Silver Linings Around the Increased Use of Telehealth After the Emergence of COVID-19: Perspectives From Primary Care Physicians

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Abstract

Introduction/Objectives: With the emergence of COVID-19, the transition from in-person care to widespread use of telehealth raised many well-described challenges for primary care providers (PCP). The purpose of this study was to improve understanding of how this increased use of telehealth impacted PCPs in positive ways, and specifically focus on any "silver linings" of using telehealth. Methods: We interviewed PCPs working at a large Midwestern academic medical center between June and July 2020 and asked for perspectives about the use of telehealth during the pandemic. Verbatim transcripts were coded and analyzed using deductive dominant thematic analysis that allowed for categorization of data and identification of emergent themes. Results: PCPs noted 3 main benefits of using telehealth: (1) demonstrated remote care was feasible, (2) patients expressed gratitude; and (3) payers fully reimbursed for telehealth visits. PCPs also described "silver linings" they perceived for patients: (1) easier access to care, (2) more convenient follow-up care, and (3) ability to get quick specialty referrals. Conclusions: Study participants offered encouraging feedback regarding the potential for telehealth to offer a convenient and patient-centric alternative to in-person care. As a healthcare delivery mode, telehealth can remove personal and social barriers to care for many patients, but reimbursement parity and more evidence is needed to inform best practices for ongoing telehealth use in primary care. With the continuing use of telehealth, it will be important to monitor health outcomes as well as consider how these modalities may need to be adapted to mitigate potential care disparities.

Keywords

primary care, qualitative, telehealth, remote care, COVID-19

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Introduction

The use of telehealth expanded rapidly in primary care as providers pivoted their work to address patient care needs due to the emergence of Coronavirus Disease 2019 (COVID-19).^{1,2} Defined as "the use of electronic information and communication technologies to provide and support healthcare," telehealth has enabled the continued delivery of important clinical services while keeping aligned with public health guidance to minimize disease transmission of the highly contagious COVID-19. Of note, the surge in telehealth visits that started at the beginning of the pandemic has persisted, with current usage in primary care still 35 times higher than before the start of the

pandemic, and as much as 38 times greater in other medical specialties.⁴

Although the increased availability of telehealth visits has expanded access to care for many patients and has helped improve patient-provider communication,^{5,6} this rapid transition from face-to-face to virtual care delivery has also introduced major challenges for primary care

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providers (PCPs) such as workflow disruptions, staffing changes, and difficulties adapting to the use of new technologies.⁷ At the same time, these challenges have been linked to lower work engagement, increased risks for physician burnout, and compromised patient care.^{8,9}

While many studies have examined the increased use of telehealth since the emergence of COVID-19, much of this prior work has focused on the challenges and negative impacts of this change. In this analysis, we considered PCPs' perspectives about the positive aspects, or "silver linings," of this transition.

Methods

Study Sample and Data Collection

As previously described,¹⁰ the study sample included 20 PCPs from the Department of Family and Community Medicine and the Division of General Internal Medicine and Geriatrics who were affiliated with a large Midwestern academic medical center (AMC). Between June and July 2020, we conducted one-on-one video interviews with PCPs. Following a semi-structured interview guide, we asked PCPs about the early impacts of COVID-19 on their work, including what they perceived were benefits of delivering primary care via telehealth. Interviews lasted an average of 35 min and were audio-recorded, transcribed verbatim, and de-identified prior to analysis. All interviewees provided verbal informed consent prior to their participation. The study was approved by the authors' Institutional Review Board.

Data Analysis

We analyzed interview transcripts using a deductive dominant thematic approach to allow for data to be categorized based on general themes derived from the interview guide, as well as to allow for identification of emergent themes. This approach also enabled us to compare themes across interviews and to characterize the ways in which PCPs described any "silver linings" that accompanied their transitions to using telehealth for primary care provision.

Using this approach, 2 members of the research team first reviewed 2 of the transcripts and developed an initial coding dictionary based on the questions asked in the semi-structured interview guide and additional topics that emerged during interviews. The codebook was then refined, and the remaining transcripts were coded. Frequent meetings of the research team ensured consistency of coding across transcripts. For the results we present here, we focused on the "benefits of telehealth" code. All data analysis processes were supported by the ATLAS.ti (version 8.4.4) qualitative data analysis software.

