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Changes in Commercial Insurance Claims for Contraceptive Services During the Beginning of the COVID-19 Pandemic—United States, January 2019–September 2020

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Abstract

Objective: We describe changes in commercial insurance claims for contraceptive services during the beginning of the COVID-19 pandemic.

Methods: We analyzed commercial insurance claims using IQVIA PharMetrics® Plus data from over 9 million U.S. females aged 15–49 years, enrolled during any month, January 2019–September 2020. We calculated monthly rates of outpatient claims for intrauterine devices (IUDs), implants, and injectable contraception and monthly rates of pharmacy claims for contraceptive pills, patches, and rings. We used Joinpoint regression analysis to identify when statistically significant changes occurred in trends of monthly claims rates for each contraceptive method. We calculated monthly percentages of claims for contraceptive counseling via telehealth.

Results: Monthly claims rates decreased for IUDs (−50%) and implants (−43%) comparing February 2020 with April 2020 but rebounded by June 2020. Monthly claims rates for injectables decreased (−19%) comparing January 2019 with September 2020, and monthly claims rates for pills, patches, and rings decreased (−22%) comparing July 2019 with September 2020. The percentage of claims for contraceptive counseling occurring via telehealth was low (<1%) in 2019, increased to 34% in April 2020, and decreased to 9–12% in June–September 2020.

Conclusions: Substantial changes in commercial insurance claims for contraceptive services occurred during the beginning of the COVID-19 pandemic, including transient decreases in IUD and implant claims and increases in telehealth contraceptive counseling claims. Contraceptive claims data can be used by decision makers to identify service gaps and evaluate use of interventions like telehealth to improve contraceptive access, including during public health emergencies.

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Keywords

contraception; COVID-19; claims analysis

Introduction

Access to contraceptive services, including during public health emergencies, is critical to maintain quality reproductive health care, support reproductive autonomy, and prevent unintended pregnancies. In 2017–2019, more than 61 million U.S. women were at risk for unintended pregnancy, and more than 37 million women had ongoing or potential need for contraceptive services (Zapata, Pazol, et al., 2021). Public health emergencies can disrupt access to health care. At the beginning of the COVID-19 pandemic, many professional organizations and federal agencies highlighted the importance of maintaining access to sexual and reproductive health care services, including contraceptive care to prevent unintended pregnancies, especially because the effects of COVID-19 infection during pregnancy were unknown at that time (American College of Obstetrics and Gynecology, 2020; Benson, Madden, Tarleton, & Micks, 2021; Centers for Disease Control and Prevention, 2020a; Reproductive Health National Training Center, 2020).

The first U.S. COVID-19 case was identified on January 21, 2020, and a national emergency was declared on March 13, 2020 (Centers for Disease Control and Prevention, 2020b; Schuchat, 2020). During March–May 2020, 42 U.S. states and territories issued mandatory stay-at-home orders (Lasry et al., 2020; Moreland et al., 2020), and the Centers for Disease Control and Prevention recommended prioritizing urgent health care visits, delaying elective care, and offering clinical services through telehealth (Koonin et al., 2020; Lange et al., 2020). U.S. ambulatory care visits for any reason decreased 60–70% during March-April 2020, returning to pre-pandemic levels later in 2020 (Mafi et al., 2022; Mehrotra, Chernow, Linetsky, Hatch, Cutler, & Schneider, 2020). Use of women's preventive health services, such as screening for breast and cervical cancer and sexually transmitted infections, decreased in March–April 2020, returning to 2019 levels by July 2020 (Becker, Moniz, Tipirneni, Dalton, & Ayanian, 2021).

While national surveys indicated that the pandemic affected fertility preferences, with about one-third of women wanting to delay pregnancy early in the pandemic, (Lindberg, VandeVusse, Mueller, & Kirstein, 2020, 2021) few reports have assessed changes in use of contraceptive services during the COVID-19 pandemic. Through survey data, U.S. women reported difficulty accessing contraception during the beginning of the pandemic (Diamond-Smith et al., 2021; Frederiksen, Ranji, Salganicoff, & Long, 2021; Lindberg, VandeVusse, Mueller, & Kirstein, 2021) and health care providers (surveyed in September–October 2020) indicated that some key contraceptive services, such as intrauterine device (IUD) and implant placement and removal, had been discontinued (Zapata, Curtis, et al., 2021).

