



Published in final edited form as:

Prev Med. 2021 September ; 150: 106664. doi:10.1016/j.ypmed.2021.106664.

COVID-19 and family planning service delivery: Findings from a survey of U.S. physicians

Lauren B. Zapata^{a,*}, Kathryn M. Curtis^a, Riley J. Steiner^a, Jennifer A. Reeves^a, Antoinette T. Nguyen^a, Kathryn Miele^{b,c}, Maura K. Whiteman^a

^aDivision of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA, United States of America

^bDivision of Birth Defects and Infant Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States of America

^cEagle Medical Services, Atlanta, GA, United States of America

Abstract

Equitable access to contraception is critical for reproductive autonomy. Using cross-sectional data from the *DocStyles* survey administered September–October 2020 (68% response rate), we compared changes in family planning-related clinical services and healthcare delivery strategies before and during the COVID-19 pandemic and assessed service provision issues among 1063 U.S. physicians whose practice provided family planning services just before the pandemic. About one-fifth of those whose practices provided the following services or strategies just before the pandemic discontinued these services during the pandemic: long-acting reversible contraception (LARC) placement (16%); LARC removal (17%); providing or prescribing emergency contraceptive pills (ECPs) in advance (18%); and reminding patients about contraception injections or LARC removal or replacement (20%). Many practices not providing the following services or strategies just before the pandemic initiated these services during the pandemic: telehealth for contraception initiation (43%); telehealth for contraception continuation (48%); and renewing contraception prescriptions without requiring an office visit (36%). While a smaller proportion of physicians reported service provision issues in the month before survey completion

*Corresponding author at: U.S. Centers for Disease Control and Prevention, 4770 Buford Highway NE, Mailstop F-74, Atlanta, GA 30341-3717, United States of America. lzapata@cdc.gov (L.B. Zapata).

Publisher's Disclaimer: Disclaimer

Publisher's Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the U.S. Centers for Disease Control and Prevention.

Disclosure of which tasks each author completed

Dr. Zapata conceptualized the analyses, developed survey items, conducted analyses, drafted the initial manuscript, and reviewed and revised the manuscript. Drs. Curtis and Whiteman conceptualized the analyses, developed survey items, interpreted data, and reviewed and revised the manuscript. Dr. Steiner developed survey items, conducted analyses, interpreted data, and reviewed and revised the manuscript. Drs. Reeves, Nguyen, and Miele reviewed and revised survey items, interpreted data, and reviewed and revised the manuscript. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

Financial disclosure

No financial disclosures were reported by the authors of this paper.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

than at any point during the pandemic, about one-third still reported fewer adult females seeking care (37%) and technical challenges with telehealth (32%). Discontinuation of key family planning services during the COVID-19 pandemic may limit contraception access and impede reproductive autonomy. Implementing healthcare service delivery strategies that reduce the need for in-person visits (e.g., telehealth for contraception, providing or prescribing ECPs in advance) may decrease disruptions in care. Resources exist for public health and clinical efforts to ensure contraception access during the pandemic.

Keywords

COVID-19; Family planning; Contraception; Reproductive health

1. Introduction

Ensuring equitable patient access to family planning services, including but not limited to contraception, is critical for promoting reproductive autonomy (Holt et al., 2020; Potter et al., 2019), as these services support individuals and their partners to choose if and when to become pregnant. Family planning services are also important to prevent unintended pregnancies, which represent nearly half of all U.S. pregnancies (Finer and Zolna, 2016). Unintended pregnancies are associated with adverse maternal and infant health outcomes (Gipson et al., 2008; Qiu et al., 2020), although it is difficult to disentangle the multiple social and economic inequity factors that influence both pregnancy intention and poor maternal and infant health outcomes (Zambrano et al., 2020). Access to contraception might be especially important during public health emergencies, such as the coronavirus disease 2019 (COVID-19) pandemic, when fertility preferences might change (Lindberg et al., 2020). For example, individuals may want to postpone pregnancy during the pandemic because pregnant persons with COVID-19 are at significantly higher risk for severe outcomes compared with non-pregnant persons with COVID-19, even though the absolute risks for severe COVID-19-associated outcomes among pregnant and non-pregnant persons are low (Zambrano et al., 2020). Additionally, a survey of U.S. women examining the intersection of pandemic-related economic challenges and reproductive experiences found that those whose finances had worsened during the pandemic were more likely to want to delay childbearing or have fewer children because of the pandemic (Lindberg et al., 2020).

The COVID-19 pandemic has affected healthcare access, delivery, and utilization in the United States (Czeisler et al., 2020; Demeke et al., 2020; Koonin et al., 2020; Mehrotra et al., 2020). Healthcare systems and clinics have closed or reduced services to optimize resources and mitigate infection risks for patients and providers. Best practices and resources have been compiled to help providers continue to deliver family planning services during the pandemic (Reproductive Health National Training Center (RHNTC), 2020; University of California San Francisco (UCSF) School of Medicine, 2020). Healthcare delivery strategies include telehealth visits; curbside pickup or mail delivery of supplies; providing a 12-month supply of contraception to reduce the need for follow-up visits; preemptively giving prescriptions for or supplies of emergency contraception pills (ECPs); and proactively reviewing patient charts to identify those who will soon run out of supplies

or are due for a contraceptive injection or long-acting reversible contraception (LARC, intrauterine device or implant) management (Reproductive Health National Training Center (RHNTC), 2020). Although many of these strategies reduce the need for in-person visits, clinic visits remain necessary for LARC insertion and removal, if desired by patients, and these services may be particularly impacted by the pandemic.

