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Title: Patient Interest in and Barriers to Telemedicine Video Visits in a Multi-lingual Urban Safety-Net System

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Tables and figures: 2 tables, 1 figure

Word count: 2152 – 173 – 287 = 1687

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2
3 **ABSTRACT** (150 words)
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5 Objective: To determine interest in and barriers to video visits in safety-net patients with diverse
6 age, racial/ethnic, or linguistic background.
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9 Materials and methods: We surveyed patients in an urban safety-net system to assess: interest in
10 video visits; ability to successfully complete test video visits; and barriers to successful
11 completion of test video visits.
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13 Results: Among 202 participants, of which 177 (87.6%) were persons of color and 113 (55.9%)
14 preferred non-English languages, 132 (65.3%) were interested in and 109 (54.0%) successfully
15 completed a test video visit. Younger age, non-English preference, and prior smartphone
16 application use were associated with interest. Over half (n=112) reported barriers to video visits;
17 Internet/data access was the most common barrier (n=50, 24.8%).
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20 Conclusion: Safety-net patients are interested in video visits and able to successfully complete
21 test visits. Internet or mobile data access is a common barrier in even urban safety-net settings
22 and may impact equitable telemedicine access.
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INTRODUCTION:

Before the COVID-19 pandemic, telemedicine video visits were uncommon, especially within safety-net settings. A 2018 survey found only 44% of community health centers used any telehealth. In the health centers that used telehealth, only half of the use was for patient-facing encounters instead of clinician-to-clinician encounters and <30% of use was for primary care.[1] COVID-19-related physical distancing recommendations and changes in reimbursement policies[2] triggered widescale conversion to telemedicine encounters.[3] Prior studies on interest in video visits focused on the subset of patients who had already completed a video visit, representing early adopters who are likely different from the general population.[4,5]

As telemedicine becomes a standard modality for healthcare, little is known about the interest in or challenges to video visits among low-income, diverse racial/ethnic, or non-English speaking populations. These populations already face disparities accessing healthcare and are already less likely to use digital health tools due to disparities in device ownership, broadband access, and digital literacy.[6–8] To understand the interest and accessibility of video visits among safety-net patients, we conducted an in-depth survey in a public healthcare system to inform strategies to ensure equitable access.

METHODS:

Design, setting, and participants: Cross-sectional phone survey of all patients scheduled with approximately twelve clinicians for a telephone visit during a two-week period at the women's health or general medicine clinic in an urban safety-net system, where most patients are uninsured or Medicaid-insured.[9]

Protocol: Participants were called by trained research analysts or medical student volunteers in their preferred language (with an interpreter if needed) before their telephone appointment and asked about their interest in video visits. All participants were asked about access to a digital device with video capability, access to mobile data/Internet, and prior use of smartphone applications. If participants were not interested, they were asked to identify reason(s) why. (Call script and survey in eMethods of Supplement.) If patients were interested, the caller offered to provide instructions for downloading the video application and conduct a simulated video visit. We focused on downloading the video application used in our health system for telemedicine video visits during the time of this study; this application is accessible through a computer web browser, desktop client, or as a mobile application on the Apple App Store, Google Play App Store, and Amazon Appstore. Sociodemographic characteristics (age, gender, race/ethnicity, and preferred language) and patient portal enrollment were collected from chart review. We also noted if the participant required help from a household member during the call to successfully complete a simulated video visit. This study protocol was reviewed by an institutional review

board and determined to be quality improvement. Patient completion of the phone survey was used to indicate consent.

Outcomes: The primary outcome was interest in video visits. The secondary outcome was success downloading the video application and completing a simulated video visit. We also describe barriers to interest in video visits or successful completion of a simulated video visit.

Analysis: We report the bivariate relationship between sociodemographic characteristics or technology experience with outcomes. We conducted a multivariable logistic regression analysis of the primary outcome, adjusting for age, language, and smartphone application use.

RESULTS

Of 298 patients called, 202 were reached. The majority identified as persons of color (87.6%) and/or preferred a non-English language (55.9%). Reached participants were more likely to be Latinx and speak Spanish than those not reached.