The objective of this analysis was to describe changes in commercial insurance claims for contraceptive services among females of reproductive age during January 2019–September 2020, encompassing the beginning of the COVID-19 pandemic and the year before the pandemic. For this analysis, we assessed changes in claims for the following contraceptive

services: specific contraceptive methods (including claims for provision, insertion, removal, and surveillance) and claims for contraceptive counseling services occurring via telehealth. Evaluation of changes in claims for contraceptive services can help decision makers identify gaps in services and monitor use of new strategies, such as telehealth, to improve contraceptive access.

Methods

We used IQVIA PharMetrics® Plus data (2021 Q1 version), a claims database that collects fully adjudicated medical and pharmacy claims data for this descriptive analysis. In 2020, PharMetrics® Plus included data from approximately 32 million commercially insured enrollees in the United States (Divino et al., 2020; Feuerstadt, Stong, Dahdal, Sacks, Lang, & Nelson, 2020). PharMetrics® Plus is considered to be representative for age and gender of the U.S. commercially insured population under 65 years of age (Divino et al., 2020; Feuerstadt, Stong, Dahdal, Sacks, Lang, & Nelson, 2020). Data are validated, cleaned, quality-checked, and standardized to create the PharMetrics® Plus data. For this analysis, we included outpatient visit and pharmacy claims among females aged 15–49 years who were enrolled in commercial health plans during any month from January 2019 through September 2020. In this dataset, sex of enrollees is defined as “female”, “male”, or “unknown”, and no information is available on gender; the authors acknowledge that people of all sexes and genders, including transgender and nonbinary individuals, may need access to contraceptive care. Because the data are deidentified, the Centers for Disease Control and Prevention determined that this activity was not human subjects research and institutional review board review was not required. We used the Reporting of studies Conducted using Observational Routinely-collected Data (ReCORD) Statement in reporting the methods and findings of this analysis (Benchimol et al., 2015).

We assessed use of contraceptive services from outpatient visit and pharmacy claims related to certain reversible contraceptive methods. For contraceptive methods generally received in an outpatient setting (IUDs, implants, and injectables), we used International Classification of Diseases and Related Health Problems -- Tenth Revision (ICD-10), Healthcare Common Procedure Coding System (HCPCS), and Current Procedural Terminology (CPT) codes for provision, insertion, removal, and surveillance (which includes follow-up and other codes related to use of the method) to identify services received for these methods (Appendix 1), based on previously published codes (Office of Population Affairs, 2020). For contraceptive methods generally received through prescription (contraceptive pills, patches, and rings), we used pharmacy claims, which are recorded when a patient fills a prescription, identified using National Drug Codes (Appendix 1). Finally, we identified contraceptive counseling claims overall and by use or non-use of telehealth, using ICD-10 codes for contraceptive counseling (Roser, Rubin, Nagarajan, Wieland, & Benfield, 2018) and CPT modifiers for telehealth visits (Appendix 1).

Because adolescents and young adults may have had different barriers to contraception and reproductive health care access, such as cost and confidentiality issues exacerbated by pandemic conditions, (Lindberg, Bell, & Kantor, 2020; Zucker, Nagendra, Burstein, & Neu, 2023) we also assessed contraceptive method and counseling claims for three age groups:

15–17-year-olds, 18–24-years-olds, and 25–49-year-olds. These data did not include race or ethnicity information. We also assessed outpatient visits for contraceptive counseling by provider specialty (gynecology, which included obstetrician/gynecologists and midwives; primary care, which included general practitioners, family practice, internists, pediatricians, urgent care, nurse practitioners, and physician assistants; and other or unknown provider specialty).