Nevertheless, evidence suggests the COVID-19 pandemic has disrupted access to family planning services. One survey found that one in three U.S. women reported that contraceptive or other reproductive health visits were delayed or cancelled or that they experienced challenges accessing contraception (Lindberg et al., 2020). Less is known about providers' perspectives regarding how the COVID-19 pandemic has affected family planning service delivery. One survey of office-based obstetrician-gynecologists found that most have continued to provide reproductive health services during the pandemic, but that they have faced challenges (e.g., declines in patient volume, financial and staffing challenges) and changes (e.g., telehealth utilization) within their practices (Weigel et al., 2020). We sought to expand what is known about the effect of the pandemic on family planning service provision from the perspectives of a broad range of U.S. physicians. Using data from a web-based panel survey of primary care physicians, pediatricians, and obstetrician-gynecologists working in outpatient and inpatient settings, our objectives were to compare changes in family planning-related clinical services and healthcare delivery strategies before and during the pandemic and assess specific service provision issues experienced during the pandemic.

2. Methods

We analyzed cross-sectional data from the Fall 2020 *DocStyles* survey, a web-based panel survey of U.S. healthcare providers commissioned by Porter Novelli Public Services (<http://styles.porternovelli.com>) and administered September 14–October 26, 2020 by SERMO (<http://www.sermo.com>). The survey, which contained 135 questions, assessed healthcare provider attitudes and practices on a broad range of health topics, including family planning service provision, just before and during the COVID-19 pandemic.

2.1. Study sample

Respondents were sampled from SERMO's Global Medical Panel of medical professionals. Quotas were predetermined to reach 1000 primary care physicians, 250 obstetrician-gynecologists, 250 pediatricians, and 250 nurse practitioners or physician assistants. Invitations to participate were sent via email. Participation was voluntary. Respondents were paid an honorarium of \$54–\$72 for completing the survey depending on the number of questions they were asked. The family planning service provision questions were fielded with primary care physicians, obstetrician-gynecologists, and pediatricians. The overall response rate was 68%; by physician specialty, response rates were 69% for primary care physicians, 69% for obstetrician-gynecologists and 76% for pediatricians.

2.2. Measures

Nine questions were added to the Fall 2020 *DocStyles* survey to examine family planning service delivery during the pandemic. Physicians were asked how many female patients of

reproductive age (15–49 years) for whom their practice provided family planning services per week just before the COVID-19 pandemic. Those providing family planning services were asked about practice-level clinical services provided and strategies used (assessed separately), at two different time points - just before and at any point during the COVID-19 pandemic. Clinical practices assessed included: LARC placement; LARC removal; telehealth for contraception initiation; and telehealth for contraception continuation. Clinical strategies assessed included: accepted self-report of blood pressure during telehealth visits for contraception; renewed contraception prescriptions without requiring an office visit; allowed curbside pickup or mail delivery of contraception; supported self-administration of subcutaneous injectable contraception; counseled on extending use of LARC beyond their FDA-approved duration; provided or prescribed ECPs in advance; provided or prescribed a year's worth of oral contraceptives; and sent patient reminders about DMPA [depot medroxyprogesterone acetate] injections or LARC removal or replacement. Additionally, physicians were asked about specific practice-level issues experienced related to providing family planning or sexually transmitted infection (STI) services because of the COVID-19 pandemic, at two different time points - at any point during the pandemic and in the month before survey completion. Issues assessed included: fewer adult females seeking care; clinic closed for in-person appointments; LARC placement services limited; LARC removal services limited; decreases in contraceptive supplies; technical challenges with telehealth; confidentiality concerns with telehealth; billing challenges with telehealth; and patient discomfort with telehealth. The survey also collected information on provider and clinical practice characteristics.

2.3. Statistical analysis

Of 1503 physicians who completed the survey, we excluded 440 whose practice did not provide family planning services to female patients of reproductive age just before the pandemic, resulting in an analytic sample of 1063 physicians.

We described physician and clinical practice characteristics of respondents. We also described practice-level family planning-related clinical services provided and strategies used, just before and at any point during the COVID-19 pandemic; and practice-level service provision issues experienced because of the COVID-19 pandemic, at any point during the pandemic and in the month before survey completion. We used the McNemar's test of dependent proportions (Fagerland et al., 2014) to compare estimates by time period (i.e., just before and at any point during the COVID-19 pandemic, for clinical services provided and strategies used; and at any point during the COVID-19 pandemic and in the month before survey completion, for service provision issues experienced). We considered findings with a p -value <0.05 as statistically significant. Additionally, among physicians who reported their practice provided the clinical service or used the strategy just before the pandemic, we examined the proportion who reported their practice discontinued the service or strategy during the pandemic (i.e., did not provide at any point during the pandemic). Similarly, among physicians who reported their practice did not provide the clinical service or did not use the strategy just before the pandemic, we examined the proportion who reported their practice initiated the service or strategy during the pandemic. Outcomes are presented overall and by physician type to inform clinic-based improvements.