Table I. Interviewee Characteristics.

Characteristic	N (%)
Practice affiliation	
Department of Family and Community Medicine	13 (65)
Division of General Internal Medicine and Geriatrics	7 (35)
Years in clinical practice	
0-5	3 (15)
6-15	7 (35)
15+	10 (50)
Gender	
Female	11 (55)
Male	9 (45)

Results

Study Participants

Characteristics of the 20 PCPs who participated in our study are presented in Table 1. On average, interviewees had 16 years of primary care experience (range=3-41 years).

Perceived "Silver Linings" for Primary Care Physicians

Across interviews, PCPs' comments about the rapid increase in use of telehealth because of the emergence of COVID-19 were largely positive, and they specifically mentioned 3 "silver linings" for themselves that they associated with this experience: (1) remote care delivery was feasible; (2) patients expressed gratitude; and (3) payers adapted insurance coverage to fully reimburse for telehealth. We describe these themes in further detail next, and present additional verbatim quotations in Table 2.

First, interviewees emphasized that their experience during the pandemic convinced them and others that delivering medical care remotely was feasible. A physician noted, "As much as patients demand and want to be seen in person, as much as we need to see them in person, just as much, if not more of the time, at least in what work I do as a family medicine physician [it] can be done virtually." This perspective about feasibility was particularly evident when interviewees described providing care for existing patients. As another physician explained, "If you have a patient who you see on a regular basis and you're adjusting medications or things like that, I think phone check in. I think trying to help them understand what is safe and reasonable to be managed via telephone versus what is to be managed with a face-to-face, even if it's be [sic] a video. Because I think a lot [of] chronic care can be provided via video."

PCPs also commented about how it was a "silver lining" to hear and see how grateful their patients were to receive

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Table 2. "Silver Linings" of Telehealth for Primary Care Physicians.

"Silver Linings"

Perspectives of primary care providers

Demonstrated remote care delivery was feasible

We are now able to do telemedicine, and telling the honest truth, I would say that over 60% of the cases I see in the clinic, can be seen via telemedicine. I really honestly don't feel that I need to see most of these patients in person. There are things that require for me to see them in person. But in the end, I really think that I can handle a lot of these cases via telemedicine. (I)

- I think that easily a third, maybe a half of primary care from my perspective can be done through Telehealth. It's been great. I mean certainly there's types of visits, follow-up of chronic disease, maybe other every other visit or check in visit, support and counseling, mental health problems, one problem issues often can be seen and addressed. Yeah feel like it's been really good for that and I like it and hope it stays. (N)
- I think for chronic care, virtual health is good. It's the acute care sometimes that you need to sometimes see them in person. There are certain aspects where you have to see them once a year to exam their feet, let's say a patient with diabetes needs to have their foot exam once a year, so there are certain things you have to do, but I think a lot of it can be covered by virtual health now. (R)

Patients expressed gratitude

They [patients] almost felt like more grateful. . .when you would you call and be like, hey, I'm just checking in. Oh my gosh, thanks so much for calling, even though they had an appointment. . .there was a lot of gratitude from patients to say, you know, thanks for transitioning to make me, you know not have to come into the office, that sort of thing. It was just like thank you so much for calling me, this is my problem. Can you send me this refill? So can you do this? (H)

I feel like they're grateful to have a connection [with me]. (N)

I've had some say they really like this, just for the reasons I said, they didn't have to drive to the office and they appreciated us reaching out to them through this and they like the modality. (R)

Payers adapted insurance coverage to fully reimburse for telehealth So, in light of covid-19 pandemic, Medicaid and Medicare essentially said, hey, we'll pay for telemedicine and then all the other insurance for companies essentially said we'll pay for telemedicine. (F)

And then I just think, obviously, like the payer, the reimbursement for telehealth has fortunately been handled in a way that we are able to do it and people don't have to worry about this is a one-off and it's some charge I'm going to get I'm not going to understand. (M)