We identified the total number of eligible enrollees and number of outpatient visits for any reason among those enrollees for each month during January 2019 through September 2020. Because the number of enrollees varied by month, we calculated rates of enrollees with one or more claims for each of the specific contraceptive methods per 1,000 enrollees during each month from January 2019 through September 2020, overall and by age group. We also calculated monthly rates of claims for IUD and implant insertions and removals.

We evaluated trends in monthly claims rates for contraceptive method services in January 2019 through September 2020, using Joinpoint regression analysis (version 4.8.0.1) (National Cancer Institute, 2023). Joinpoint regression identifies time points (called joinpoints) during the study period when changes in trends occurred. Changes in contraceptive claims are reported as monthly percent change (MPC). Once the joinpoint(s) are identified, then the MPC for a segment between two joinpoints is calculated to reflect how the trend in the reported contraceptive claims has varied over time. Joinpoint software was used to fit weighted least-squares regression models to the estimated rates on the logarithmic scale. The number of observations allows for a maximum fit of 3 joinpoints (4 trend segments), which were searched using the grid search algorithm (Ingram et al., 2018). Joinpoint software employs the permutation test repeatedly for testing between two different joinpoint models to select the better fitting model. The MPC in contraceptive claims rates was calculated from the slope of the log model, and the empirical quantile method was used to calculate the associated 95% confidence intervals. Statistically significant results are reported at the 5% level of significance, and MPCs with 95% confidence intervals that excluded zero were considered statistically significant. If the MPC was statistically significant, the trend was described as significantly increasing or decreasing. If the MPC was not statistically significant, the trend was described as stable. We also reported the absolute percent change in claims rates.

We also evaluated how monthly rates of claims differed in 2020 (during the beginning of the pandemic) compared with 2019 (before the pandemic). We compared the monthly rates and calculated the percent change in monthly rates for each month in 2020 compared with the same month in 2019. Because of the large number of claims in the analytic data set, almost all the differences in the monthly rates of claims for each month in 2020 compared with the same month in 2019 were statistically significant, including those with very small differences (z-tests with $p<0.05$) (National Center for Health Statistics, 2012). Therefore, we focused on changes that were 10% or greater; while this threshold is arbitrary, changes less than 10% may not suggest a meaningful difference in monthly claims rates in 2020 compared to 2019.

Finally, we calculated the percentage of claims for all contraceptive counseling visits that occurred via telehealth, overall and by age group and provider specialty. We used Joinpoint regression to identify when statistically significant changes occurred in trends of monthly claims rates for contraceptive counseling visits via telehealth. We used the Reporting of studies Conducted using Observational Routinely-collected Data (ReCORD) Statement in reporting the methods and findings of this analysis (Benchimol et al., 2015).

Results

The study population included 9,796,115 females in January–December 2019 and 9,107,419 females in January–September 2020, aged 15–49 years, enrolled for health care services during any month from January 2019 through September 2020. Among eligible enrollees, there were 54,722,563 outpatient visits for any reason in January–December 2019 and 37,383,642 outpatient visits for any reason in January–September 2020. The monthly number of enrollees decreased by 5% comparing January 2019 (7,948,805 enrollees) with September 2020 (7,518,781 enrollees; Table 1). However, the monthly rate of claims for outpatient visits for any reason among eligible enrollees decreased by 32% when comparing February 2020 (561.9 outpatient visits/1,000 eligible enrollees) with April 2020 (383.4/1,000 eligible enrollees), but then increased by June 2020 (569.7/1,000 eligible enrollees; Table 1).