Analyses of *DocStyles* survey data do not require Centers for Disease Control and Prevention Institutional Review Board evaluation since the data licensed from Porter Novelli do not include personal identifiers; the activity is considered non-human subjects research. We analyzed the data using SAS software, version 9.4.

3. Results

Most respondents were primary care physicians (34.0% were family practitioners and 28.7% were internists) while 22.7% were obstetrician-gynecologists and 14.7% were pediatricians (Table 1). Most had practiced medicine for 10 years (76.3%), were aged 45 years (59.3%), were male (61.6%), and self-identified as non-Hispanic White (61.5%). Respondents represented all U.S. regions. Most worked in a suburban area (52.7%) and primarily in a group outpatient practice (74.6%). Family planning patient volume just before the COVID-19 pandemic (i. e., average number of female patients of reproductive age who received family planning services per week) was low (1–10 patients) for most respondents (58.6%) while 29.9% reported moderate (11–50 patients) and 11.5% reported high (≥ 51 patients) volume.

3.1. Changes in clinical services provided and strategies used

The proportion of physicians whose practices provided LARC services significantly decreased when comparing the period just before the pandemic with any point during the pandemic (LARC placement: 41.2% vs 36.3%; LARC removal: 45.1% vs 40.1%) (Table 2). Significant increases in the proportion of physicians reporting the following practice-level services or strategies were observed when comparing the period just before the pandemic with any point during the pandemic: telehealth for contraception initiation (27.6% vs 55.8%); telehealth for contraception continuation (29.4% vs 60.1%); accepted self-report of blood pressure during telehealth visits for contraception (among those who provided telehealth for contraception initiation or continuation) (44.8% vs 57.8%); renewed contraception prescriptions without requiring an office visit (54.9% vs 62.2%); and allowed curbside pickup or mail delivery of contraception (18.5% vs 29.5%). Significant changes were not observed for the following strategies: supported self-administration of subcutaneous injectable contraception (15.6% vs 15.5%); counseled on extending use of LARC beyond their FDA-approved duration (26.3% vs 25.8%); provided or prescribed ECPs in advance (33.8% vs 35.4%); provided or prescribed a year's worth of oral contraceptives (52.0% vs 52.3%); and sent patient reminders about DMPA injections or LARC removal or replacement (22.8% vs 22.1%).

Whereas decreases in LARC placement and increases in renewed contraception prescriptions without requiring an office visit were observed overall, no changes in these practices were observed for pediatricians comparing the period just before the pandemic with any point during the pandemic (data not shown; 16.7% vs 15.4% for LARC placement, 55.8% vs 59.6% for renewed contraception prescriptions without requiring an office visit). Also, although not significant overall, more pediatricians provided or prescribed ECPs in advance of need at any point during the pandemic (34.6%) compared with the period just before the pandemic (27.6%).

3.2. Clinical services and strategies discontinued

Among physicians whose practices provided the following services or strategies just before the pandemic, 15% reported their practice discontinued these during the pandemic: LARC placement (16.0%); LARC removal (16.7%); accepted self-report of blood pressure during telehealth visits for contraception, (among those who provided telehealth for contraception initiation or continuation both just before and at any point during the pandemic) (26.5%); renewed contraception prescription without requiring an office visit (16.3%); allowed curbside pickup or mail delivery of contraception (22.3%); supported self-administration of subcutaneous injectable contraception (30.7%); counseled on extending use of LARC beyond their FDA-approved duration (29.6%); provided or prescribed ECPs in advance (18.4%); and sent patient reminders about DMPA injections or LARC removal or replacement (20.3%) (Table 3).

Discontinuation of LARC placement and LARC removal services significantly differed by physician type (data not shown), being highest among pediatricians (23.1% and 33.3%, respectively) and lowest among obstetrician-gynecologists (9.4% and 10.4%, respectively). Discontinuation of providing or prescribing ECPs in advance of need also differed by physician type (data not shown), being highest among primary care physicians (24.8%) and lowest among pediatricians (9.3%).

3.3. Clinical services and strategies initiated

Among physicians whose practices did not provide or use the following services or strategies just before the pandemic, 15% reported their practice initiated these during the pandemic: telehealth for contraception initiation (43.0%); telehealth for contraception continuation (48.4%); accepted self-report of blood pressure during telehealth visits for contraception (among those who provided telehealth for contraception initiation or continuation both just before and at any point during the pandemic) (42.6%); renewed contraception prescriptions without requiring an office visit (35.9%); and allowed curbside pickup or mail delivery of contraception (18.6%) (Table 3).