So now it's kind of like pretty much everybody [insurance companies] covers it [telehealth]. So, I think you know, that's the silver lining that I see of this whole thing is ramping up the telehealth, because even when we get back to whatever normal is in the past two to five years, I think it's going to be important way for patients to have access to care (S)

virtual care during the pandemic. One physician reflected, "I think patients generally have been very thankful that we're able to offer any kind of care in any modality through this whole thing. And, I feel like a lot of our patients worry a lot about our safety and making sure that we're healthy. Some of them have expressed a lot of relief that I can still see them." Another physician echoed this sentiment, noting, "Everyone's been grateful I'm saying and some had actual needs that they weren't addressing or didn't think to address."

Third, interviewees reported being pleased that the rapid increase in the use of telehealth in response to the COVID-19 pandemic had resulted in improved insurance coverage for virtual visits. As 1 physician explained: "I think that actually forcing payers to come up with solutions that kind of adapt to our real world and our technologies probably wouldn't have happened without the pandemic. And so as a result like we have these novel tools and we are more able to use them. I think that the telehealth visits are our silver linings because we have had all these tools available to us but we didn't use them because there wasn't an impetus and

then we didn't use them because there was no billing strategy." Another PCP similarly commented, "One thing that's good is like at least temporarily, Medicare and other insurers are covering video visits better now. So, my hope is that they'll just continue to do that and recognize that it's really a valuable tool for patients and providers."

Perceived "Silver Linings" for Patients

PCPs also provided examples of the "silver linings" they perceived patients experienced that resulted from the delivery of care via telehealth: (1) it was easier for patients with certain medical conditions to receive care; (2) it provided patients with a convenient follow-up care modality; and (3) it enabled patients to get quick specialty referrals and visits. Below we describe these themes in greater detail, and additional verbatim quotations are presented in Table 3.

Physicians' responses suggested they perceived a benefit for patients around the ability for patients with certain medical conditions to receive care via telehealth instead of needing to come in person to the office. As 1 physician

Table 3. Physicians' Perceptions of "Silver Linings" of Telehealth for Primary Care Patients.

"Silver Linings" for patients Perspectives of primary care providers Easier for patients I take care of a large population of patients with autism, and many of them really struggle to come into with certain medical the office due to environmental challenges or changes to structure in the normal day or whatever it conditions to receive may be. And I've actually found many like, I've had many people say, well this is so great, can we do care this all the time? You know, just because it takes away that extra burden. (G) They may be more comfortable when they're sitting at home versus in your clinic and talking to you about their mental disorders. You know, they're in a more comfortable environment. (I) I do a lot of mental health and so those visits, the fact that those visits increased during this time was I think helpful for a lot of people because they're like hey, you know, I need to talk to somebody about this, but I don't have, you know, I don't want to go into the office, especially if I'm super nervous. So I think there's been good feedback for those types of visits especially. (S) Provided patients with a I think it's pushed us to realize that there's opportunity for telemedicine more than we're using, and convenient follow-up that it's very convenient for patients. My no-show rate for telemedicine is really, really, really, really care modality low. You know, because you know, they're there. Everyone's got their phone on them. (G) I think some patients really find it to be very convenient, Happy with it. They probably have been reaching out to have visits more often. (K) Yeah, I've had people say things like, if I'd known I could have been seeing you like this all the time, I would have done it instead of bringing my baby and going all around. Just the convenience of it has been a major thing that people said. I've asked people how they'd like their next visit to be, and I don't think I've had a single person say that they want it to be in person. (M) Enabled patients to get Now when I see a patient, they can still have a counseling session with my social worker over quick specialty referrals telehealth next week versus you know, if they had transportation issues, maybe they were not might and visits not have been seen for several weeks. (C) I've actually had people being able to get in with counselors or actually specialists and other things, so if we're talking about like an ENT (ear, nose, and throat) or an allergist visit, they've actually been able to get in quicker because all of those providers have openings in their telehealth schedule. (S) If I have like a clinical question, that's pretty straightforward, then I can do an E-consult. Patient doesn't have to go in for an appointment and I get the answer typically within the day. And if the patient needs to be seen, then the dermatologist says, oh, I gotta see this one and routes it to their staff and they get them seen within a day or two usually. It's really amazing. (T)

reflected, this could be perceived as a "silver lining" for a number of different types of patients:

Patients who, you know, let's say they simply have medical comorbidities that make it much more challenging for them to come to the clinic. So, we're talking about patients with you know, agoraphobia, patients with PTSD [Posttraumatic stress disorder], patients with depression, whatever the case maybe. Or even patients who are you know, morbidly obese where just getting up and out of bed is too painful for them. Now we can at least deliver some care to those patients.

Another physician described additional types of patients who seemed to benefit: "I think it has improved access for some people, mobility issues, folks that just like really are, can't stand going to the doctor's office, folks that live really far away."

A second "silver lining" PCPs perceived for patients involved the convenience and flexibility of telehealth and how it appeared to improve patients' abilities to adhere to follow-up appointment schedules. One physician shared, "Some patients are more likely. . . so if I'm doing some medication changes and I say hey, you know, I'd like to talk to you in two weeks. Maybe I hear from them maybe not.

With televideo, they're like, 'Sure, I can do it.' I can do a 5- to 10-minute quick call to just review and make sure everything is okay." Another physician explained, "Patients are more likely to actually make the appointment, and more frequently, because they don't waste an hour of their time traveling to wherever and taking the time to find parking, making arrangements to have babysitters." A third PCP reflected how this flexibility seemed appreciated by patients: "Patients are like getting a little bit more choice in how they can communicate. Like being able to say to a patient, 'Do you want to see me? I want to see you back in three months. You want to do it by video or phone, or do you want to come to the office?' Like that's a choice we've never given them. The fact that they feel like they have some say in how they experience their care."

Finally, PCPs suggested that telehealth provided a "silver lining" for patients when it enabled quick referrals for specialty care, timely consults, and less time to get appointments. One physician explained, "Patients love it [fast e-consults]. So, I'm talking to a patient and I would say hey, we need an appointment for this. They don't have to wait for six months for a dermatologist to see them or a nephrologist. I'll just say e-consult this case within two days. We are

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probably going to get an answer actually 24 hours, not even two days." Another physician reflected: "Doing a quick telemedicine visit is now more accepted from everybody. If I need to squeeze someone in, adding a video visit is easier."

Discussion

Our study of the experiences of PCPs using telehealth during the first 4 months of the COVID-19 pandemic (i.e., when restrictions on in-person visits were in effect and then lifted), suggested that physicians perceived multiple "silver linings" related to the increased use of telehealth. Specifically, they highlighted benefits for their own practices such as learning that telehealth was feasible, hearing appreciation from their patients for telehealth visits, and receiving appropriate reimbursement for those visits. They also perceived benefits for their patients and reported that telehealth appeared to enhance care access for patients with chronic conditions and disabilities, made it easier for patients to have virtual follow-up visits with care team members, and enabled expedited patient referrals to specialists. With respect to the broader literature on telehealth expansion during the pandemic, 11 our findings document the unforeseen advantages of utilizing telehealth in routine primary care. Further, our study answers the call for more research examining the contextual factors surrounding telehealth applications. 12 Specifically, our qualitative findings demonstrate how the rapid transition to telehealth enabled PCPs to engage with their patients to address their clinical and non-clinical needs during the pandemic. However, despite these benefits, adaptations to existing workflows are likely necessary to sustain telehealth as an equitable primary care modality. 13,14

Given the time frame of our study, telehealth usage was rapidly increasing, and during the declared public health emergency, government agencies and payers allowed video and audio-only visits to be covered at equal parity to inperson visits. 15,16 PCPs in our study indicated that reimbursement parity was important in promoting telehealth use, similar to what has been reported in previous research, ¹⁷ and also noted that sustaining this parity could allow for the continued use of telehealth modalities. PCPs commented that they were hopeful that payers would continue with this reimbursement approach so that telehealth options could remain available to patients who preferred to receive care remotely as well as supporting ongoing efforts to reduce the spread of COVID-19. Furthermore, establishing reimbursement mechanisms that allow for video and audio-only visit parity both now and in the future can help to address certain aspects of the "digital divide" 13,17,18 that exists between patients who do and do not have access to broadband internet.