Predictors of interest in video visits and successful completion of test video visits

Among the 202 surveyed participants, 132 (65.3%) were interested and 109 (54.0%) successfully completed a simulated video visit (Table 1). Neither race/ethnicity nor gender were associated with outcomes. Younger age was associated with interest in video visits and completion of a simulated video visit. Nearly two-thirds of participants <55 years old completed a simulated video visit in comparison to one-third of participants 55+ years old. Non-English-speakers were more likely to be interested in video visits (76% vs 51%). In several groups (≥ 40 years old, Black, Latinx, or Spanish-speaking), $\geq 15\%$ patients interested in video visits could not download the video application during the call. (Figure 1)

Table 1: Sociodemographic characteristics of participants (N=202)

Characteristic	Respondents, No (%)		
	All Participants (N = 202)	Interested in video visit (N=132)	Completed test video visit (N=109)
Age, y^{b, c}			
18-29	53 (26.2%)	35 (26.5%)	31 (28.4%)
30-39	49 (24.3%)	38 (28.8%)	36 (33.0%)
40-54	32 (15.8%)	25 (18.9%)	20 (18.4%)
55-64	28 (13.9%)	15 (11.4%)	9 (8.3%)
65-74	25 (12.4%)	13 (9.9%)	10 (9.2%)
>75	15 (7.4%)	6 (4.6%)	3 (2.8%)
Gender			
Male	53 (26.2%)	31 (23.5%)	23 (21.1%)
Female	149 (75.2%)	101 (76.5%)	86 (78.9%)
Language preference^{a, b}			
English	89 (44.1%)	46 (34.9%)	39 (35.8%)
Spanish	86 (42.6%)	65 (49.2%)	51 (46.8%)
Other	27 (13.4%)	21 (15.9%)	19 (17.4%)

Race/ethnicity ^a			
Asian	29 (14.4%)	21 (15.9%)	18 (16.5%)
Black	31 (15.4%)	16 (12.1%)	11 (10.1%)
Latinx	98 (48.5%)	68 (51.5%)	54 (49.5%)
White	25 (12.4%)	12 (9.1%)	11 (10.1%)
Other	19 (9.4%)	15 (11.4%)	15 (13.8%)

^a = p<0.05 for patients reached

^b = p<0.05 for patients interested in video

^c = p<0.05 for patients that completed test video visit

In our sample, 42 patients (20.8%) were enrolled in the online patient portal, and 149 (73.8%) had experience using smartphone applications. Patient portal enrollment was not associated with interest in video visits, but every interested portal user successfully completed a simulated video visit. Prior smartphone application use was associated with both interest in video visits and success in completing a simulated video visit (eTable 1, p<0.001).

In multivariable analyses adjusting for age, language, and smartphone application use, non-English language preference and smartphone application use were significantly associated with higher interest in video visits. (eTable 2)

Barriers to video visits

Among the 202 participants, over half (n=112) reported at least one barrier to video visits. Nearly one-quarter (n=50) reported concerns about data/Internet access. Barriers were more common in participants 55+ years old than <55 years old (75% vs 46%, eTable 3). Fewer than 10% of participants reported barriers related to security, privacy, or lack of time.

Among the 93 participants who did not successfully complete a simulated video visit, >30% reported inadequate data/Internet access (n=42); hesitancy about technology (n=33); no access to device (n=31); or belief that video visits were not better than telephone visits (n=31). (Table 2) Younger participants were more likely to have devices but report video visits were not better than telephone.

Table 2. Barriers reported to video visits by patients who did not complete a test visit (n=93)

	At least one barrier	No Device	Data/Internet issues	Hesitant to use technology	Not better than phone
Total (n, %)	92 (99%)	31 (33%)	42 (45%)	33 (36%)	31 (33%)
Age, y ^{a, b}					
18-29 (n = 22)	22 (100%)	0 (0%)	6 (29%)	5 (23%)	12 (55%)
30-39 (n = 13)	12 (92.3%)	0 (0%)	3 (25%)	3 (23%)	7 (54%)
40-54 (n = 12)	12 (100%)	4 (36%)	7 (64%)	4 (33%)	5 (42%)
55-64 (n =19)	19 (100%)	9 (50%)	9 (56%)	9 (47%)	4 (21%)
65-74 (n =15)	15 (100%)	10 (67%)	9 (64%)	7 (47%)	2 (13%)
>75 (n = 12)	12 (100%)	8 (67%)	8 (67%)	5 (42%)	1 (8%)
Language preference					
English (n = 50)	49 (98%)	15 (31%)	18 (40%)	19 (38%)	17 (34%)
Spanish (n = 35)	35 (100%)	11 (31%)	19 (58%)	11 (31%)	14 (37%)