Initiation of telehealth for contraception differed by physician type (data not shown); initiating telehealth for contraception initiation and continuation was highest among obstetrician/gynecologists (65.1% and 71.3%, respectively) and lowest among primary care physicians (34.8% and 40.7%, respectively). Initiating providing or prescribing a year's worth of oral contraceptives also varied by physician type (data not shown); whereas only 3.0% of pediatricians initiated this practice, it was initiated by 15.6% of primary care physicians and 31.4% of obstetrician-gynecologists.

3.4. Service provision issues experienced

Substantial proportions of physicians reported experiencing specific practice-level service provision issues during the pandemic, but significantly fewer reported these issues in the month before survey completion: fewer adult females seeking care (49.0% vs 36.6%); clinic closed for in-person appointments (31.4% vs 14.4%); and among physicians whose practices provided these services before the pandemic, limited LARC placement services (36.3% vs 17.6%) and limited LARC removal services pandemic (31.9% vs 16.5%) (Table 4).

Similarly, physicians reported experiencing practice-level challenges with telehealth services during the pandemic, but significantly fewer reported these challenges in the month before survey completion: technical challenges (45.8% vs 31.7%); confidentiality concerns (21.8% vs 17.0%); billing challenges (32.7% vs 23.1%); and patient discomfort (31.2% vs 21.9%). Despite reductions in practice-level issues experienced when comparing at any point during the pandemic with in the month before survey completion, >20% of physicians still reported the following practice-level issues in the month before survey completion: fewer adult females seeking care (36.6%); technical challenges with telehealth (31.7%); billing challenges with telehealth (23.1%), and patient discomfort with telehealth (21.9%).

Although significantly fewer physicians overall reported confidentiality concerns with telehealth in the month before survey completion versus at any point during the pandemic, no differences between time points were found for pediatricians; 28.2% reported confidentiality concerns with telehealth at any point during the pandemic and 26.3% reported this issue in the month before survey completion (data not shown).

4. Discussion

We found many changes in family planning clinical services when comparing service delivery before and during the pandemic and some differences by physician type. We observed slight decreases in the proportion of physicians overall whose practices provided LARC services, reflecting physicians whose practices offered LARC services before but discontinued these services during the pandemic. Approximately one in five physicians surveyed whose practices provided other key routine contraception practices just before the pandemic, reported practice-level discontinuation of these practices during the pandemic (e.g., providing or prescribing ECPs in advance and sending patient reminders about DMPA injections or LARC removal or replacement). We observed increases in the proportion of physicians whose practices used service delivery approaches that improve access and reduce the need for in-person visits (i.e., telehealth for contraception, accepted self-report of blood pressure during telehealth visits for contraception, renewed contraception prescriptions without requiring an office visit, and curbside pickup or mail delivery of contraception), reflecting physicians whose practices did not offer these services before but initiated these services during the pandemic. The physicians surveyed also experienced practice-level service provision issues during the pandemic (e.g., fewer adult females seeking care, clinic closed for in-person appointments). While a smaller proportion of physicians reported these issues in the month before survey completion compared with at any point during the pandemic, about one-third still reported fewer adult females seeking care.

We observed low availability of LARC services both before and during the pandemic. A core component of quality family planning services is patient access to a broad range of contraceptive methods, including LARC (Gavin et al., 2014). As part of providing patient-centered care and supporting individual reproductive autonomy, access to in-person visits for LARC placement and removal services is needed, if LARC services are desired by patients. Access to LARC methods, which are highly effective (Trussell et al., 2018) and have few medical contraindications for use (Curtis et al., 2016a), might be particularly important during the pandemic given possible changes in attitudes toward contraception. One study

found that one in four women overall, and one in two women with concerns about reduced access to contraception, reported thinking more about getting a LARC method because of the pandemic (Lindberg et al., 2020).

Only one in three physicians surveyed reported their practices provided or prescribed ECPs in advance (both before and during the pandemic), despite evidence-based guidance supporting advance provision of ECPs so they can be taken as soon as possible after unprotected sexual intercourse (Curtis et al., 2016b). This finding may be because levonorgestrel ECPs are available over-the-counter in the United States and physicians may not perceive that they have an important role ensuring patient access to emergency contraception. However, despite over-the-counter access, barriers to ECPs remain, including stocking issues and confusion about access requirements (Upadhy, 2019). Emergency contraception is an important backup contraceptive option and might have increased salience during the COVID-19 pandemic because of potential pandemic-related contraception access barriers.

