Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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IMPROVEMENT BRIEF

Increasing Telehealth Access to Care for Older Adults During the COVID-19 Pandemic at an Academic Medical Center: Video Visits for Elders Project (VVEP)

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Background: The COVID-19 pandemic led to a significant increase in ambulatory virtual care, threatening access to care for older adults with lower digital literacy. This report describes the Video Visits for Elders Project (VVEP), a quality improvement effort to help older adults access video visits at an academic primary care practice.

Methods: We reached out to empaneled older adults (≥ 65 years) who had a scheduled visit between March 30 and June 12, 2020. We assessed patients' readiness to engage in a virtual visit and offered to walk them through accessing the platform if they owned a compatible device. We evaluated outcomes of those phone calls and actual visit completion.

Results: Between March 26 and June 3, 2020, we called 1,427 patients, reaching 1,025 (71.8%). Of those reached (mean age 75.6 years), 312 (30.4%) were already video-enabled, 192 (18.7%) asked for technical assistance, 185 (18.0%) did not have access to an electronic device, and 336 (32.8%) declined assistance. Of those reached, 40.4% completed their visit by video, 26.5% by telephone, and 1.4% by in-person visit, while 29.6% canceled and 2.1% no-showed.

Conclusion: VVEP successfully innovated to promote equitable access to telemedicine for vulnerable older patients in a time of crisis. Almost half required technical assistance or did not have access to a compatible device to engage in virtual care. As telemedicine will continue to play an important role in access to clinical care even in a postpandemic world, it is imperative for health systems to focus on technological need to promote equitable access to care for all patients.

The novel coronavirus disease, COVID-19, was declared a pandemic by the World Health Organization on March 11, 2020,[1] leading to rapid changes in the landscape of ambulatory care. To minimize risk of SARS-CoV-2 transmission, which causes COVID-19, many ambulatory practices turned to telemedicine. These practices switched to virtual visits by telephone or video from in-person visits, which were reserved for urgent needs requiring a physical exam.[2,3] In a national survey of physician practice patterns during COVID-19, 48% of physicians reported treating patients through telemedicine, an increase from 18% in 2018.[4] Another study of telemedicine use in the outpatient setting reported a 23-fold increase in weekly number of telemedicine visits during the COVID-19 pandemic.[5] As a response to COVID-19, the US Department of Health and Human Services promoted video visits[6] and the Centers for Medicare & Medicaid Services broadened coverage for telehealth services.[7]

Although telemedicine was suggested as one way to ensure continued access to medical care for older adults, more than a quarter of Medicare beneficiaries in one study lacked access to a computer or smartphone at home.[8] Past research has demonstrated that almost 40% of older adults in the United States are unready for video visits, and about 20% are unready for telephone visits.[9] Those who were older, were not married, were Black or Latinx, had less education, or were lower income had higher prevalence of telemedicine unreadiness and were less likely to have digital access.[8,9] Finally, prior studies showed that older adults and those who identified as racial/ethnic minorities, needed interpreter services, were Medicaid beneficiaries, or were from areas with limited broadband access were less likely to have video visits compared to telephone visits.[10] Video visits may provide better care compared to telephone visits by allowing for a limited physical exam and facilitating communication through visual and facial cues. However, because video visits require equipment and Internet access and are often complex to set up,[10] they may be challenging for older adults, particularly those from underresourced communities and with limited English proficiency (LEP).

Similar to many ambulatory practices, the University of California, San Francisco (UCSF) General Internal Medicine (GIM) primary care practice rapidly converted nearly all in-person visits to virtual visits by telephone or

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video in mid-March 2020, with the goal of continued access to care. To improve access for older adult GIM patients during the early months of the COVID-19 pandemic, we developed and implemented a quality improvement (QI) intervention to help them access care through telemedicine. The aim of this report is to describe the QI intervention, report the results of the program, and discuss the implications and continued challenges moving forward.

METHODS

Video Visits for Elders Project Improvement Goals

The Video Visits for Elders Project (VVEP) intervention goals were fourfold: (1) perform outreach to older primary care patients to inform them of the option for video or telephone visits; (2) reduce burden for practice administrative staff who did not have time to assist older patients with learning about video visits; (3) offer assistance in enabling video on patients' electronic devices and practicing a video connection; and (4) confirm in the electronic health record (EHR) those patients who were video-enabled.