Other (n = 8)	8 (100%)	5 (63%)	5 (63%)	3 (38%)	1 (13%)
Race					
Asian (n = 11)	11 (100%)	5 (50%)	5 (50%)	1 (9%)	1 (9%)
Black (n =20)	20 (100%)	7 (37%)	7 (41%)	7 (35%)	7 (35%)
Latinx (n = 44)	44 (100%)	11 (25%)	22 (52%)	14 (32%)	19 (43%)
White (n = 14)	13 (93%)	5 (36%)	7 (50%)	8 (57%)	3 (21%)
Other (n = 4)	4 (100%)	3 (75%)	1 (25%)	3 (75%)	1 (25%)

^a p < 0.05 for device access

^b p < 0.05 for perception not better than phone

Table 2. Percentage of patients who reported specific barriers to using video visits among those who did not successfully complete a simulated video visit.

Almost 25% of participants that completed a simulated video visit (27/102) received help from a household member. Approximately half of participants with a non-English/Spanish language preference (9/18) or ≥ 55 years old (13/22) who successfully completed a simulated video visit needed help, which was higher than English/Spanish-speakers ($p=0.002$) or participants <55 years old ($p<0.001$), respectively.

DISCUSSION

In this survey of over 200 safety-net clinics patients, we found high interest in video visits, particularly among younger, non-English speaking participants with experience using smartphone applications. There was no difference in interest among racial/ethnic groups. Despite interest, over half of the patients reported at least one barrier to a video visit. Mobile data or Internet access was the most common challenge and reported by approximately one in four participants. Our finding of broad interest in video visits as well as the importance of age and comfort with technology is consistent with prior literature on the acceptance of telemedicine and other health technology such as patient portals.[10–12] These findings suggest that device or data barriers may drive differences in health technology uptake among diverse patients more than lack of patient interest.

The majority of our safety-net patients were interested in video visits regardless of language, race/ethnicity, age, or engagement with patient portals. No prior studies have documented interest or barriers to video visits in a diverse, multi-lingual safety-net population. Surprisingly, we found English speakers were less interested in video visits, possibly representing concerns about privacy among English speakers, as documented in prior studies.[13,14] Alternatively, non-English speakers may perceive language barriers as easier to overcome with visual cues, consistent with literature showing better communication outcomes with video interpreters over phone interpreters.[15] Future studies should explicitly investigate both privacy concerns and patient understanding after video versus audio-only telemedicine visits for patients with communication challenges, such as patients with limited English proficiency or health literacy.

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Despite the higher rates of barriers, nearly half of participants ≥ 65 years old reported interest in video visits. The greater prevalence of barriers among older patients in this study supports work documenting a digital divide in older adults, specifically with regard to device access and digital literacy.[6,12,16,17] Therefore, it is crucial to support efforts to teach older individuals (and others with lower digital literacy) about how to access video visits.[7] Without system workflows or payor incentives to provide support to patients, equity in telemedicine access will be impossible; in our work, two-thirds of calls lasted < 5 minutes, suggesting the feasibility of targeted support to patients who need it.

Despite only surveying urban residents, access to data/Internet was a barrier reported by one-quarter of all participants and across all sociodemographic traits. Without improved, low-cost access to data/Internet necessary for high-quality video communication, video visits will be inaccessible for many safety-net patients. This finding is consistent with literature that broadband access is associated with patient portal use.[18,19] Given the growing importance of telemedicine and patient portals, our findings reinforce the need to advocate for digital infrastructure to ensure equitable telemedicine and healthcare access.[6,7] Our study also highlights that digital access is a concern not only in rural populations but also for the 35 million Americans who live in poverty in urban areas.

This study is limited as a single-site survey of patient self-reported barriers. We also only surveyed patients scheduled for a visit and who answered the phone; therefore, our sample may not be fully representative of an entire safety-net population. Nonetheless, given the focus on a safety-net population with significant racial/ethnic and linguistic diversity, it provides important insights for telemedicine implementation, particularly among groups that have previously experienced inequities in health outcomes.

Future studies should explore longer-term uptake or sustained use of telemedicine among a broad population of safety-net patients to understand the generalizability of these findings, as well as whether specific interventions to address telemedicine uptake mitigate barriers that emerged in this study (cost, Internet access, digital literacy).[10,11] It will also be important to explore if there are patient, organizational, or environmental factors that may be either unique or more prominent in safety-net or lower socioeconomic status patients.[11] This may help determine if current practices for patient-centered telemedicine (e.g., patient training and education, mitigating privacy concerns) also adequately facilitate telemedicine access for diverse patients.