We first assessed monthly rates of claims by contraceptive method type over the entire study period, January 2019 through September 2020 (Tables 1–2; Figure 1). Monthly rates of IUD claims were stable from January 2019 (5.4 IUD claims/1,000 enrollees) through February 2020 (5.2/1,000 enrollees; MPC = 0.3; 95% CI −0.7, 1.3; $p>0.05$), decreased by 50% comparing February 2020 (5.2/1,000 eligible enrollees) with April 2020 (2.6/1,000 eligible enrollees; MPC = −30.6; 95% CI −35.4, −20.6; $p<0.05$), rebounded by June 2020 (5.3/1,000 enrollees; MPC = 41.3; 95% CI 25.6, 54.3; $p<0.05$) and remained stable at 5.6/1,000 enrollees through September 2020 (MPC = 1.7; 95% CI −9.0, 8.0; $p>0.05$;). Similarly, monthly rates of implant claims were stable from January 2019 (1.3/1,000 enrollees) through February 2020 (1.2/1,000 enrollees; MPC = 0.1; 95% CI −1.0, 1.4; $p>0.05$), decreased by 43% comparing February 2020 (1.2/1,000 eligible enrollees) with April 2020 (0.7/1,000 eligible enrollees; MPC = −23.9; 95% CI −29.5, −10.4; $p<0.05$), rebounded by June 2020 (1.3/1,000 eligible enrollees; MPC = 33.4; 95% CI 16.1, 46.7; $p<0.05$) and remained stable through September 2020 (MPC = −1.5; 95% CI −12.9, 6.4; $p>0.05$). In contrast, monthly rates of injectable claims decreased by 19% across the study period comparing January 2019 (2.4/1,000 enrollees) with September 2020 (2.0/1,000 enrollees; MPC = −0.7; 95% CI −1.2, −0.2; $p<0.05$). Monthly rates of pharmacy claims for pills, patches, or rings also decreased over the study period, declining 22% comparing July 2019 (100/1,000 enrollees) with September 2020 (78.4/1,000 eligible enrollees; MPC = −1.7; 95% CI −2.7, −1.4; $p<0.05$).

To assess whether the monthly claims rates observed in 2020 (during the beginning of the pandemic) were different from those in 2019 (before the pandemic), we assessed differences in monthly claims rates for the same months in 2020 compared with 2019 (Figure 2). The rates in all months in 2019 were statistically different (z-test; $p<0.05$) from the rates in

the same month in 2020 for all contraceptive methods, with the exception of injectables (January and February), IUDs (June), and implants (July). Rates of IUD claims were lower in March (−19%), April (−54%), and May (−34%) 2020 compared with the same months in 2019; all other monthly differences were less than 10%. Similarly, monthly rates of implant claims decreased in March (−13%), April (−46%), and May (−26%) 2020 compared with the same months in 2019. For injectable claims, monthly rates were lower in April (−14%), May (−13%), July (−12%), and August (−15%) 2020 compared with the same months in 2019. Monthly rates of pharmacy claims for pills, patches, or rings were between 10% and 20% lower in all months for 2020 compared with 2019.

When examining claims for IUD and implant insertions and removals separately, rates among enrollees receiving these services followed patterns similar to those for the total services for each of these methods (Table 2, Appendix 2). Observed trends included statistically significant decreases between February 2020 and April 2020 for IUD insertions (−49%; MPC = −29.4; 95% CI −33.9, −20.0), IUD removals (−47%; MPC = −26.8; 95% CI −31.8, −17.3), and implant removals (−43%; MPC = −21.4; 95% CI −28.1, −8.7) and statistically significant increases between April 2020 and June 2020 for IUD insertions (98%; MPC = 38.0; 95% CI 23.9, 50.0), IUD removals (127%; MPC = 46.7; 95% CI 30.9, 59.3), and implant removals (106%; MPC = 42.7; 95% CI 23.1, 58.4); trends for implant insertions were not statistically significant (−9%; MPC = −1.1; 95% CI −2.2, 0.1 for January 2019–September 2020).

