



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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Contraception

# Telehealth for Contraceptive Services During the COVID-19 Pandemic: Provider Perspectives



Lavanya Rao, MPH<sup>a,\*</sup>, Alison B. Comfort, PhD<sup>a</sup>, S. Sei Dojiri<sup>a</sup>,  
Suzan Goodman, MD, MPH<sup>b</sup>, Jennifer Yarger, PhD<sup>a</sup>, Nishant Shah, MD, MPH<sup>c</sup>,  
Connie Folsie, MPH<sup>a</sup>, Maya Blum, MPH<sup>a</sup>, Julia Hankin<sup>a</sup>, Cynthia C. Harper, PhD<sup>a</sup>

<sup>a</sup> Bixby Center for Global Reproductive Health, Department of Obstetrics, Gynecology & Reproductive Sciences, University of California, San Francisco School of Medicine, San Francisco, California

<sup>b</sup> Department of Family and Community Medicine, University of California, San Francisco School of Medicine, San Francisco, California

<sup>c</sup> Planned Parenthood of Maryland, Inc., Annapolis, Maryland

Article history: Received 25 November 2021; Received in revised form 2 May 2022; Accepted 10 May 2022

## ABSTRACT

**Background:** Telehealth use rapidly increased during the COVID-19 pandemic, including for contraceptive care (e.g., counseling and method provision). This study explored providers' experiences with contraceptive care via telehealth.

**Methods:** We conducted a survey with open-ended responses among contraceptive providers across the United States. The study population included physicians, nurse practitioners, health educators, and other health professionals ( $n = 546$ ). Data were collected from April 10, 2020, to January 29, 2021. We conducted qualitative content analysis of the open-ended responses.

**Results:** Providers highlighted the benefits of telehealth, including continuing access to contraceptive services and accommodating patients who faced challenges attending in-person contraceptive visits. Providers at school-based health centers reported telehealth allowed them to reach young people while schools were closed. However, many providers noted a lack of patient awareness about the availability of telehealth services and disparities in access to technology. Providers felt there was less personal connection in virtual contraceptive counseling, noted challenges with confidentiality, and expressed concern about the inability to provide the full range of contraceptive methods through telehealth alone.

**Conclusions:** The pandemic significantly impacted contraceptive health care delivery. Telehealth has sustained access to contraception in important ways, but has been accompanied by various challenges, including technological access and confidentiality. As hybrid models of care evolve, it is important to assess how telehealth can play a role in providing contraceptive care while addressing its barriers.

© 2022 The Authors. Published by Elsevier Inc. on behalf of Jacobs Institute of Women's Health, George Washington University. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Preliminary Results were presented at the American Public Health Association Meeting, Denver, Colorado, October 24–27, 2021.

The authors declare that there are no conflict of interest.

**Funding Statement:** The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the JPB Foundation (Grant Number 1088) and the National Institutes of Health Eunice Kennedy Shriver National Institute of Child Health and Human Development through a Career Mentored Award (K01HD105521).

\* Correspondence to: Lavanya Rao, MPH, University of California, San Francisco, Mission Hall, Global Health & Clinical Sciences Building, 550 16th St, 3rd Floor, San Francisco, CA 94143-1224. Phone: (415) 502-0331.

E-mail address: [Lavanya.L.Rao@gmail.com](mailto:Lavanya.L.Rao@gmail.com) (L. Rao).

The COVID-19 pandemic dramatically impacted the provision of essential health services across the United States, prompting contraceptive health providers to integrate telehealth into their service offerings (Ferreira-Filho et al., 2020; Hill, Lock, & Anderson, 2021; Nanda, Lebetkin, Steiner, Yacobson, & Dorflinger, 2020; Steenland et al., 2021). Telehealth encompasses a range of activities used to deliver care at a distance, taking place synchronously through telephone and/or video or asynchronously through patient portal messages (Wosik et al., 2020). Before the COVID-19 pandemic, most health systems had low rates of telehealth use for patient care (Harvey, Valenta, Simpson, Lyles, & McElligott, 2019; FAIR Health, 2019). Even

more limited was telehealth for contraceptive care; a 2017 study of 50 million reproductive health claims found that telehealth made up just 0.02% of these claims (Weigel, Frederiksen, Ranji, & Salganicoff, 2019).