CONCLUSION

Diverse low-income patients are interested in video visits, and many are able to complete simulated video visits. However, a large portion of safety-net patients face challenges to

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3 successfully accessing video visits. To help ensure equity in telemedicine access, policies and
4 infrastructure development are needed to address gaps in access to broadband or mobile data.
5 Additionally, health systems and clinicians should develop plans to provide technical assistance
6 to older patients and those with limited digital literacy to help ensure these patients can
7 successfully access video visits. Deliberate implementation and advocacy are crucial to ensure
8 clinicians equitably address patients' interest in telemedicine video visits.
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COMPETING INTERESTS STATEMENT:

The authors have no competing interests to declare.

CONTRIBUTORSHIP STATEMENT:

EK, TD, MN, and CL made contributions to the design, analysis, and interpretation of the data. BB and OM acquired and interpreted the data for this work. GS contributed to analysis and interpretation of the data for this work. All authors revised the manuscript critically for important intellectual content and approved the final version to be published.

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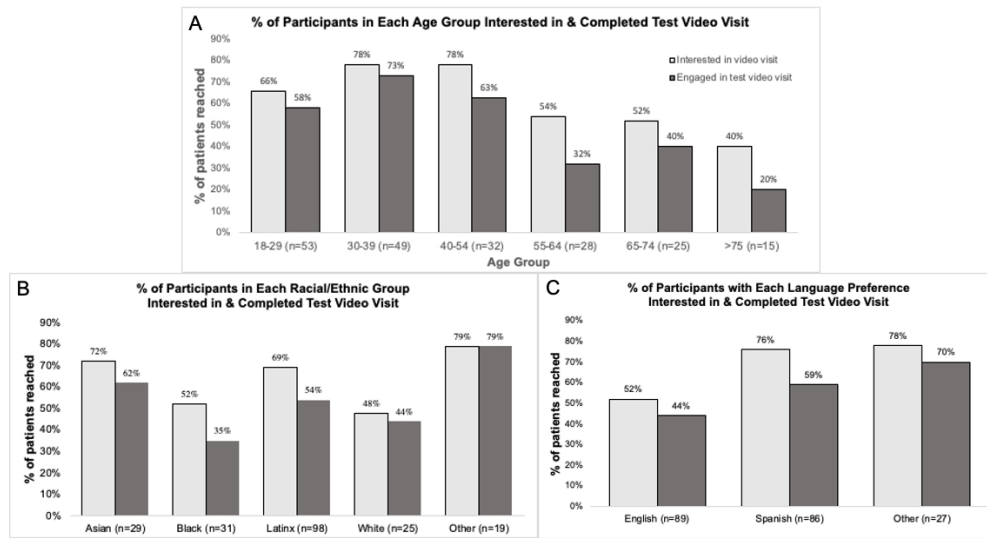
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3 **FIGURE LEGEND:**
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5 **Figure 1 Title.** Patient interest in video visits and completion of test video visit by (A) age (B)
6 race/ethnicity and (C) preferred language
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9 **Figure 1 Legend.** Percentage of patients reached in each (a) age range, (b) racial/ethnic group,
10 or (c) language preference group that expressed interest in having a video visit and who
11 successfully completed a simulated visit by downloading and practicing with software.
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Patient interest in video visits and completion of test video visit by (A) age (B) race/ethnicity and (C) preferred language

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Online-Only Supplement**eMethods 1:** Call script**eMethods 2.** Survey**eTable 1:** Association between technology experience and interest in video visits and completion of simulated video visit**eTable 2:** Multivariable analysis of interest in video visits**eTable 3:** Barriers reported to video visits in all participants

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eMethods 1. Call script

“Hello, may I speak with _____? *(When patient on phone):* My name is _____ and I’m calling from the [CLINIC] at San Francisco General Hospital. **(Confirm identity through DOB and home address or other appropriate identifying information).** “[As you know], due to the current situation with the Coronavirus, your appointment on [DATE] was converted into a telephone visit.