When examining monthly contraceptive claims rates by age group (15–17 years, 18–24 years, and 25–49 years), we observed patterns generally similar to the overall results for each contraceptive method, with some differences particularly among the youngest age group (Table 2; Appendices 3–6). For IUD claims among 18–24-year-olds and 25–49-year-olds, we observed decreases in early 2020 (MPC = −19.9; 95% CI −31.3, 2.1; $p>0.05$ for 18–24-year-olds, January 2020–April 2020; MPC = −30.6; 95% CI −34.9, −21.5; $p<0.05$ for 25–49-year-olds, February 2020–April 2020), followed by increases between April 2020 and July 2020 for 18–24-year-olds (MPC = 28.7; 95% CI −16.4, 50.5; $p>0.05$) and between April 2020 and June 2020 for 25–49-year-olds (MPC = 41.0; 95% CI 26.9, 52.5; $p<0.05$). Among 15–17-year-olds, the decrease in rates of IUD claims began in November 2019 (MPC = −19.8, 95% CI −30.1, −13.8; $p<0.05$ for November 2019–April 2020), followed by an increase between April 2020 and September 2020 (MPC = 24.7, 95% CI 16.6, 35.2; $p<0.05$). Rates of implant claims among 18–24-year-olds decreased between February 2020 and April 2020 (MPC = −22.8, 95% CI −29.7, −4.2; $p<0.05$) and increased between April 2020 and July 2020 (MPC = 26.6, 95% CI 14.5, 50.3; $p<0.05$); rates among 15–17-year-olds decreased between December 2019 and April 2020 (MPC = −20.2; 95% CI −36.1, −12.1; $p<0.05$) and increased between April 2020 and September 2020 (MPC = 18.1; 95% CI 10.6, 28.9; $p<0.05$). However, rates of implant claims among those aged 25–49 years remained stable over the entire study period (MPC = −0.5; 95% CI −1.6, 0.6; $p>0.05$, January 2019–September 2020). For injectable claims, rates decreased over the entire study period for 18–24-year-olds (MPC = −1.0; 95% CI −1.6, −0.4; $p<0.05$) and 25–49-year-olds (MPC = −0.6; 95% CI −1.0, −0.2; $p<0.05$); however, among 15–17-year-olds, rates increased between January 2019 and December 2019 (MPC = 4.1, 95% CI 2.8, 5.8; $p<0.05$), decreased between December 2019 and February 2020 (MPC = −23.1, 95% CI

−27.6, −10.5; p<0.05), and increased between February 2020 and September 2020 (MPC = 4.0, 95% CI 1.6, 7.4; p<0.05). Similarly, pill, patch, and ring claims rates decreased across the entire time period for 18–24-year-olds (MPC = −1.3, 95% CI −1.6, −1.0; p<0.05) and 25–49-year-olds (MPC = −1.4; 95% CI −1.6, −1.2; p<0.05); however, among 15–17-year-olds, rates increased between January 2019 and December 2019 (MPC = 3.8, 95% CI 3.0, 4.9; p<0.05), decreased between December 2019 and February 2020 (MPC = −22.3, 95% CI −1.6, −1.0; p<0.05) and increased between February 2020 and September 2020 (MPC = 3.8, 95% CI 1.9, 6.4; p<0.05).

Claims for contraceptive counseling visits via telehealth were rare (<1% of all contraceptive counseling visits) from January 2019 through February 2020 (MPC = 3.4, 95% CI −3.3, 10.1; p>0.05) (Table 2; Figure 3). However, the percentage of claims for contraceptive counseling visits that occurred via telehealth increased to 6% in March 2020 and then increased to a high of 34% in April 2020 (MPC = 2462.7 for February–April 2020, 95% CI 754.5, 3875.8; p<0.05), declined to 21% in May 2020, and leveled off at 9–12% in June 2020 through September 2020 (MPC = −29.3 for April-September 2020, 95% CI −45.4, −10.6; p<0.05) (Table 2). Patterns of claims for contraceptive counseling visits via telehealth were similar when stratified by age (15–17 years, 18–24 years, and 25–49 years; Table 2, Appendix 7). Patterns were also similar by provider specialty; absolute percentages of claims for contraceptive counseling visits by telehealth were greatest among primary care providers (e.g., 38% in April 2022), followed by other providers (e.g., 35% in April 2020), and obstetrician/gynecologists (e.g., 30% in April 2020; Appendix 8).