A promising finding from our analysis is use of telehealth for contraception care, in line with recommendations to offer telehealth services during the pandemic (Centers for Disease Control and Prevention (CDC), 2020). Our analysis found that more than half of physicians surveyed reported providing telehealth for both contraception initiation and continuation at some point during the pandemic, reflecting significant increases compared with just before the pandemic. These findings are similar to prior surveys of family planning providers that found increased provision of telehealth services for contraception during the COVID-19 pandemic (Stifani et al., 2020; Weigel et al., 2020). Nevertheless, recent medical claims data have shown that while telehealth services have grown rapidly during the pandemic, these services were not sufficient to offset drops in in-person visits (Cox and Amin, 2020). Moreover, providers have reported challenges with telehealth including technical difficulties, inability to conduct physical exams and diagnostic testing, and lack of guidance on telehealth best practices (Stifani et al., 2020; Weigel et al., 2020). In our survey, although physicians reported fewer practice-level telehealth issues in the month before survey completion compared with at any point during the pandemic, suggesting gained experience implementing telehealth over time, nearly one in three continued to report technical challenges with telehealth, and approximately one in five continued to report confidentiality concerns, billing challenges, and patient discomfort with telehealth. Confidentiality concerns with telehealth remained a particular issue for pediatricians. Resources are available to support family planning service delivery through telehealth, including information on providing person-centered care, workflow best practices, billing, and online pharmacies (Converge Partners in Action. Provision of Person-Centered Reproductive Health Care via Telemedicine, 2020; University of California San Francisco (UCSF) School of Medicine, 2020).

Few physicians surveyed reported their practices initiated or implemented several suggested practices to help family planning providers meet patient needs during the COVID-19 pandemic (Reproductive Health National Training Center (RHNTC), 2020) (i.e., supporting self-administration of subcutaneous injectable contraception, counseling on extending use of LARC beyond their FDA-approved duration, and sending patient reminders about DMPA

injection or LARC removal or replacement). Self-administration of subcutaneous injectable contraception is safe, feasible, and improves method continuation rates (Katz et al., 2020; Kennedy et al., 2019; Lerma and Goldthwaite, 2019); it also reduces the need for in-person visits. Additionally, evidence suggests that the risk of pregnancy while using a LARC method for 1–2 years longer than prescribed is low (Ali et al., 2017; McNicholas et al., 2017; Thaxton and Lavelanet, 2019; Ti et al., 2020). For patients who desire continued LARC use, consideration of extending use beyond FDA-approved duration may provide ongoing pregnancy protection for patients having difficulty accessing LARC services (Reproductive Health National Training Center (RHNTC), 2020). Last, proactively reviewing patient charts and sending patient reminders prompts patients to schedule an appointment before a lapse in contraception protection. Low use of these strategies highlights opportunities for service delivery improvement to increase contraception access. Provider training may be needed to increase provider awareness of and confidence implementing certain strategies.

4.1. Limitations

Our findings are subject to several limitations. Respondents were sampled from a volunteer panel of medical professionals, and sampling was not random or population based. As such, findings are not generalizable to the U.S. population of primary care physicians, pediatricians, and obstetrician-gynecologists, and statistical inferences should be interpreted with caution. No information was collected about non-respondents, so we are unable to determine how respondents and non-respondents differed with respect to family planning service provision. Data are based on physician self-report of practice-level experiences and some responses may be inaccurate due to recall, social desirability, or other types of reporting error. We assessed clinical practices used at any point during the COVID-19 pandemic rather than routine provision or provision at different time points during the pandemic (e.g., early versus later months); as such, findings may overestimate initiation and underestimate discontinuation of practices during the pandemic. Also related to discontinuation of practices, we do not know if discontinuation occurred because of the physician (regardless of patient demand) or because of a lack of patients seeking services. Assessment of service provision issues experienced was related to providing family planning or STI services, so we do not know with certainty that issues reported were specific to family planning service delivery. We focused on contraception services in this analysis, but acknowledge that family planning services include a wider range of services, such as pregnancy testing and counseling, basic infertility services, and STI screening and treatment (Gavin et al., 2014). Last, we only assessed experiences of physicians who reported providing family planning services to female patients of reproductive age and recognize that physicians may also provide these services to individuals not identifying as female.

5. Conclusions

Discontinuation of key family planning services during the COVID-19 pandemic may limit contraception access, which may impede reproductive autonomy and contribute to unintended pregnancies. Implementing healthcare service delivery strategies that reduce the need for in-person visits (e.g., telehealth for contraception initiation and continuation,

curbside pickup or mail delivery of contraception, providing or prescribing ECPs in advance, providing or prescribing a year's worth of contraception) may decrease disruptions in care. Resources exist for public health and clinical efforts to ensure contraception access during the pandemic.

Acknowledgments

We would like to acknowledge Dr. Amy M. Fasula for her assistance conceptualizing the data collection effort, including development and review of survey items.