I am calling to see if you would be interested in the option to do a video visit instead of a telephone visit for that appointment. The process is simple and secure and would allow you and your provider to see each other during your visit. We use an app called Zoom. To use Zoom, you just need to have WiFi access for your smartphone or iPad/tablet, or internet service on a laptop or computer that has a webcam. *If they don’t have access to reliable WiFi or a laptop/computer with webcam connected with an ethernet cable, they will not be able to do video visits.)*

- Is a video visit something you are interested in? NO à ask why
 - Do you have a phone with internet, tablet, or computer with a webcam? à to NO below
 - Do you have WiFi or a cell phone plan with data? à to NO below
- **If NO:**

“OK, no problem. We’ll keep the appointment as a telephone visit. ***Is there a reason why you aren’t interested in video visits at this time?***”

 - Remind them of their (telephone) appointment time
 - Confirm that this is the best number to reach them **[END CALL]**
 - **If YES:**

“Great! Have you used smartphone apps before? Have you ever used Zoom before?”

 - **If YES:** “Great. Then you’re already a step ahead! The way we use it here, you have to enter in a meeting ID. Have you used zoom this way before?”
 - **[IF NO JUMP TO: ZOOM TRIAL INSTRUCTIONS]**
 - **[IF YES JUMP TO: FINAL INSTRUCTIONS]**
 -
 - **If NO:** “OK, no problem. I can help you get all set up with Zoom. It should take about 5-10 minutes. Do you have a moment to do that now? *(Note: It’s OK if the patient has a family member help them through this process, if they consent/request.)*”
 - **If NO:**

“OK, no problem. Is there another time that might work better?”

[Suggest days/times per your availability, reschedule time to call them back.]

Note: If the patient is comfortable with technology and feels they could follow instructions from a website, you can guide them to the VIDEO VISITS page for patients:

“I can also direct you to a website that will guide you through downloading and setting up Zoom if you feel comfortable doing that on your own.”

[Share the URL over the phone: **sfhealthnetwork.org/videovisits**”. (Complete URL for emailing is at the top of this script.). You will still need to provide the patient with the providers **PMI#** and may want to ask the patient to call back to confirm that they were able to get set up before the appointment. **[END CALL]**
 - **If YES:** “Great. What kind of device do you plan to use for your video visit (smartphone, tablet/iPad, laptop/computer with webcam)?”**[FOLLOW ZOOM SET-UP INSTRUCTIONS BELOW for device indicated.]**

1. ZOOM SET-UP

- **SMARTPHONE/TABLET/IPAD SETUP** *(This is when you should have your “New Meeting” open and YOUR PMI# (not the provider’s)).*
 - I just want to confirm that you will have Wifi access at home or where you will be for your video visit
 - *(If setting up on smartphone while patient is talking on that phone):* Can you put turn on your speakerphone so you can hear me while I walk you through this?
 - Do you know how to open the App store/Google play (for Android)?
 - Great. Go to the app store/Google play, and search for “Zoom” app. It should come up as “Zoom Cloud Meetings.” Click on it and select “Install.” Let me know when it finishes downloading.

- **ZOOM SMARTPHONE/TABLET TRIAL INSTRUCTIONS**

- Now open the app. You should see a white page with some options. Do you see the a button that says “Join?” Click that button.
- **Enter the following meeting ID:** _____ *(give YOUR personal meeting ID; the one you are using on the “New Meeting” you have open), then click “Join Meeting.”*
 - *(Note: Under “Join Options,” the patient should NOT select “Don’t connect to audio” or “Turn off My Video” – the buttons should be white, not blue.)*
- Enter your name under “Screen Name.”
- Click “Join.”
- Click “Join with Video.”
- Allow the phone to access your camera
- You should see a message that says something like “**Please wait, the meeting host will let you in soon.**” Do you see that?
- This is what you’ll see on the day of your visit. I’m going to let you into the visit now. *(Admit the patient into the visit).* Can you see that you have joined my meeting?
- Click on “Call using internet Audio”
- You should be able to see me and hear me. Is it working for you?

IF IT WORKS: SKIP TO FINAL INSTRUCTIONS BELOW

If not, help troubleshoot possible issues.

If audio/video isn’t working, walk them through testing their computer audio and make sure their “join with video” and “join with computer audio” buttons were properly selected. They may need to exit and re-enter the meeting.

- **COMPUTER SETUP**

Guide the patient with these steps:

- Are you by your computer now?
- Open up a browser window and search for “Zoom”
- You should see an option to “Download Zoom.” Click that.
- You should see “Zoom Client for Meetings” with a blue “Download” button.
- Click the blue “Download” button
- When it finishes downloading, open it.
- Follow the instructions to install it. Let me know when it finishes.