Setting

The UCSF GIM practice serves more than 26,000 racially/ethnically and linguistically diverse patients with 48,100 patient encounters annually. Patients aged ≥ 65 years account for 32% of the practice's panel and 40% of visits. The GIM practice began converting in-person appointments to video or telephone visits starting the first week of March 2020, with complete conversion of all nonurgent appointments to video or telephone visits on March 17, 2020, when the San Francisco shelter-in-place order began. In the year prior to the COVID-19 pandemic, only 1% of GIM practice visits were video visits.

Patient Population

Patients included in the VVEP intervention were adults aged ≥ 65 years who had a primary care physician in the GIM practice, had a scheduled visit between March 30 and June 12, 2020, and spoke English, Spanish, Cantonese, Mandarin, or Vietnamese (top patient languages in the GIM practice). We categorized patients as having LEP if they had a non-English language preference in the EHR and confirmed their language preference over the telephone. Patients were excluded if they did not speak one of the aforementioned languages or did not have a scheduled primary care visit during the above time frame.

Intervention Team

The intervention team was led by a GIM physician [L.K.] with expertise in practice-based and communication research, particularly among older patients and patients with LEP. Clinical research coordinators, who were previously working with clinical investigator faculty in the GIM Division but were temporarily unable to perform their usual work due to the COVID-19 pandemic, and two medical students worked part-time on this project. All staff were previously trained on HIPAA and had at least read-access to the EHR. One staff member had experience with and access to the EHR scheduling system.

Intervention Process

The team coordinated efforts with GIM practice leadership to ensure that efforts were synergistic with practice endeavors. We developed the script used to call patients (Appendix 1, available in online article) based on experience with prior telephone survey research, translating it to Chinese, Spanish, and Vietnamese using a centering process with the team.

The team used the Doximity, Inc.[11] mobile application to call patients securely in their preferred language one to two weeks before their scheduled primary care appointment. Calls were made between March 26 and June 3, 2020, for appointments scheduled between March 30 and June 12, 2020. If we could not reach a patient, we left a voice mail with a call-back number and attempted to call patients up to three times.

When a patient was reached, we explained that the practice was converting all appointments to video visits (via Zoom),[12] or telephone visits for those patients unable to access video. We then assessed access to an electronic device (smartphone, tablet, or computer) and whether they were already video-enabled with the video platform (defined as having access to the video platform and being able to effectively use it). If the patient was already video-enabled, we offered to do a practice connection. If they were not yet video-enabled but had an electronic device, we offered to walk them through downloading the platform and then do a practice connection. If a patient said that someone else (for example, family member, paid caregiver) would be helping them with the connection at the time of the visit, we considered them to be video-enabled, and we offered to conduct a practice connection with that person. We also made sure that the patient had the correct meeting ID to use at the time of their visit, and for those who were video-enabled we updated their appointment type in the EHR.

If patients did not have access to an electronic device or were unable to successfully download or use the video platform, we reassured them that they could have their visit over the telephone. If patients declined our assistance to become video-enabled, we asked and recorded their reasons for refusal (for example, not wanting to have a video visit and preferring to reschedule an in-person visit in the future, feeling they could set up the video without assistance, having already canceled their appointment).

Patient Demographic Characteristics

Information on patient age, gender, race-ethnicity, language preference, insurance status, medical comorbidities, and prior visits was gathered from the EHR.

Table 1. Characteristics of Older Primary Care Patients (≥ 65 Years) Outreached to During Video Visit for Elders Project (*N* = 1,427)

	Not reached (*n* = 402) *n* (%)	Reached (*n* = 1,025) *n* (%)	*p* value
Age in years (mean ± SD)	75.2 ± 7.3	75.6 ± 7.5	0.37
Sex			
Female	244 (60.7)	595 (58.0)	0.36
Male	158 (39.3)	430 (42.0)	
Race/ethnicity			
White	155 (38.6)	432 (42.1)	0.84
American Indian/Alaska Native	1 (0.2)	3 (0.3)	
Asian/Asian American	135 (33.6)	330 (32.2)	
Black/African American	41 (10.2)	88 (8.6)	
Hispanic/Latinx	45 (11.2)	104 (10.1)	
Native Hawaiian/Pacific Islander	3 (0.7)	12 (1.2)	
Other/Unknown/Declined	22 (5.5)	56 (5.5)	
Language			
English	313 (77.9)	843 (82.2)	0.26
Chinese*	58 (14.4)	124 (12.1)	
Spanish	18 (4.5)	36 (3.5)	
Vietnamese	13 (3.2)	22 (2.1)	
Insurance			
Medi-Cal	16 (4.0)	18 (1.8)	0.06
Medicare	282 (70.1)	693 (67.6)	
Medicare Advantage	58 (14.4)	186 (18.1)	
Private	37 (9.2)	100 (9.8)	
Self-pay	9 (2.2)	28 (2.7)	
Medical comorbidities (Elixhauser count) (mean ± SD)	4.6 ± 2.6	4.7 ± 2.7	0.67
Primary care visits in prior 12 months (mean ± SD)	3.3 ± 2.7	3.2 ± 2.4	0.52

* Includes Cantonese and Mandarin speakers. SD, standard deviation.