References

- Ali M, Bahamondes L, Bent, Landoulsi S, 2017. Extended effectiveness of the etonogestrel-releasing contraceptive implant and the 20 µg levonorgestrel-releasing intrauterine system for 2 years beyond U.S. Food and Drug Administration product labeling. *Glob Health Sci Pract* 5 (4), 534–539. [PubMed: 29263025]
- Centers for Disease Control and Prevention (CDC), 2020. Healthcare Facilities: Managing Operations During the COVID-19 Pandemic [cited 2020 December 8]; Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-hcf.html>.
- Converge Partners in Action. Provision of Person-Centered Reproductive Health Care via Telemedicine, 2020 [cited 2020 December 8]; Available from: https://convergents.org/wp2019/wp-content/uploads/2020/08/PCRH-and-Telemedicine_7.28.20.pdf.
- Cox C, Amin K, 2020. How have health spending and utilization changed during the coronavirus pandemic? Kaiser Family Foundation and the Peterson Center on Healthcare.
- Curtis KM, Tepper NK, Jatlaoui TC, Berry-Bibee E, Horton LG, Zapata LB, et al., 2016a. U.S. medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm. Rep* 65 (3), 1–103.
- Curtis KM, Jatlaoui TC, Tepper NK, Zapata LB, Horton LG, Jamieson DJ, et al., 2016b. U.S. selected practice recommendations for contraceptive use, 2016. *MMWR Recomm. Rep* 65 (4), 1–66.
- Czeisler M, Marynak K, Clarke KEN, Salah Z, Shakya I, Thierry JM, et al., 2020. Delay or avoidance of medical care because of COVID-19-related concerns - United States, June 2020. *MMWR Morb. Mortal. Wkly Rep* 69 (36), 1250–1257. [PubMed: 32915166]
- Demeke HB, Pao LZ, Clark H, Romero L, Neri A, Shah R, et al., 2020. Telehealth practice among health centers during the COVID-19 pandemic - United States, July 11–17, 2020. *MMWR Morb. Mortal. Wkly Rep* 69 (50), 1902–1905. [PubMed: 33332297]
- Fagerland MW, Lydersen S, Laake P, 2014. Recommended tests and confidence intervals for paired binomial proportions. *Stat. Med* 33 (16), 2850–2875. [PubMed: 24648355]
- Finer LB, Zolna MR, 2016. Declines in unintended pregnancy in the United States, 2008–2011. *N. Engl. J. Med* 374 (9), 843–852. [PubMed: 26962904]
- Gavin L, Moskosky S, Carter M, Curtis K, Glass E, Godfrey E, et al., 2014. Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. *MMWR Recomm Rep*, 63, pp. 1–54. Rr-04.
- Gipson JD, Koenig MA, Hindin MJ, 2008. The effects of unintended pregnancy on infant, child, and parental health: a review of the literature. *Stud. Fam. Plan* 39 (1), 18–38.
- Holt K, Reed R, Crear-Perry J, Scott C, Wulf S, Dehlendorf C, 4 2020. Beyond same-day long-acting reversible contraceptive access: a person-centered framework for advancing high-quality, equitable contraceptive care. *Am. J. Obstet. Gynecol* 222 (4, Supplement), S878.e1–S878.e6. [PubMed: 31809706]
- Katz M, Newmark RL, Aronstam A, O'Grady N, Strome S, Rafie S, et al., 2020. An implementation project to expand access to self-administered depot medroxyprogesterone acetate (DMPA). *Contraception* 102 (6), 392–395. [PubMed: 32931811]
- Kennedy CE, Yeh PT, Gaffield ML, Brady M, Narasimhan M, 2019. Self-administration of injectable contraception: a systematic review and meta-analysis. *BMJ Glob. Health* 4 (2), e001350.