- **ZOOM COMPUTER TRIAL INSTRUCTIONS**

- When it’s done installing, open the app.
- Click “Join meeting”
- **Enter the following meeting ID:** _____ **(give your personal meeting ID)**
- **Enter your name where says “Your Name”**
- Click Join
- *Click “Join with Video”*
- *Click “Join with computer audio”*

- You should see a message that says something like “Please wait, the meeting host will let you in soon.” Do you see that?
- This is what you’ll see on the day of your visit. I’m going to let you into the visit now. (*Admit the patient into the visit*). Can you see that you have joined my meeting?
- It might take a second, but you should be able to see me and hear me. Is it working for you?

IF IT WORKS: SKIP TO FINAL INSTRUCTIONS BELOW

If not, help troubleshoot possible issues.

If audio/video isn’t working, walk them through testing their computer audio and make sure their “join with video” and “join with computer audio” buttons were properly selected. They may need to exit and re-enter the meeting.

FINAL INSTRUCTIONS

“Great. I will make a note in your chart that you have downloaded and tested the Zoom app and are ready for video visits. **(for 5M patients, stop here)**

ONLY FOR RFPC/1M patients:

I’m going to give you a 10-digit numb(er that you will need to enter the video visit with [PROVIDER]. Are you ready to write this down? *give patient the provider’s PMI and ask them to repeat it back to you to confirm.*

On the day of your appointment, please open Zoom from your [device], click “**Join**” then enter the meeting ID I just gave you. Please do this a few minutes before your appointment time so that you will be ready when your provider starts the visit. You will be in a virtual waiting room until the provider admits you. Be sure that your audio and video are turned ON.

Do you have any questions for me?”

Answer any questions the patient has. [END CALL]

Document in patient’s chart whether they consented to or declined video visits and that they consented to have you help them set up Zoom (if applicable)

eMethods 2. Survey

Survey questions filled out caller to record patient responses:

Tracking patient phone calls:

1. Phone number called:
2. Date of appointment:
3. Time of appointment:
4. Provider they are scheduled with:

Survey questions for patients:

5. Were you able to reach the patient to offer a video visit?
 - a. Yes
 - b. No
6. Was the patient open to doing a video visit?
 - a. Yes
 - b. No
7. Do they have access to a smartphone/tablet/computer?
 - a. Yes
 - b. No
8. Do they have adequate data/wifi to complete video visits?
 - a. Yes
 - b. No
9. Do they have experience using smartphone apps?
 - a. Yes
 - b. No
10. Have they ever used Zoom before?
11. What challenges or barriers to conducting video visits did they patient have?
 - a. None
 - b. No device
 - c. Inadequate data
 - d. Lack of WiFi/broadband access
 - e. Hesitant to adopt new technology
 - f. Did not want clinician/provider to see location
 - g. No safe/private location to conduct video visits
 - h. Unable to figure out how to download software
 - i. Did not think it added value over phone (ie phone visit ok)
 - j. No time to figure it out
 - k. Other:
12. Did they require help from anyone during this process (child, friend, family member)

Patient demographics:

13. Age
14. Patient language preference
 - a. English
 - b. Spanish
 - c. Cantonese
 - d. Mandarin
 - e. Vietnamese
 - f. Tagalog
 - g. Russian
 - h. Arabic
 - i. Other:
15. Was a phone interpreter used?
 - a. Yes

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3 b. No, language concordant
4 16. Sex:
5 a. Male
6 b. Female
7 17. Patient race:
8 a. American Indian or Alaska Native
9 b. Asian
10 c. Black or African American
11 d. Hispanic or Latino
12 e. Native Hawaiian or other Pacific Islander
13 f. White
14 g. Other
15 18. What clinic are they scheduled for
16 a. Primary care
17 b. Women's health
18 19. Has the patient seen this provider before?
19 a. Yes
20 b. No
21 20. Was a personal meeting ID number given?
22 a. Yes
23 b. No
24 21. Is the patient enrolled in MyChart?
25 a. Yes
26 b. No
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eTable 1: Association between technology experience and interest in video visits and completion of simulated video visit