Discussion

The primary aim of this analysis was to describe changes in contraceptive service claims, including those related to contraceptive methods and contraceptive counseling via telehealth, among commercially insured females of reproductive age in the United States during the beginning of the COVID-19 pandemic (January–September 2020). We observed that claims rates related to IUDs and implants decreased by about half in the early months of the pandemic (comparing February 2020 with April 2020) but rebounded by June 2020. Concurrently, claims for contraceptive counseling via telehealth increased dramatically from almost none to one-third of all visits in April 2020 and plateaued at 9–12% in June through September 2020. In contrast, claims rates for injectable contraception and for pills, patches, and rings decreased across the entire study period, January 2019 through September 2020. Findings from this large claims-based analysis are generally consistent with data from smaller patient and provider surveys documenting declines in access to contraception early in the pandemic (Diamond-Smith et al., 2021; Frederiksen, Ranji, Salganicoff, & Long, 2021; Lindberg, VandeVusse, Mueller, & Kirstein, 2021).

Changes in monthly claims rates for IUDs and implants followed the general pattern of changes in outpatient visits for any reason observed in these data and in analyses of U.S. and global data on health care use during the beginning of the pandemic (Becker, Moniz, Tipirneni, Dalton, & Ayanian, 2021; Martin, Kurowski, Given, Kennedy, & Clayton, 2021; Mehrotra, Chernow, Linetsky, Hatch, Cutler, & Schneider, 2020; Whaley et al., 2020). Two additional claims-based analyses reported substantial declines in IUD and implant claims of

46% and 76% from pre-pandemic levels to April 2020 (Becker, Moniz, Tipirneni, Dalton, & Ayanian, 2021; Steenland et al., 2021). While we could not assess what proportion of the increase in claims for IUDs and implants in May-June 2020 represented claims for those who delayed care in February–April 2020, we did not observe increases in claims rates that were higher than the previous rates, so it is likely that some patients delayed care beyond June 2020 or went without care.

We were able to assess claims rates for IUD and implant removals separately from insertions and other related services. While we observed transient decreases in removal claims (similar to those for insertions), rates increased to near baseline within a few months. Access to timely removal of these devices is imperative for reproductive autonomy and a critical component of assessing access to contraceptive services (Benson, Madden, Tarleton, & Micks, 2021; Romero et al., 2020; Zapata, Curtis, et al., 2021). Evaluating access to implant and IUD removal services in particular may serve as an indicator of service gaps with high impact among those seeking removal who cannot access it. Lack of access to IUD removal services early in the pandemic is also reflected in increases in the provision of guidance from health care providers to patients on self-removal of IUDs in 2020 in response to the pandemic (Fay, Traore, & Amico, 2023).

Claims rates for injectable contraception decreased significantly across the entire study period. Another claims analysis observed a 16% decrease in injectable contraception visits comparing April 2020 with May 2019 (Steenland et al., 2021). Access to injectables may have been less affected by pandemic restrictions than IUDs and implants, which involve medical procedures. Injectable contraception may have been available through additional sources, such as pharmacies, curbside services, and self-administration (Curtis, Nguyen, Reeves, Clark, Folger, & Whiteman, 2021; Reproductive Health National Training Center, 2020).

Claims rates for pills, patches, and rings also decreased over the study period, consistent with an analysis of Michigan pharmacy claims that observed a general pattern of decline with decreases of 15–30% for all months in 2020 compared with 2019 (Becker, Moniz, Tipirneni, Dalton, & Ayanian, 2021). However, another analysis that used outpatient claims rather than pharmacy codes observed a transient decrease in receipt of pills, patches, and rings in January through April 2020 (Steenland et al., 2021). Changes in prescribing practices and reimbursement that started before the pandemic may have allowed patients to obtain larger quantities of these methods at one time, resulting in fewer claims over time (Steenland, Rodriguez, & Cohen, 2022; Uhm, Chen, Cutler, & Creinin, 2021). Changes in sexual activity during the pandemic also may have influenced contraceptive seeking behavior (Gleason, Banik, Braverman, & Coleman, 2021; Rushmore et al., 2022).