- Koonin LM, Hoots B, Tsang CA, Leroy Z, Farris K, Jolly T, et al., 2020. Trends in the use of telehealth during the emergence of the COVID-19 pandemic - United States, January-march 2020. *MMWR Morb. Mortal. Wkly Rep* 69 (43), 1595–1599. [PubMed: 33119561]
- Jerma K, Goldthwaite LM, 2019. Injectable contraception: emerging evidence on subcutaneous self-administration. *Curr Opin Obstet Gynecol* 31 (6), 464–470. [PubMed: 31567445]
- Lindberg LD, VandeVusse A, Mueller J, Kistein M, 2020. Early impacts of the COVID-19 pandemic: Findings from the 2020 Guttmacher survey of reproductive health experiences. Guttmacher Institute, New York, NY.
- McNicholas C, Swor E, Wan L, Peipert JF, 2017. Prolonged use of the etonogestrel implant and levonorgestrel intrauterine device: 2 years beyond Food and Drug Administration-approved duration. *Am J Obstet Gynecol* 216 (6), 586.e1–586.e6. [PubMed: 28147241]
- Mehrotra A, Chernew M, Linetsky D, Hatch H, Cutler D, Schneider EC, 2020. The Impact of the COVID-19 Pandemic on Outpatient Visits: Changing Patterns of Care in the Newest COVID-19 Hot Spots: The Commonwealth Fund; 2020 8 13.
- Potter JE, Stevenson AJ, Coleman-Minahan K, Hopkins K, White K, Baum SE, et al., 2019. Challenging unintended pregnancy as an indicator of reproductive autonomy. *Contraception* 100 (1), 1–4. [PubMed: 30851238]
- Qiu X, Zhang S, Sun X, Li H, Wang D, 2020. Unintended pregnancy and postpartum depression: a meta-analysis of cohort and case-control studies. *J. Psychosom. Res* 138, 110259. [PubMed: 33002811]
- Reproductive Health National Training Center (RHNTC), 2020. What Family Planning Providers Can Do to Meet Client Needs During COVID-19 [cited 2020 12/07/2020]; Available from: https://www.fpntc.org/resources/what-family-planning-providers-can-do-meet-client-needs-during-covid-19?utm_source=eNews&utm_campaign=March.
- Stifani BM, Avila K, Levi EE, 2020. Telemedicine for contraceptive counseling: an exploratory survey of US family planning providers following rapid adoption of services during the COVID-19 pandemic. *Contraception* 103 (3), 157–162. [PubMed: 33212033]
- Thaxton L, Lavelanet A, 2019. Systematic review of efficacy with extending contraceptive implant duration. *Int. J. Gynaecol. Obstet* 144 (1), 2–8. [PubMed: 30343503]
- Ti AJ, Roe AH, Whitehouse KC, Smith RA, Gaffield ME, Curtis KM, 2020. Effectiveness and safety of extending intrauterine device duration: a systematic review. *Am J Obstet Gynecol* 223 (1) (24–35.e3). [PubMed: 31954154]
- Trussell J, Aiken ARA, Micks E, Guthrie KA, 2018. Efficacy, safety, and personal considerations. In: Hatcher RA, Nelson AL, Trussell J, Cwiak C, Cason P, Policar MS, et al. (Eds.), *Contraceptive Technology*, 21st ed. Ayer Company Publishers, Inc, New York, NY.
- University of California San Francisco (UCSF) School of Medicine, 2020. Beyond the Pill, Bixby Center for Global Reproductive Health. Contraception During COVID-19: Best Practices and Resources [cited 2020 12/07/2020]; Available from: <https://beyondthepill.ucsf.edu/sites/beyondthepill.ucsf.edu/files/UCSF%20BtP%20COVID-19%20Resources%203-31-20%2028003%29.pdf>.
- Upadhya KK, 2019. Emergency contraception. *Pediatrics* 144 (6).
- Weigel G, Frederiksen B, Ranji U, Salganicoff A, 2020. How OBGYNs Adapted Provision of Sexual and Reproductive Health Care during the COVID-19 Pandemic: Kaiser Family Foundatio. Kaiser Family Foundatio.
- Zambrano LD, Ellington S, Strid P, Galang RR, Oduyebo T, Tong VT, et al., 2020. Update: characteristics of symptomatic women of reproductive age with laboratory-confirmed SARS-CoV-2 infection by pregnancy status - United States, January 22-October 3, 2020. *MMWR Morb. Mortal. Wkly Rep* 69 (44), 1641–1647. [PubMed: 33151921]

Table 1Respondent characteristics, Fall *DocStyles*, 2020 (*N* = 1063)^a.

Characteristics		n (%)
Physician characteristics		
Specialty	Family practitioner	361 (34.0)
	Internist	305 (28.7)
	Pediatrician	156 (14.7)
	Obstetrician-gynecologist	241 (22.7)
Number of years practicing medicine	<10 years	252 (23.7)
	10–19 years	399 (37.5)
	20–29 years	304 (28.6)
	30 years	108 (10.2)
Age	45 years	630 (59.3)
Male gender		655 (61.6)
Race/ethnicity	White, non-Hispanic	654 (61.5)
	Black, non-Hispanic	42 (4.0)
	Asian, non-Hispanic	247 (23.2)
	Hispanic	58 (5.5)
	Other	62 (5.8)
Clinical practice characteristics		
Census region	Northeast	223 (21.0)
	Midwest	226 (21.3)
	South	358 (33.7)
	West	256 (24.1)
Urbanicity of primary work setting	Urban	376 (35.4)
	Suburban	560 (52.7)
	Rural	127 (12.0)
Primary work setting	Individual outpatient practice	161 (15.2)
	Group outpatient practice	793 (74.6)
	Inpatient practice	109 (10.3)
Family planning patient volume ^b	Low (1–10)	623 (58.6)
	Moderate (11–50)	318 (29.9)
	High (51)	122 (11.5)

^aU.S. physicians providing family planning services to at least one female patient of reproductive age per week just before the COVID-19 pandemic began.

^bAverage number of female patients of reproductive age who received family planning services per week just before the COVID-19 pandemic.

Table 2Changes in clinical services provided and strategies used, Fall *DocStyles*, 2020 (N = 1063).^a

Clinical services and strategies	Just before the COVID-19 pandemic	At any point during the COVID-19 pandemic
	n (%)	n (%)
LARC placement	438 (41.2)	386 (36.3)
LARC removal	479 (45.1)	426 (40.1)
Telehealth for contraception initiation	293 (27.6)	593 (55.8)
Telehealth for contraception continuation	313 (29.4)	639 (60.1)
Accepted self-report of blood pressure during telehealth visits for contraception ^b	165 (44.8)	412 (57.8)
Renewed contraception prescriptions without requiring an office visit	584 (54.9)	661 (62.2)
Allowed curbside pickup or mail delivery of contraception	197 (18.5)	314 (29.5)
Supported self-administration of subcutaneous injectable contraception	166 (15.6)	165 (15.5)
Counseled on extending use of LARC beyond their FDA-approved duration	280 (26.3)	274 (25.8)
Provided or prescribed emergency contraceptive pills in advance	359 (33.8)	376 (35.4)
Provided or prescribed a year's worth of oral contraceptives	553 (52.0)	556 (52.3)
Sent patient reminders about DMPA injections or LARC removal or replacement	242 (22.8)	235 (22.1)

Note: Boldface indicates statistical significance ($p < 0.05$) of McNemar's test comparing the proportion providing the clinical service or using the strategy just before the COVID-19 pandemic with the proportion providing the clinical service or using the strategy at any point during the COVID-19 pandemic.