Characteristic	Respondents, No (%)		
	All participants (N = 202)	Interested in video visit (N=132)	Completed test video visit (N=109)
Enrolled in patient portal ^a	42 (20.8%)	31 (23.5%)	31 (28.4%)
Smartphone application use ^{a, b}	149 (73.8%)	112 (84.8%)	102 (91.1%)

^a p <0.05 for patients interested in video

^b p <0.05 for patients that completed test video visit

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eTable 2: Multivariable analysis of interest in video visits (n=199)

Variable	Odds Ratio	95% Confidence Interval	p-value
Age	1.00	0.98, 1.03	0.70
Preferred Language			
English	reference	reference	
Spanish	3.40	1.64, 7.06	0.001
Other	4.85	1.59, 14.80	0.006
Use of Smartphone Applications	7.18	2.85, 18.11	<0.001

Confidential: For Review Only

eTable 3: Barriers reported to video visits in all participants (N = 202)

	At least one barrier	No Device	Data/Internet issues	Hesitant to use technology	Not better than phone
Total (n, %)	112 (55.4%)	32 (15.8%)	50 (24.8%)	36 (17.8%)	33 (16.3%)
Age, y, ^{a,b,c,d}					
18-29 (n = 53)	31 (59%)	1 (2%)	12 (23%)	7 (13%)	12 (23%)
30-39 (n = 49)	15 (31%)	0	3 (6%)	4 (8%)	7 (14%)
40-54 (n = 32)	15 (47%)	4 (11%)	9 (30%)	4 (13%)	5 (16%)
55-64 (n = 28)	22 (79%)	9 (31%)	9 (36%)	9 (32%)	5 (18%)
65-74 (n = 25)	16 (64%)	9 (35%)	9 (38%)	7 (28%)	3 (12%)
>75 (n = 15)	13 (87%)	8 (53%)	8 (57%)	5 (33%)	1 (7%)
Preferred language					
English (n = 89)	55 (63%)	14 (15%)	20 (24%)	20 (23%)	17 (14%)
Spanish (n = 86)	43 (50%)	12 (13%)	25 (30%)	13 (15%)	13 (15%)
Other (n = 27)	14 (52%)	5 (19%)	5 (19%)	3 (11%)	3 (11%)
Race/ethnicity					
Asian (n = 29)	17 (59%)	5 (17%)	5 (19%)	1 (3%)	3 (10%)
Black (n = 31)	23 (74%)	6 (18%)	8 (29%)	8 (26%)	7 (23%)
Latinx (n = 98)	52 (53%)	12 (12%)	28 (30%)	16 (16%)	19 (19%)
White (n = 25)	14 (56%)	5 (20%)	7 (28%)	8 (32%)	3 (12%)
Other (n = 19)	6 (32%)	3 (16%)	2 (11%)	3 (16%)	1 (5%)

^a p < 0.05 for at least one barrier^b p < 0.05 for device access^c p < 0.05 for data/Internet issues^d p < 0.05 for hesitancy about technology

eTable 3. Percentage of patients in each group reporting barriers to using video visits for telemedicine. Each patient who was not interested in video visits or able to successfully complete a simulated video visit was asked why, and each patient reached was asked specifically about access to a smart device and data/Internet regardless of interest.


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Patient Interest in and Barriers to Telemedicine Video Visits in a Multi-lingual Urban Safety-Net System


Khoong, Butler, Mesina, Su, DeFries, Nijagal, Lyles; JAMIA 2020

Conclusions: Safety-net patients are interested in video visits and able to successfully complete test visits. Internet/data access is a common barrier and may impact equitable telemedicine access


Cross-sectional phone survey
of 202 patients scheduled for phone-only visits in safety-net system







87.6% racial minorities



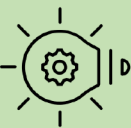
55.9% non-English speakers



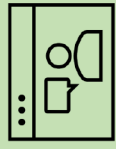
Asked each patient about:

Interest in video 	Device access 
Wi-Fi access 	Barriers to video 

65% (n=132) interested in video visit over phone-only



54% (n=109) were able to complete a test video visit



>50% (n=112) reported barriers to video visits


Most common:

- Inadequate data/Wi-Fi
- Hesitancy about technology
- No access to device



Factors associated with interest in video

Younger age (<55)	73% interested in video
Non-English language preference	76% interested in video
Prior smartphone app usage	84.8% interested in video

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Department of Medicine

Resources for telehealth in safety-net settings
<https://cwp.ucsf.edu/telehealth>
 @ucsfcvp