Since the beginning of the COVID-19 pandemic, telehealth has been recommended for various contraceptive services, including counseling, eligibility screening for contraceptive methods, and prescription of new methods and refills (Nanda et al., 2020). Telehealth has been found to be useful for continuity of contraceptive care (DeNicola et al., 2020; Thompson, Sonalkar, et al., 2020) and for expanding contraceptive access in remote settings (Sundstrom, DeMaria, Ferrara, Meier, & Billings, 2019; Thompson, Ahrens, et al., 2020; Yoost et al., 2017).

Although telehealth has served as a medium for contraceptive access during the pandemic, its increased use has presented challenges; comprehensive contraceptive care relies heavily on personal one-on-one counseling and in-person service provision (Centers for Disease Control and Prevention, 2016). Despite widespread use, there are few studies examining the realities of providing contraceptive care through telehealth. One recent exploratory U.S. survey found high provider satisfaction with telehealth for contraceptive counseling (Stifani, Avila, & Levi, 2021). A study of adolescent health services in a San Francisco clinic found telehealth to be feasible and acceptable to patients, but with challenges related to confidentiality, quality of care, and disparities in access (Barney, Buckelew, Mesheriakova, & Raymond-Flesch, 2020).

Using qualitative data collected from contraceptive providers across the United States, this study captured providers' voices and personal experiences using telehealth for contraceptive services during the pandemic. As telehealth continues to provide an alternative to in-person visits, perspectives from providers can help clinicians, planners, and researchers uphold the benefits while addressing the challenges related to telehealth provision of contraceptive care.

## Methods

### Study Design

This study was conducted among contraceptive health providers across different practice settings throughout the United States who had participated in a Continuing Medical Education-accredited contraceptive training course conducted by the University of California, San Francisco between 2015 and 2021. To be eligible for the study, participants had to be currently providing contraceptive clinical care, counseling, or education. We administered an online survey to study participants between April 10, 2020, and January 29, 2021. Data collected included quantitative items on sociodemographics, practice setting, and clinic characteristics, and qualitative data on the challenging and rewarding aspects of contraceptive service provision through telehealth.

For this analysis, we included answers from open-ended questions that asked about provider experiences with contraceptive services during the pandemic. The following open-ended questions were asked of study participants: "In what ways has providing telehealth services for contraception been challenging?"; "In what ways has providing telehealth services for contraception been rewarding?"; and "Are there other ways that reproductive services have changed since the start of the COVID-19 pandemic?" In addition, some write-in responses from the "Other (please specify): \_\_\_\_" option for two multiple

choices questions were included in the analysis if the write-in answers mentioned challenges related to telehealth. The two questions were: "The COVID-19 pandemic has made it more difficult for our clinic to offer care to patients experiencing... (check all that apply)" and "The COVID-19 pandemic has made it more difficult for our clinic to offer care to patients that are (check all that apply)," with the answer choices being groups of vulnerable populations and circumstances that could exacerbate the impact of the pandemic (e.g., experiencing homelessness). The open-ended questions were developed for the survey, pilot tested, and then refined according to feedback before official survey launch.

The survey was emailed to 3,497 providers who had participated in the training, and each participant received between three and five reminder emails. There were 907 eligible respondents who consented to participate, and 160 ineligible respondents (15% of total respondents), including retirees, invalid email addresses, and those no longer providing contraceptive care. Among the 2,430 nonrespondents, we assumed that the proportion ineligible was similar (15%;  $n = 365$ ), and removed all ineligible ( $n = 525$ ) from the denominator of 3,497 (American Association for Public Opinion Research, 2016). The overall response rate was 31%. The response rate is likely an underestimate, because some of the providers with inactive email addresses may have retired or may no longer be working under the same email address.

Whereas the parent study consisted of 907 respondents who provided data on how care provision in general had changed during the pandemic (Comfort et al., 2022), the analytical sample for this study consisted of the 546 providers (60% of the 907 respondents) who answered one or more of the open-ended questions specifically about telehealth. Of the respondents, 43% included in the sample responded to all open-ended questions. Participants who completed the survey were entered into a drawing to win one of five \$200 Amazon gift cards. The study was approved by the University of California, San Francisco Institutional Review Board.

### Data Analysis

We conducted a content analysis (Neuendorf, 2017) of the free text responses. The first author conducted inductive coding from the open-ended responses, then a second research team member coded the responses separately using the previously derived code list. The two team members met to resolve any inconsistencies with coding and to synthesize their assessments. A third research team member reviewed their analyses.