Outcome Measures

We assessed the number of patients called, the number reached, and the outcome of those phone calls (already video-enabled, completed video platform installation, unsuccessful video platform installation, no access to electronic device, declined help with video platform installation). We also explored the final outcome of the scheduled visit (canceled, no-show, completed) and among completed visits, what type of visit was completed (telephone, video, in-person).

Statistical Analyses

We calculated descriptive statistics for patients' sociodemographic characteristics and assessed outcome differences using chi-square and *t*-tests as appropriate. We assessed statistical significance at $p < 0.05$. Stata 16.1 (StataCorp LLC, College Station, Texas) was used to analyze the data. The UCSF Institutional Review Board approved this QI evaluation study.

RESULTS

Reaching Patients

Between March 26 and June 3, 2020, the VVEP team called a total of 1,427 patients with primary care visits scheduled between March 30 and June 12, 2020, and reached 1,025 (71.8%). For patients we were able to reach, the mean age was 75.6 years (standard deviation [SD] 7.5), 58.0% were women, 42.1% identified as non-Hispanic White, 32.2% as Asian/Asian American, 10.1% as Hispanic/Latinx, and 8.6% as Black/African American (Table 1). Most (82.2%) spoke English; 12.1% spoke Chinese, 3.5% Spanish, and 2.1% Vietnamese. A majority of patients were insured by Medicare (67.6%). Patients had an average of 4.7 medical comorbidities and 3.2 primary care visits in the prior 12 months. There were no statistically significant differences between those we reached and those we were unable to reach. Our team spent from a few minutes on the phone confirming that a patient was already video-enabled to more than an hour helping patients through the process of downloading and using Zoom. Anecdotally, those who required the most assistance did not have much experience with electronic platforms and did not have others to assist them outside of our team.

Immediate VVEP Outcomes

Among the 1,025 patients reached, 312 (30.4%) were already video-enabled, 192 (18.7%) accepted assistance to video-enable their electronic devices, 185 (18.0%) did not have access to an electronic device for video visits, and 336 (32.8%) declined (Table 2). Of the 192 patients who ac-

Table 2. Outcome of Video Visits for Elders Project Telephone Outreach Calls Among Older (≥ 65 Years) Patients Who Were Reached (*N* = 1,025)

