographic which may not be representative of the wider population. Additionally, prior to telemedicine implementation, only paper records were available. Patients that did not show for any of their scheduled in-person appointments were not recorded and as a result of data unavailability, certain regression analyses were not performed and adjustment for patient characteristics for these visits was not possible. Lastly, while Zoom facilitated telemedicine visits, physical examination was limited and occasional disconnections occurred due to poor home internet connection.

Conclusions

Although in-person clinic services have resumed, the clinic plans to continue to address barriers that impede telehealth access and offer culturally sensitive telehealth services that are receptive to patient needs. This consists of community-centered outreach and education, recruitment of diverse and multilingual volunteers, and creation of clinic roles geared toward supporting healthcare navigation, all of which can be applied by other free clinics. Telemedicine implementation may worsen health disparities if not executed with the cultural context of the patient in mind, but with the outlined methods, the clinic strives to enhance accessibility for patients that have historically had challenges when interacting with the healthcare system. While Nadezhda Clinic developed this protocol as a means of improving the care of a specific patient population, other clinics can use some of these strategies to provide more culturally attuned care for their patients that may allow for more equal engagement in healthcare across diverse cultural backgrounds.

Ethical Considerations

This initiative was a quality improvement project and therefore exempt from IRB oversight.

Consent to Participate

Patients provided consent for in-person and telemedicine services.

Consent for Publication

Not applicable.

ORCID iDs

Vikki A. Krysov https://orcid.org/0009-0007-5026-0475
Michelle E. Balshin https://orcid.org/0009-0001-4503-1180
Elijah N. Azar https://orcid.org/0009-0009-9887-0859
Karina Cernioglo https://orcid.org/0000-0003-4715-9580
Altynay T. Nurpeissova https://orcid.org/0009-0005-2818-5574
Lucy Zhonglu Shi https://orcid.org/0000-0002-9100-6760

Data Availability

Not applicable.

Supplemental Material

Supplemental material for this article is available online.

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