Our findings also suggest that telehealth provides a convenient alternative to in-person visits, consistent with the

results of other studies.¹⁹ Previously identified clinical²⁰ and non-clinical factors that can prevent patients from adhering to in-person visits such as not having transportation, childcare, or the ability to take time off from work²¹⁻²³ were identified by our study participants as having been reduced by the increased availability of telehealth after the emergence of COVID-19. To the extent that telehealth may be able to address some of these personal and social barriers to care, PCPs can reasonably expect to see decreases in noshow rates and in patient cancelations of scheduled appointments. 24,25 Moreover, PCPs in our study indicated they were accepting of telehealth and would consider using virtual modalities to provide ongoing follow-up care for patients who either preferred to use telehealth or had conditions that limited their ability to have an in-person visit. This is consistent with previous studies that found physicians and patients had favorable attitudes toward telehealth, ²⁶ and that patients were satisfied with the quality of telehealth they received.27

Our research may also have important implications for designing telehealth options in primary care that better support patient-centered care. By removing some of the burdens to accessing in-person care (e.g., transportation), telehealth reportedly enabled PCPs in our study to simplify follow-up care for patients who did not require in-person visits. As the use of telehealth continues, more research will be necessary to understand how PCPs and staff members can effectively integrate telehealth with in-person visits and further characterize the workflows and processes that can facilitate a safe and patient-centered care experience that involves this care modality.²⁸ For instance, patients may need to better understand how sensitive information can be securely shared with their providers, as well as any potential risks of using video platforms to receive primary care. It will also be important to understand explicitly how telehealth can expedite e-consults and specialty referrals without compromising patient safety. This information may shed light on the specific needs of those PCPs who will continue to use telehealth to conduct e-consults as well as refer patients needing follow-up care.

These study findings may have important practical implications for PCPs who are currently using or planning to use telehealth both during this COVID-19 pandemic and into the future. Given that the physicians in our study reported positive impacts of their use of telehealth, primary care practices may benefit from conducting hybrid video and in-person visits to reduce barriers to patient follow-up and to accommodate patients' preferences for specific visit modalities. However, future protocols for telehealth use will also need to take into consideration the technology access and capabilities of patients as not all individuals have the option to have a video visit with their doctor.^{29,30} Providers and practices may be able to implement simple screening questions to ensure patients have

access to the technology and connectivity that they need and reduce the inequities that could result. As the pandemic continues, it will clearly be important continue to monitor and study the use and impacts of telehealth as we build evidence about this care modality and its integration into primary care practice.

Limitations

Our study has several limitations. First, this study was conducted at a single healthcare system in which physicians had access to a shared electronic medical record (EMR). It is possible that some of the benefits noted in this study, including feasibly scheduling follow-up visits and specialty care, may not generalize to free-standing primary care clinics that do not share a common EMR with neighboring healthcare organizations nor have existing partnerships with clinical specialties (e.g., oncology). Nonetheless, given our saturation with respect to the themes we present and the consistency of our findings in the context of previous research, we are confident that the results we report can be applied to help facilitate the use of telehealth for both patients and providers. Second, given the challenges of the COVID-19 pandemic, we were unable to conduct interviews with patients to understand their experiences with telehealth and to see if their perspectives corroborated with those reported by the PCPs who participated. Of note, a recent nationally representative survey study of U.S. adults (n=2080) found that two-thirds of respondents preferred at least some video visits in the future,³¹ suggesting our findings may indeed align with patient perspectives. Third, all of the PCPs we interviewed reported very little prior experience with telehealth prior to the emergence of COVID-19. It is possible that the perspectives of providers with previous experience may have contributed additional information and insights to this study. Finally, in the context of the ongoing pandemic, it is likely that physicians' perspectives about telehealth will evolve, highlighting the importance of ongoing research in this area.