We identified key themes in the data and summarized the findings across the themes. The analysis focused both on the frequency of different concepts and the salience of particular responses. Qualitative data were analyzed in Atlas.ti.

## Results

### Descriptive Characteristics of Providers

The study sample ( $N = 546$ ) included physicians (19%), advanced practice clinicians (41%), registered nurses (15%), medical assistants (8%), health educators and social workers (11%), and administrative staff (6%). Providers came from different practice settings, including primary care clinics or public health departments (31%), youth/college clinics or school-based health centers (37%), family planning clinics (21%),

**Table 1**  
Summary Characteristics of Contraceptive Providers ( $n = 546$ )

Characteristics	No.	%
Sex, $n$		
Female	487	(95)
Male	18	(3)
Other/nonbinary	6	(1)
Age (mean $\pm$ SD)	45.5 $\pm$ 11.69	
Race/ethnicity		
White	305	(60)
Black	72	(14)
Latinx	74	(15)
Asian/Pacific Islander	44	(9)
Native American	10	(2)
Other	4	(1)
Provider type		
Physician	100	(19)
Nurse practitioner/CNM/PA	221	(41)
Registered nurse	82	(15)
Medical assistant/other nurse	41	(8)
Health educator/social worker	58	(11)
Manager/director/administrative staff	33	(6)
Practice setting		
Primary care/public health department	169	(31)
Family planning	114	(21)
Youth/school-based health center/college clinic	199	(37)
Abortion	21	(4)
Hospital/other	40	(7)
Title X clinic	179	(47)
Clinic size (contraceptive client volume)		
Smaller clinic (volume <800)	240	(44)
Larger clinic (volume $\geq$ 800)	301	(56)
Region		
Northeast	80	(15)
Midwest	55	(10)
Southeast	140	(26)
West	148	(27)
Southwest	122	(22)
Current status of clinic (at time of survey)		
Closed completely	12	(2)
Closed on-site, but providing telehealth services	98	(18)
Open and providing telehealth services	361	(67)
Open, but not providing telehealth services	70	(13)
Use of telehealth before pandemic		
Use of telehealth for contraceptive services	62	(14)
Increased use of telehealth for contraception during pandemic		
Increased use of phone visits only	118	(23)
Increased use of video visits only	20	(4)
Increased use of phone and video visits	325	(63)
Current status of stay-at-home orders (at time of survey)		
Stay-at-home/shelter-in-place order	92	(17)
Reopening with restrictions	404	(75)
Completely open	44	(8)

abortion clinics (4%), and hospitals and other practice settings (7%). Almost one-half of providers (47%) were practicing in Title X-funded clinics. The median contraceptive patient volume at provider clinics was 622 per year. Providers spanned 49 states and 3 U.S. territories. At the time of the survey, 459 of the 541 providers (85%) reported that their clinic was currently providing telehealth services; the remaining 15% were either in the process of setting up their telehealth system or were not currently offering telehealth. Of the 85% of providers offering telehealth, the majority (63%) had increased use of both phone and video visits since the start of the pandemic, 23% had increased use of phone visits only, and 4% had increased use of video visits only. Only 14% of respondents who were offering telehealth at the time of the survey offered telehealth for contraceptive services before the pandemic (Table 1).

### Rewarding Aspects of Telehealth

Overall, providers were grateful to be able to offer remote contraceptive care during the pandemic via telehealth. They stated that telehealth enabled continuity of patient care, particularly at the outset of the pandemic when some clinics suspended in-person care.

#### Continuity of care

Some providers ( $n = 20$ ) noted that telehealth had been essential during the pandemic for providing care. School-based health center providers particularly were able to connect with young patients while schools were closed. Providers expressed appreciation for being able to care for patients in a way that protected their patients and clinic staff from the COVID-19 virus.

Telehealth allows us to meet patients' needs who might not have been willing to come into the office in person due to fear of COVID. Also, (it) feels good to mitigate staff risk. (Nurse practitioner, family planning clinic, South Carolina)

Providers described some of the efficiencies of telehealth, including being able to renew contraception prescriptions virtually and coordinate contraceptive delivery to a patient's home.

#### Accommodation for patients with difficulty attending in-person visits

Many providers ( $n = 57$ ) mentioned that telehealth accommodated patients who had difficulty making in-person visits.