	Already video-enabled (*N* = 312) *n* (%)	Completed video platform installation (*N* = 149) *n* (%)	Unsuccessful video platform installation (*N* = 43) *n* (%)	No access to electronic device (*N* = 185) *n* (%)	Declined help with video platform installation (*N* = 336) *n* (%)	*p* value*
Age in years (mean ± SD)	75.0 ± 7.3	75.6 ± 7.0	76.0 ± 7.1	77.3 ± 7.9	75.0 ± 7.4	0.008
Sex						
Female	175 (56.1)	80 (53.7)	34 (79.1)	96 (51.9)	210 (62.5)	0.005
Male	137 (43.9)	69 (46.3)	9 (20.9)	89 (48.1)	126 (37.5)	
Race/ethnicity						
White/Caucasian	154 (49.4)	77 (51.7)	13 (30.2)	64 (34.6)	124 (36.9)	< 0.001
American Indian/Alaska Native	0	1 (0.7)	0	1 (0.5)	1 (0.3)	
Asian/Asian American	92 (29.5)	41 (27.5)	22 (51.2)	51 (27.6)	124 (36.9)	
Black/African American	21 (6.7)	10 (6.7)	1 (2.3)	32 (17.3)	24 (7.1)	
Hispanic/Latinx	26 (8.3)	11 (7.4)	4 (9.3)	30 (16.2)	33 (9.8)	
Native Hawaiian/Pacific Islander	1 (0.3)	2 (1.3)	1 (2.3)	0	8 (2.4)	
Other/Unknown/Declined	18 (5.8)	7 (4.7)	2 (4.7)	7 (3.8)	22 (6.5)	
Language						
English	264 (84.6)	132 (88.6)	30 (69.8)	141 (76.2)	276 (82.1)	0.004
Chinese	37 (11.9)	13 (8.7)	9 (20.9)	23 (12.4)	42 (12.5)	
Spanish	7 (2.2)	3 (2.0)	1 (2.3)	15 (8.1)	10 (3.0)	
Vietnamese	4 (1.3)	1 (0.7)	3 (7.0)	6 (3.2)	8 (2.4)	
Insurance						
Medi-Cal	3 (1.0)	3 (2.0)	1 (2.3)	5 (2.7)	6 (1.8)	0.094
Medicare	208 (66.7)	90 (60.4)	35 (81.4)	135 (73.0)	225 (67.0)	
Medicare Advantage	51 (16.3)	33 (22.1)	5 (11.6)	32 (17.3)	65 (19.3)	
Private	38 (12.2)	15 (10.1)	2 (4.7)	11 (5.9)	34 (10.1)	
Self-pay	12 (3.8)	8 (5.4)	0	2 (1.1)	6 (1.8)	
Medical comorbidities (Elixhauser count) (mean ± SD)	4.2 ± 2.7	4.9 ± 2.8	5.3 ± 2.9	5.6 ± 2.6	4.4 ± 2.5	< 0.001
Primary care visits in prior 12 months (mean ± SD)	3.0 ± 2.3	3.0 ± 2.3	3.5 ± 3.0	4.0 ± 2.5	2.9 ± 2.5	< 0.001

* Statistical significance denoted at $p < 0.05$. SD, standard deviation.

cepted assistance, we were able to successfully video-enable devices for 149 (77.6%). Among the 18.0% without access to an electronic device, patients identifying as Black/African American or Hispanic/Latinx, patients with LEP, those insured with Medicare, those with more medical comorbidities, and those with more primary care visits in the prior 12 months were disproportionately represented.

The most common reason for declining VVEP team assistance was not wanting to have a video visit and preferring to reschedule an in-person visit in the future ($n = 225$; 67.0%). Other reasons included feeling they could set up the video without assistance ($n = 40$; 11.9%) and having already canceled their appointment ($n = 11$; 3.3%). Sixty patients (17.9%) did not provide a reason for declining assistance.

Visit Completion and Type

Of patients reached by the VVEP team, 40.4% completed their primary care visit over video, 26.5% completed a telephone visit, 29.6% canceled their scheduled visit, 2.1% no-showed, and 1.4% had an in-person visit. Visit completion and type by VVEP outcome is shown in Table 3. Notably, most of those successfully video-enabled with the help of VVEP staff as well as those already video-enabled did complete their visits via video. Those who declined VVEP staff assistance had the highest rate of visit cancellation, and those without a device or who were unsuccessful at being video-enabled despite VVEP staff assistance had high rates of completing their visits by telephone.

VVEP Tip Sheet

Based on team members' collective experience with VVEP outreach, the team compiled a tip sheet after intervention completion to assist others pursuing similar interventions to successfully engage older patients in telehealth visits. This tip sheet provides guidance ranging from distinguishing the caller's role from a more clinical role, to best ways to communicate over the telephone, to how to download a specific application on a computer or smartphone, to considerations to assess whether the patient will likely be successful with the download, to how to practice a video connection prior to a clinical visit (Appendix 2, available in online article).

Table 3. Ultimate Visit Outcome by Video Visits for Elders Project (VVEP) Outreach Outcome Among Older (≥ 65 Years) Primary Care Patients Who Were Reached by the VVEP Team (*N* = 1,025)

	Overall (*N* = 1,025) *n* (%)	Already video-enabled (*n* = 312) *n* (%)	Completed video platform installation (*n* = 149) *n* (%)	Unsuccessful video platform installation (*n* = 43) *n* (%)	No access to electronic device (*n* = 185) *n* (%)	Declined help with video platform installation (*n* = 336) *n* (%)
Completed video	414 (40.4)	237 (76.0)	114 (76.5)	6 (14.0)	12 (6.5)	45 (13.4)
Completed telephone	272 (26.5)	9 (2.9)	8 (5.4)	26 (60.5)	129 (69.7)	100 (29.8)
Completed in-person	14 (1.4)	4 (1.3)	1 (0.7)	1 (2.3)	2 (1.1)	6 (1.8)
Canceled	303 (29.6)	56 (17.9)	26 (17.4)	8 (18.6)	33 (17.8)	180 (53.6)
No-show	22 (2.1)	6 (1.9)	0	2 (4.7)	9 (4.9)	5 (1.5)

DISCUSSION

In this QI intervention among diverse patients aged 65 years or older at a large, academic, primary care practice, we were able to successfully reach more than 1,000 patients during a 10-week period at the beginning of the COVID-19 pandemic using a team of part-time clinical research coordinators and medical students. About a third of our patients were already video-enabled on their own or through an available family member, but many others required our assistance to have access to video visits.