Conclusions

We found that in spite of the rapidity with which physicians had to embrace and increase the use of telehealth with the emergence of COVID-19, the impacts of this experience also included "silver linings" for the providers who participated in our study. These PCPs noted benefits to both themselves and their patients that included convenience, responsiveness, and new options for follow-up care. From a policy standpoint, ongoing reimbursement parity for telehealth will be essential to support primary care's capacity to deliver preventive and follow-up services via telehealth and ensure equitable enhance access to this care.

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Research Ethics and Patient Consent

All interviewees provided verbal informed consent prior to their participation. The study was reviewed by the Ohio State University Behavioral Sciences Institutional Review Board and approved as exempt.

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References

- DeVoe JE, Cheng A, Krist A. Regional strategies for academic health centers to support primary care during the COVID-19 pandemic: a plea from the front lines. *JAMA Health Forum*. 2020;1(4):e200423. doi:10.1001/jamahealthforum.2020.0423
- 2. Krist AH, DeVoe JE, Cheng A, Ehrlich T, Jones SM. Redesigning primary care to address the COVID-19 pandemic in the midst of the pandemic. *Ann Fam Med*. 2020;18(4):349-354. doi:10.1370/afm.2557
- Institute of Medicine (US) Committee on Evaluating Clinical Applications of Telemedicine. Telemedicine: A Guide to Assessing Telecommunications in Health Care. Institute of Medicine (US): 1996.
- Alexander GC, Tajanlangit M, Heyward J, Mansour O, Qato DM, Stafford RS. Use and content of primary care officebased vs telemedicine care visits during the COVID-19 pandemic in the US. *JAMA Netw Open*. 2020;3(10):e2021476. doi:10.1001/jamanetworkopen.2020.21476
- Gajarawala SN, Pelkowski JN. Telehealth benefits and barriers. J Nurse Pract. 2021;17(2):218-221.
- Monaghesh E, Hajizadeh A. The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. *BMC Public Health*. 2020;20:1193.
- Srinivasan M, Asch S, Vilendrer S, et al. Qualitative assessment of rapid system transformation to primary care video visits at an academic medical center. *Ann Intern Med*. 2020;173(7):527-535. doi:10.7326/M20-1814%m32628536
- Gomez T, Anaya YB, Shih KJ, Tarn DM. A qualitative study of primary care physicians' experiences with telemedicine during COVID-19. *J Am Board Fam Med*. 2021;34(Supplement): S61-S70. doi:10.3122/jabfm.2021.S1.200517

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9. Kane L. Death by 1000 cuts': medscape national physician burnout & suicide report 2021. *Medscape*. Accessed September 17, 2021. https://www.medscape.com/slideshow/2021-lifestyle-burnout-6013456?faf=1#1

- DePuccio MJ, Gaughan AA, McAlearney AS. Making it work: physicians' perspectives on the rapid transition to telemedicine. *Telemed Rep.* 2021;2(1):135-142.
- Thomas EE, Haydon HM, Mehrotra A, et al. Building on the momentum: sustaining telehealth beyond COVID-19. *J Telemed Telecare*. 2020;2020:1357633X20960638. doi:10.1 177/1357633X20960638
- Bashshur R, Doarn CR, Frenk JM, Kvedar JC, Woolliscroft JO. Telemedicine and the COVID-19 pandemic, lessons for the future. *Telemed E Health*. 2020;26(5):571-573. doi:10.1089/tmj.2020.29040.rb
- Chang JE, Lai AY, Gupta A, Nguyen AM, Berry CA, Shelley DR. Rapid transition to telehealth and the digital divide: implications for primary care access and equity in a post-covid era. *Milbank Q.* 2021;99(2):340-368. doi:10.1111/1468-0009.12509
- Katzow MW, Steinway C, Jan S. Telemedicine and health disparities during COVID-19. *Pediatrics*. 2020;146(2): e20201586. doi:10.1542/peds.2020-1586
- U.S. Department of Health and Human Services. Telehealth: delivering care safely during COVID-19. Accessed December 30, 2020. https://www.hhs.gov/coronavirus/telehealth/index. html
- 16. Hirko KA, Kerver JM, Ford S, et al. Telehealth in response to the COVID-19 pandemic: implications for rural health disparities. *J Am Med Inform Assoc*. 2020;27(11):1816-1818. doi:10.1093/jamia/ocaa156
- 17. Filippi MK, Callen E, Wade A, et al. COVID-19's financial impact on primary care clinicians and practices. *J Am Board Fam Med.* 2021;34(3):489-497. doi:10.3122/jabfm.2021.03.200502
- De Vera K, Challa P, Liu RH, et al. Virtual primary care implementation during COVID-19 in high-income countries: a scoping review. *Telemed E Health*. Published online November 29, 2021. doi:10.1089/tmj.2021.0377
- Polinski JM, Barker T, Gagliano N, Sussman A, Brennan TA, Shrank WH. Patients' satisfaction with and preference for telehealth visits. *J Gen Intern Med.* 2016;31(3):269-275. doi:10.1007/s11606-015-3489-x
- Annaswamy TM, Verduzco-Gutierrez M, Frieden L. Telemedicine barriers and challenges for persons with disabilities: COVID-19 and beyond. *Disabil Health J*. 2020;13(4):100973. doi:10.1016/j.dhjo.2020.100973