It feels good to provide safe services during the pandemic and still meet needs; patients enjoy the flexibility of being able to receive care from their home without having to come in, with less transportation barriers. (Physician assistant, public health department, California)

Several providers ( $n = 19$ ) noted that telehealth increased reach for patients who lived farther away from clinics, such as in rural areas. A few noted the added convenience for those who only needed prescription refills and could obtain them through telehealth. Providers voiced that telehealth specifically aided working parents by reducing time away from work, household, and childcare responsibilities. Telehealth also aided college students by providing flexibility to fit into students' schedules.

[Telehealth] has also provided a lot more flexibility for students' schedules in other ways. Those who don't have transportation, don't need to have it for telehealth. It's great that there are mail-order pharmacies so students can remain safe. (Nurse practitioner, college health center, California)

#### Benefits to counseling

A few providers ( $n = 7$ ) discussed that patients who had been nervous during onsite contraceptive counseling sessions felt comfortable opening up about contraception through telehealth. One provider noted:

Sometimes people are more willing to share over the phone—ambiguity makes them feel safer when they do not have to have a face-to-face interaction with a clinician. (Registered nurse, college health center, South Carolina)

With fewer in-person visits, some providers ( $n = 8$ ) noted the benefits of having more time to spend on contraceptive counseling and education.

I'm seeing less non-sexual health patients, so I have more time to counsel sexual health patients. (Physician assistant, school-based health center, Illinois)

### *Challenging Aspects of Telehealth*

Providers discussed various telehealth challenges, including technological challenges, low patient awareness of telehealth, limited availability of contraceptive services through telehealth, and confidentiality concerns. Although some of these challenges, such as technological difficulties and low patient awareness of telehealth, would likely apply to any health care service received through telehealth, these challenges impacted provider ability to offer quality contraceptive services.

#### *Technological challenges*

Many providers ( $n = 47$ ) described how some of their patients did not have access to smart phones or mobile phones, and therefore could not access telehealth services.

We are currently only offering phone appointments, so I'm concerned that homeless and low-income patients aren't accessing services. (Internal medicine physician, college health center, California)

Even when patients had access to telehealth services, not all were comfortable using this service. Providers explained the various technological challenges their patients faced, including poor cellular service, unstable Wi-Fi connection, and issues setting up audio and video features. Several providers revealed that such situations often led to patient frustration. Telehealth also exacerbated language barriers between providers and patients.

We have a large population of Spanish-speaking clients. The communication barrier has been challenging. (Registered nurse, teen/youth clinic, Oklahoma)

Technological difficulties existed for providers as well as patients. Participants discussed the challenges of setting up, training, becoming familiar with telehealth platforms, and figuring out telehealth billing processes. Some providers noted the challenges obtaining registration and consent signatures, and others noted the difficulties getting patient telehealth visit details to integrate into patient medical records.

We are not set up to do billable telehealth. [Another challenge is] cost of setting up in terms of time and money. The HIPAA compliant video platform is unstable due to significant increase in volume. (Administrative staff, teen/youth clinic, New York)

#### *Lack of patient awareness of telehealth services*

Numerous providers ( $n = 25$ ) noted a general decrease in contraceptive appointment requests and had to put effort into building patient awareness about virtual contraceptive services.

Most people think we are not offering telehealth as the majority of doctor's offices have closed and non-elective surgeries have been cancelled throughout the state. (Clinic manager, family planning clinic, Connecticut)

Such challenges were magnified at youth-serving clinics, with students moving home, changing addresses, and unaware that their school health centers were still offering contraceptive services virtually. Additionally, a few providers reported that

offering care to new patients was difficult, because new patients were less likely to seek out contraceptive care for the first time via telehealth. In the following quote, a clinician describes new patients at a youth clinic not being aware of the services the clinic offers, let alone telehealth services.

I manage a high school-based clinic...The big problem has to do with new patients needing help. They may not be as familiar with all our services. (Physician assistant, youth clinic, Illinois)

#### *Inability to provide the full range of contraceptives through telehealth*

Many providers ( $n = 45$ ) mentioned the challenge in providing the full range of contraceptives, specifically citing challenges with offering and/or removing long-acting reversible contraceptive (LARC) methods. Some providers observed that patients had an increased interest in LARC methods during the pandemic. However, these methods required an in-person visit and, with limited in-person appointment availability, many commented on decreased patient access to LARC methods. Along the same line, while some providers recommended the self-administered injectable, depot-medroxyprogesterone acetate sub-cutaneous, in lieu of provider-administered DMPA, others said it had not worked for everyone:

Some of our patients are intellectually compromised. Our Social Worker has been able to guide them through the process of the telehealth, but we have had several struggle with the self-administration of the SubQ Depo. (Registered nurse, family planning clinic, Louisiana)

Providers streamlined contraceptive care in various ways, including provision of bridging methods, such as oral contraceptives, while waiting for an in-person appointment, and recommendation of evidenced-based extended durations for intrauterine devices and implants. One provider shared that she was counseling patients about intrauterine device self-removal. A few others mentioned that if patients needed removal of their LARC device and the clinic was closed for in-person services, they advised patients to go to other open clinics—such as the closest urgent care.