A national study of outpatient telemedicine visits during the first three months of the pandemic reported that 33.8% of primary care visits were via telemedicine (video and telephone)[5]; in comparison, 92.7% of visits in our primary care practice during the same time period were via telemedicine. Compared to prior studies,[9] a similar proportion of our patients (36.8%, combining those with no access to an electronic device and those needing assistance) were unready for video visits.

Through patience and iterative problem solving over the telephone, the VVEP team was able to video-enable most of those requiring assistance. The majority of those patients who reported already being video-enabled or whom the VVEP team successfully video-enabled completed their primary care visit over video. On the other hand, the majority of patients who declined the VVEP team's assistance either canceled their appointments or had a telephone visit. It is important to note that nearly one fifth of our older patients did not have any device available to enable video visits. The VVEP team reassured these patients that they could still access care via telephone, and most of them did have a telephone visit; only a relatively small number canceled their visits. Offering telephone visits ensured that these patients still had access to care during the early part of the pandemic, but there remains a concern that they will be left behind in an increasingly technology-driven health care environment.

Lessons Learned and Implications

Through VVEP we learned that proactive telephone outreach to vulnerable patients who may be at risk for deferring care is fundamentally important to promote access to clinical care. In fact, more than a year and a half into the COVID-19 pandemic, our GIM clinic continues to conduct about one quarter of visits virtually. As video visits are likely to continue as an important access option, it will be necessary to identify and outreach to patients needing assistance, including many older patients and those with other risk factors largely related to socioeconomic factors,[13] to promote access to timely and appropriate clinical visits.

Although prior systematic reviews suggest that older populations generally accept and are satisfied with the use of telemedicine,[14,15] there are notable barriers for this population, including technical issues and age-related issues with cognition, vision, and hearing.[14] As telemedicine becomes more widely adopted, practices and health systems must ensure that their telemedicine policies do not further exacerbate health disparities. In our study, we found that with a little patience and ingenuity it is possible to assist older patients with technology. Our VVEP tip sheet provides guidance on doing this over the telephone. However, it will likely be easier in the future to do it in-person. Health systems and clinical practices should support staff time to provide this hands-on assistance, which could extend to registering for and navigating patient portals[16] and to other technology-related innovations for clinical care and communication.[17,18] In addition, health systems should partner with community organizations and government agencies to advocate for and promote equitable access to devices, Internet access, and digital literacy training.[19] Finally, the most common reason for declining VVEP team assistance was not wanting to have a video visit and preferring to reschedule an in-person visit in the future, highlighting that some older individuals may choose not to engage with telemedicine regardless of their access to an elec-

tronic device, which is consistent with others' findings that video-visit capability and willingness are two separate constructs to consider when offering telehealth visits to older adults.[20]

Limitations

The main limitation of our study is that the intervention was conducted at a single, academic practice, so findings may not be generalizable. In addition, the intervention was conducted during the beginning months of the COVID-19 pandemic, and clinical needs and practices may have changed since then. Finally, our intervention focused only on patients who spoke certain common languages; we did not include patients who spoke rarer languages who might be at even greater risk of being left out of care.

CONCLUSION

VVEP successfully innovated to leverage academic skill sets and personnel to promote equitable access to care via technology for vulnerable older patients in a time of crisis. The COVID-19 pandemic has revealed the fundamental importance of addressing access to devices and reliable Internet, as well as the ability to navigate those devices to ensure that older adults have equal access to an increasingly technology-based health care system. This is particularly true for those who are low-resourced or socially isolated. Health systems and practices should start to measure patients' technology access and literacy to identify those needing assistance and provide targeted VVEP–style outreach and in-reach, both aimed at hands-on supportive assistance and connection to community-based services. Such a focus on technological need is increasingly necessary to promote equitable access to health care services.

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SUPPLEMENTARY MATERIALS

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