Reed ME, Huang J, Parikh R, et al. Patient-provider video telemedicine integrated with clinical care: patient experiences. *Ann Intern Med.* 2019;171(3):222-224. doi:10.7326/M18-3081

- Reed ME, Parikh R, Huang J, Ballard DW, Barr I, Wargon C. Real-time patient–provider video telemedicine integrated with clinical care. *N Engl J Med.* 2018;379(15):1478-1479. doi:10.1056/NEJMc1805746
- Kullgren JT, McLaughlin CG, Mitra N, Armstrong K. Nonfinancial barriers and access to care for U.S. adults. Health Serv Res. 2012;47(1pt2):462-485. doi:10.1111/j.1475-6773.2011.01308.x
- Jeganathan S, Prasannan L, Blitz MJ, Vohra N, Rochelson B, Meirowitz N. Adherence and acceptability of telehealth appointments for high-risk obstetrical patients during the coronavirus disease 2019 pandemic. *Am J Obstet Gynecol MFM*. 2020;2(4):100233. doi:10.1016/j.ajogmf.2020.100233
- 25. Franciosi EB, Tan AJ, Kassamali B, et al. The impact of telehealth implementation on underserved populations and no-show rates by medical specialty during the COVID-19 pandemic. *Telemed J E Health*. 2021;27(8):874-880. doi:10.1089/tmj.2020.0525
- Almathami HKY, Win KT, Vlahu-Gjorgievska E. Barriers and facilitators that influence telemedicine-based, realtime, online consultation at patients' homes: systematic literature review. *J Med Internet Res.* 2020;22(2):e16407. doi:10.2196/16407
- Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: a systematic review and narrative analysis. *BMJ Open*. 2017;7(8):e016242. doi:10.1136/bmjopen-2017-016242
- Dinesen B, Nonnecke B, Lindeman D, et al. Personalized telehealth in the future: a global research agenda. *J Med Internet Res*. 2016;18(3):e53. doi:10.2196/jmir.5257
- 29. Hsueh L, Huang J, Millman AK, et al. Disparities in use of video telemedicine among patients with limited English proficiency during the COVID-19 pandemic. *JAMA Netw Open*. 2021;4(11):e2133129. doi:10.1001/jamanetworkopen. 2021.33129
- Ye S, Kronish I, Fleck E, et al. Telemedicine expansion during the COVID-19 pandemic and the potential for technology-driven disparities. *J Gen Intern Med*. 2021;36(1):256-258. doi:10.1007/s11606-020-06322-y
- Predmore ZS, Roth E, Breslau J, Fischer SH, Uscher-Pines L. Assessment of patient preferences for telehealth in post-COVID-19 pandemic health care. *JAMA Netw Open*. 2021;4(12):e2136405. doi:10.1001/jamanetworkopen. 2021.36405