#### *Concerns about confidentiality for adolescents*

Many providers ( $n = 38$ ) commented on confidentiality concerns among youth owing to a lack of private space at home.

Finding a private room or having the technology on hand for a remote session is a barrier... particularly for those of color and/or those in low-income households. (Administrative staff, teen/youth clinic, New York)

Some providers noted that their young patients were unsure if bills related to contraceptive care would appear on their parent's insurance. A few providers stated that patients' phone numbers had changed, been disconnected, or were now shared with a parent.

As a pediatric office, generally we have parent phone numbers listed as the primary. It requires extra precautions to provide patient privacy as well as an element of trust that the patient's privacy wishes are being fulfilled on their end of the telehealth visit. (Physician, primary care clinic, New Mexico)

#### *Less personal connection through telehealth*

Several providers ( $n = 22$ ) described challenges establishing rapport with patients through telehealth, including interpreting

facial expressions and body language during counseling. Some providers felt that discussing sensitive topics such as sexually transmitted infections and sexual assault was not appropriate for telehealth.

There is really no substitute to face-to-face interaction. Something critical has been lost. (Health educator, family Planning clinic, Massachusetts)

A few providers ( $n = 4$ ) expressed that they missed using visual aids, handouts, and birth control models, which were particularly helpful for first time contraceptive users in deciding on a method.

## Discussion

Our study found that providers valued being able to use telehealth to continue offering patients contraceptive services during the COVID-19 pandemic. Benefits included increased access to certain patient groups, being able to spend more time counseling, and offering a form of care with which some patients might feel more comfortable speaking openly. In contrast, providers highlighted numerous challenges in providing contraceptive services through telehealth, including concerns related to technological difficulties, privacy, and breadth of contraceptive counseling. With limited ability to see patients in-clinic, providers adapted by eliminating certain testing requirements, empirically treating some conditions based on patient-reported symptoms, and prescribing short-acting bridging methods through telehealth.

Our results build on existing evidence about disparities in access to digital technologies (Brodie et al., 2000; Ramsetty & Adams, 2020; Yarger et al., 2021) and underscore the challenges providers have reaching patients without a phone or smart phone (Seifer & Callahan, 2020; Kiel, 2005; Mishori & Antono, 2020; Watling, 2011). Consistent with previous research, providers did note being able to better reach patients who live far from clinics or whose schedules limit them from attending in-person visits (Sundstrom et al., 2019; Thompson, Ahrens, et al., 2020; Yoost et al., 2017).

Our findings demonstrated telehealth challenges with communication among non-native English speakers. Previous research has found that patients with limited English proficiency are one-half as likely to use telehealth services compared with English-proficient patients (Rodriguez, Saadi, Schwamm, Bates, & Samal, 2021). Clinic-level recommendations include integrating language interpretation services into telehealth platforms and regular training updates for all staff on telehealth (Ukoha et al., 2021). Prior research has also noted the importance of documenting provider difficulties serving patients with limited English proficiency to quantify the magnitude of disparities and devise appropriate solutions (Rodriguez et al., 2021).

Although telehealth presents notable opportunities to serve youth through services such as contraception prescription and syndromic management, there are circumstances in which telehealth services may need to be tailored for youth and their unique environments (Mmeje, Coleman, & Chang 2020). Our study revealed that providers had significant concerns about adolescent privacy during telehealth visits, and that economic hardship intensified these privacy challenges owing to crowded home environments. Some solutions to promote patient confidentiality include patient use of earphones or providers asking patients yes or no questions (Barney et al., 2020), although these are not ideal for counseling.