DMPA, depot medroxyprogesterone acetate; FDA, Food and Drug Administration; LARC, long-acting reversible contraception, which includes intrauterine devices and implants.

^aU.S. physicians providing family planning services to at least one female patient of reproductive age per week just before the COVID-19 pandemic began.

^bAmong those who provided telehealth for contraception initiation or continuation ($n = 368$ for just before the COVID-19 pandemic; $n = 713$ for at any point during the COVID-19 pandemic; $n = 738$ for just before the COVID-19 pandemic or at any point during the COVID-19 pandemic when comparing proportions by time period).

Table 3

Clinical services and strategies discontinued and initiated during the COVID-19 pandemic, Fall *DocStyles*, 2020 ($N = 1063$).^a

Clinical services and strategies	Provided just before the COVID-19 pandemic	Discontinued during the COVID-19 pandemic ^b	Not provided just before the COVID-19 pandemic	Initiated during the COVID-19 pandemic ^c
	n	n (%)	n	n (%)
LARC placement	438	70 (16.0)	625	18 (2.9)
LARC removal	479	80 (16.7)	584	27 (4.6)
Telehealth for contraception initiation	293	31 (10.6)	770	331 (43.0)
Telehealth for contraception continuation	313	37 (11.8)	750	363 (48.4)
Accepted self-report of blood pressure during telehealth visits for contraception ^d	155	41 (26.5)	188	80 (42.6)
Renewed contraception prescriptions without requiring an office visit	584	95 (16.3)	479	172 (35.9)
Allowed curbside pickup or mail delivery of contraception	197	44 (22.3)	866	161 (18.6)
Supported self-administration of subcutaneous injectable contraception	166	51 (30.7)	897	50 (5.6)
Counseled on extending use of LARC beyond their FDA-approved duration	280	83 (29.6)	783	77 (9.8)
Provided or prescribed emergency contraceptive pills in advance	359	66 (18.4)	704	83 (11.8)
Provided or prescribed a year's worth of oral contraceptives	553	72 (13.0)	510	75 (14.7)
Sent patient reminders about DMPA injections or LARC removal or replacement	242	49 (20.3)	821	42 (5.1)

Note: Clinical services and strategies were either provided or not provided just before the COVID-19 pandemic (i.e., data in the 'provided just before the COVID-19 pandemic' column are mutually exclusive from the data in the 'not provided just before the COVID-19 pandemic').

DMPA, depot medroxyprogesterone acetate; FDA, Food and Drug Administration; LARC, long-acting reversible contraception, which includes intrauterine devices and implants.

^aU.S. physicians providing family planning services to at least one female patient of reproductive age per week just before the COVID-19 pandemic began.

^bPhysicians who reported their practice did not provide the service/did not use the strategy at any point during the pandemic, among those who reported it was provided/used just before the pandemic.

^cPhysicians who reported their practice provided the service/used the strategy at any point during the pandemic, among those who reported it was not provided/used just before the pandemic).

^dAmong those who provided telehealth for contraception initiation or continuation just before the COVID-19 pandemic and at any point during the COVID-19 pandemic.

Table 4Service provision issues experienced because of the COVID-19 pandemic, Fall *DocStyles*, 2020 (N = 1063).^a

Service provision issues	Experienced at any point during the COVID-19 pandemic	Experienced in the month before survey completion ^b
	n (%)	n (%)
Fewer adult females seeking care	521 (49.0)	389 (36.6)
Clinic closed for in-person appointments	334 (31.4)	153 (14.4)
LARC placement services limited ^c	159 (36.3)	77 (17.6)
LARC removal services limited ^d	153 (31.9)	79 (16.5)
Decreases in contraceptive supplies	118 (11.1)	99 (9.3)
Technical challenges with telehealth	487 (45.8)	337 (31.7)
Confidentiality concerns with telehealth	232 (21.8)	181 (17.0)
Billing challenges with telehealth	348 (32.7)	245 (23.1)
Patient discomfort with telehealth	332 (31.2)	233 (21.9)

Note: Boldface indicates statistical significance ($p < 0.05$) of McNemar's test comparing the proportion experiencing the issue at any point during the COVID-19 pandemic and in the month before survey completion.

LARC, long-acting reversible contraception, which includes intrauterine devices and implants.

^aU.S. physicians providing family planning services to at least one female patient of reproductive age per week just before the COVID-19 pandemic began.

^bSurvey was fielded September 14–October 26, 2020.

^cAmong those who provided LARC placement services before the pandemic ($n = 438$).

^dAmong those who provided LARC removal services before the pandemic ($n = 479$).