Other studies conducted during the pandemic have demonstrated patient satisfaction with contraceptive care through telehealth (Stifani, Smith, et al., 2021), but research has found that the majority of patients prefer an in-person visit over a telehealth visit (NPR et al., 2021). Prioritizing the development of recommendations around the changing nature of contraceptive care is critical to address challenges in telehealth. For example, as found in our research, providers may renew contraception prescriptions virtually, with a blood pressure reading from a recent visit. In this study, providers felt limited by not being able to provide patients educational handouts with contraceptive information, despite most of them being able to conduct contraceptive visits by video. Recommendations for distributing patient-centered educational tools are needed, with specific guidance on how best to walk patients through tools when visits are not in person. With virtual contraceptive care likely becoming more normalized, other means to provide patients with information may need to be explored, such as emailing information to patients with digital access, mailing informational handouts to patients before or after visits, and educating patients through video using visual aids. A hybrid model can also be used to triage in-person visits for intrauterine device and implant placements and removals (Nanda et al., 2020). To promote this hybrid model, there is a need to support the capacity of clinics to offer and bill for telehealth services. As this research shows, the process of setting up telehealth can involve overcoming challenges with both technology and procedures.

This study has limitations. The sample represents a convenience sample of contraceptive providers. Nonetheless, the sample included providers from 39 states and 3 U.S. territories and various practice settings. In addition, this study relied on open-ended text responses from a survey and did not use in-depth interviews to collect data. However, open-ended text responses allowed for a larger sample size than what is used in most qualitative data collection efforts. Last, responses were collected over a 10-month period, during a period when telehealth was becoming more established. As such, challenges mentioned could be influenced by the provider's length of experience with telehealth.

## Implications for Policy and/or Practice

This study highlights the need to understand how best to integrate telehealth with in-person visits to most appropriately meet patients' needs and ensure optimal access to contraceptive care. The establishment of guidelines and recommendations for integrating telehealth into contraceptive care can help support patient access to contraceptive telehealth services alongside the continued delivery of safe in-person contraceptive care.

## Conclusions

The COVID-19 pandemic has significantly impacted provision of essential contraceptive health services and prompted the rapid integration of telehealth services. In this study, we examined providers' perspectives on offering contraceptive services through telehealth during the COVID-19 pandemic. Although providers were able to continue offering care and reach certain patient populations, they highlighted numerous challenges with this modality of care. As the pandemic continues to evolve, it is critical to determine how telehealth can advance contraceptive care, how it can be adjusted, and how it can be paired with in-person care to ensure optimal contraceptive care for patients.

## Acknowledgments

The authors thank the providers from across the country who provided valuable insights on their experiences using telehealth for contraceptive care provision during the U.S. COVID-19 epidemic.

## References

- American Association for Public Opinion Research (AAPOR). (2016). *Standard definitions: Final dispositions of case codes and outcome rates for surveys* (9th edition). Washington, DC: AAPOR.
- Barney, A., Buckelew, S., Mesheriakova, V., & Raymond-Flesch, M. (2020). The COVID-19 pandemic and rapid implementation of adolescent and young adult telemedicine: Challenges and opportunities for innovation. *Journal of Adolescent Health, 67*, 164–171.
- Brodie, M., Flournoy, R. E., Altman, D. E., Blendon, R. J., Benson, J. M., & Rosenbaum, M. D. (2000). Health information, the internet, and the digital divide: Despite recent improvements, Americans' access to the internet—and to the growing body of health information there—remains uneven. *Health Affairs, 19*, 255–265.
- Comfort, A. B., Rao, L., Goodman, S., Raine-Bennett, T., Barney, A., Mengesha, B., & Harper, C. C. (2022). Assessing differences in contraceptive provision through telemedicine among reproductive health providers during the COVID-19 pandemic in the United States. *Reproductive Health, 19*, 1–13. <https://doi.org/10.1186/s12978-022-01388-9>
- DeNicola, N., Grossman, D., Marko, K., Sonalkar, S., Tobah, Y. S. B., Ganju, N., ... Lowery, C. (2020). Telehealth interventions to improve obstetric and gynecologic health outcomes: A systematic review. *Obstetrics and Gynecology, 135*, 371–382.
- Gavin, L., Moskosky, S., Carter, M., Curtis, K., Glass, E., Godfrey, E., ... Zapata, L. (2014). Providing quality family planning services: Recommendations of the CDC and the U.S. office of population affairs. *Morbidity and Mortality Weekly Report: Recommendations and Reports, 63*, 4: 1–54.
- Ferreira-Filho, E. S., de Melo, N. R., Sorpreso, I. C. E., Bahamondes, L., Simões, R. D. S., Soares-Júnior, J. M., & Baracat, E. C. (2020). Contraception and reproductive planning during the COVID-19 pandemic. *Expert Review of Clinical Pharmacology, 13*, 615–622. <https://doi.org/10.1080/17512433.2020.1782738>
- Harvey, J. B., Valenta, S., Simpson, K., Lyles, M., & McElligott, J. (2019). Utilization of outpatient telehealth services in parity and nonparity states 2010–2015. *Telemedicine and e-Health, 25*, 132–136.
- Hill, B. J., Lock, L., & Anderson, B. (2021). Racial and ethnic differences in family planning telehealth use during the onset of the COVID-19 response in Arkansas, Kansas, Missouri, and Oklahoma. *Contraception, 104*, 262–264. <https://doi.org/10.1016/j.contraception.2021.05.016>
- FAIR Health. (2019). A multilayered analysis of telehealth: How this emerging venue of care is affecting the healthcare landscape. Available: <https://s3.amazonaws.com/media2.fairhealth.org/whitepaper/asset/A%20Multilayered%20Analysis%20of%20Telehealth%20-%20A%20FAIR%20Health%20White%20Paper.pdf>. Accessed: November 1, 2021.
- Kiel, J. M. (2005). The digital divide: Internet and e-mail use by the elderly. *Medical Informatics and the Internet in Medicine, 30*, 19–23.
- Mishori, R., & Antono, B. (2020). Telehealth, rural America, and the digital divide. *Journal of Ambulatory Care Management, 43*, 319–322. <https://doi.org/10.1097/jac.0000000000000348>
- Mmeje, O. O., Coleman, J. S., & Chang, T. (2020). Unintended consequences of the COVID-19 pandemic on the sexual and reproductive health of youth. *Journal of Adolescent Health, 67*, 326–327.
- Nanda, K., Lebetkin, E., Steiner, M. J., Yacobson, I., & Dorflinger, L. J. (2020). Contraception in the era of COVID-19. *Global Health: Science and Practice, 8*, 166–168. <https://doi.org/10.9745/gshp-d-20-00119>
- Neuendorf, K. (2017). *The content analysis guidebook* (2nd edition). Newbury Park, CA: SAGE Publications.
- NPR, Robert Wood Johnson Foundation, & Harvard T.H. Chan School of Public Health. (2021). Household experiences in America during the delta variant outbreak. Available: <https://media.npr.org/assets/img/2021/10/08/national-report-101221-final.pdf>. Accessed: November 1, 2021.
- Ramsetty, A., & Adams, C. (2020). Impact of the digital divide in the age of COVID-19. *Journal of the American Medical Informatics Association, 27*, 1147–1148.
- Rodriguez, J. A., Saadi, A., Schwamm, L. H., Bates, D. W., & Samal, L. (2021). Disparities in telehealth use among California patients with limited English proficiency. *Health Affairs (Millwood), 40*, 487–495. <https://doi.org/10.1377/hlthaff.2020.00823>
- Seifer, A., & Callahan, B. (2020). *Limiting broadband investment to "rural only" discriminates against Black Americans and other communities of color*. Columbus, OH: National Digital Inclusion Alliance.
- Steenland, M. W., Geiger, C. K., Chen, L., Rokicki, S., Gourevitch, R. A., Sinaiko, A. D., & Cohen, J. L. (2021). Declines in contraceptive visits in the United States during the COVID-19 pandemic. *Contraception, 104*, 593–599. <https://doi.org/10.1016/j.contraception.2021.08.003>
- Stifani, B. M., Avila, K., & Levi, E. E. (2021). Telemedicine for contraceptive counseling: An exploratory survey of US family planning providers following rapid adoption of services during the COVID-19 pandemic. *Contraception, 103*, 157–162. <https://doi.org/10.1016/j.contraception.2020.11.006>
- Stifani, B. M., Smith, A., Avila, K., Boos, E. W., Ng, J., Levi, E. E., & Benfield, N. C. (2021). Telemedicine for contraceptive counseling: Patient experiences during the early phase of the COVID-19 pandemic in New York City. *Contraception, 103*, 157–162. <https://doi.org/10.1016/j.contraception.2021.04.006>
- Sundstrom, B., DeMaria, A. L., Ferrara, M., Meier, S., & Billings, D. (2019). "The closer, the better": The role of telehealth in increasing contraceptive access among women in rural South Carolina. *Maternal and Child Health Journal, 23*, 1196–1205.
- Thompson, T.-A., Ahrens, K. A., & Coplon, L. (2020). Virtually possible: Using telehealth to bring reproductive health care to women with opioid use disorder in rural Maine. *mHealth, 6*.
- Thompson, T. A., Sonalkar, S., Butler, J. L., & Grossman, D. (2020). Telemedicine for family planning: A scoping review. *Obstetric and Gynecologic Clinics of North America, 47*, 287–316. <https://doi.org/10.1016/j.ogc.2020.02.004>
- Ukoha, E. P., Davis, K., Yinger, M., Butler, B., Ross, T., Crear-Perry, J., ... Nijagal, M. A. (2021). Ensuring equitable implementation of telemedicine in perinatal care. *Obstetrics and Gynecology, 137*, 487–492.
- Watling, S. (2011). Digital exclusion: Coming out from behind closed doors. *Disability & Society, 26*, 491–495.
- Weigel, G., Frederiksen, B., Ranji, U., & Salganicoff, A. (2019). Telemedicine in sexual and reproductive health. Available: <https://files.kff.org/attachment/Issue-Brief-Telemedicine-in-Sexual-and-Reproductive-Health>. Accessed: November 1, 2021.
- Wosik, J., Fudim, M., Cameron, B., Gellad, Z. F., Cho, A., Phinney, D., ... Ferranti, J. (2020). Telehealth transformation: COVID-19 and the rise of virtual care. *Journal of the American Medical Informatics Association, 27*, 957–962.
- Yarger, J., Hopkins, K., Elmes, S., Rossetto, I., de la Melena, S., White, K., & Harper, C. C. (2019). Young people's access to contraceptive services through telemedicine: Inequities by food and housing insecurity. Poster presentation at the Annual Meeting of the Society of Family Planning. Available: [https://www.contraceptionjournal.org/article/S0010-7824\(21\)00315-2/pdf](https://www.contraceptionjournal.org/article/S0010-7824(21)00315-2/pdf). Accessed: November 1, 2021.
- Yoost, J. L., Starcher, R. W., King-Mallory, R. A., Hussain, N., Hensley, C. A., & Gress, T. W. (2017). The use of telehealth to teach reproductive health to female rural high school students. *Journal of Pediatric and Adolescent Gynecology, 30*, 193–198.

## Author Descriptions

Lavanya Rao, MPH, is a Research Manager for the Beyond the Pill Program at the UCSF Bixby Center for Global Reproductive Health. Lavanya's interests lie in using data to improve access to reproductive health services and care for vulnerable populations.

Alison B. Comfort, PhD, is a Health Economist in the Department of Obstetrics, Gynecology and Reproductive Sciences at UCSF and conducts evaluations of reproductive, maternal, and child health interventions globally.

S. Sei Dojiri is a Research Assistant for the Beyond the Pill Program and a medical student at the University of California, San Francisco. Her interests include increasing access to reproductive health services and improving the quality of care that transgender patients receive.

Suzan Goodman, MD, MPH, is a National Training Director of Bixby Beyond the Pill Program and Associate Clinical Professor in UCSF Department of Family and Community Medicine. Her research interests include contraceptive equity, access, patient-centered counseling, training, and systems-based innovation.

Jennifer Yarger, PhD, is an Associate Researcher in the Department of Obstetrics, Gynecology and Reproductive Sciences at UCSF. She conducts research on young people's sexual and reproductive health, including youth access to health information and services.

Nishant Shah, MD, MPH, is a physician trainer with the University of California Bixby Center for Reproductive Health and a family medicine physician working at Planned Parenthood of Maryland. His research interests include improved training for comprehensive reproductive health services.

Connie Folse, MPH, serves as the Training and Education Manager for the Beyond the Pill program at the Bixby Center for Global Reproductive Health at UCSF. Her interests include patient-centered care, contraceptive counseling, and reproductive autonomy.

Maya Blum, MPH, is the Project Director for the Beyond the Pill Program at the UCSF Bixby Center for Global Reproductive Health. She manages a national research and training program to improve contraceptive care in the United States.

Julia Hankin is a Training Coordinator for the Beyond the Pill Program and is pursuing a Master's in Public Health at the University of California, Berkeley. Her interests include contraceptive and pregnancy decision-making and reproductive autonomy.

Cynthia C. Harper, PhD, is a Professor in Obstetrics, Gynecology and Reproductive Sciences at the University of California, San Francisco. She conducts research on contraceptive access and equity, reproductive autonomy, and the impact of the COVID-19 pandemic on health services.