Rates of claims for contraceptive methods among 18–24-year-olds and 25–49-year-olds generally followed patterns observed overall for individual contraceptive methods. For 15–17-year-olds, patterns were similar across all four contraceptive method groups, including increases in rates of claims during 2019, followed by decreases starting in November 2019 or December 2019 (earlier than for the other age groups and before the pandemic), and then increases starting in February 2020 for injectables and pills, patches, and rings, and in

April 2020 for IUDs and implants. These observations may reflect a different constellation of factors, including confidentiality, coverage, and logistics, in addition to the pandemic that affect access to contraceptive care for this youngest age group (15–17-year-olds) (Brittain et al., 2018; Garney et al., 2021; Steiner et al., 2021).

We observed a sharp increase in claims for contraceptive counseling visits via telehealth beginning in March 2020, with sustained increases over pre-pandemic claims through September 2020. Similar trends were observed by enrollee age group and provider specialty. While this increase may be due in part to increased identification of telehealth visits based on new guidelines and education about implementation of telehealth codes (Rushmore et al., 2022; Stifani, Avila, & Levi, 2021), providers have also reported large increases in telehealth services for contraception during the pandemic (Steenland et al., 2021; Stifani, Avila, & Levi, 2021; Weigel, Frederiksen, Ranji, & Salganicoff, 2020; Zapata, Curtis, et al., 2021), along with telehealth for any reason among the general population (Cantor, McBain, Pera, Bravata, & Whaley, 2021; Weiner, Bandeian, Hatef, Lans, Liu, & Lemke, 2021). We did not assess whether telehealth visits for contraceptive counseling resulted in a contraceptive method received at the time of the telehealth visit (e.g., a prescription for a method) or at a later time (e.g., an in-person visit for an IUD or implant). However, telehealth for contraceptive services has been considered a promising practice to increase access, with strong interest from providers and patients (Benson, Madden, Tarleton, & Micks, 2021; Reproductive Health National Training Center, 2020; Stifani, Avila, & Levi, 2021; Stifani et al., 2021). Increased use of telehealth during the pandemic may lead to sustained increases in health care access; however, implementation efforts need to ensure equitable access by addressing barriers such as lack of devices and internet service (Benson, Madden, Tarleton, & Micks, 2021; Reproductive Health National Training Center, 2020; Stifani, Avila, & Levi, 2021; Stifani et al., 2021; Weigel, Ramaswamy, Sobel, Salganicoff, & Cubanski, 2020).

Strengths and Limitations

Strengths of this analysis include the use of a large, commercial claims database to assess changes in receipt of contraceptive services over time and use of standard codes for contraceptive methods. There are several limitations to consider. This analysis used administrative claims data, which may lead to misclassification if specific services were not claimed or were coded incorrectly. Results from commercial claims data may not be generalizable to those with publicly funded or no insurance; this limitation may have differential effects by age group, due to differences in use of commercial, public, or other payment sources by age (Frost, Mueller, & Pleasure, 2021). We lacked data related to health care seeking behavior by patients and changes in clinical guidance and strategies enacted by health care providers and systems to respond to the COVID-19 pandemic. We also lacked information on race and ethnicity, gender, income, and education and were therefore not able to examine patterns in claims for contraceptive services, including telehealth, across these subgroups. This analysis focused on procedure and prescription reversible contraception; we did not assess permanent or over-the-counter methods. We only included outpatient claims, so these findings do not include inpatient contraceptive services. Finally, this analysis focused on the onset of the COVID-19 pandemic; future analyses could assess whether contraception claims rates varied with additional waves of the pandemic.

Implications for Practice and/or Policy

Access to preventive health care, including reproductive health services, is critical during public health emergencies. Further exploration of changes in the use of contraceptive services beyond the initial phase of the pandemic can increase understanding of ongoing barriers and facilitators to access, including among different patient populations. Evaluation of innovative strategies implemented during the pandemic, such as telehealth services, can support decision makers in determining best practices to retain and expand for improved access to contraception and reproductive health care.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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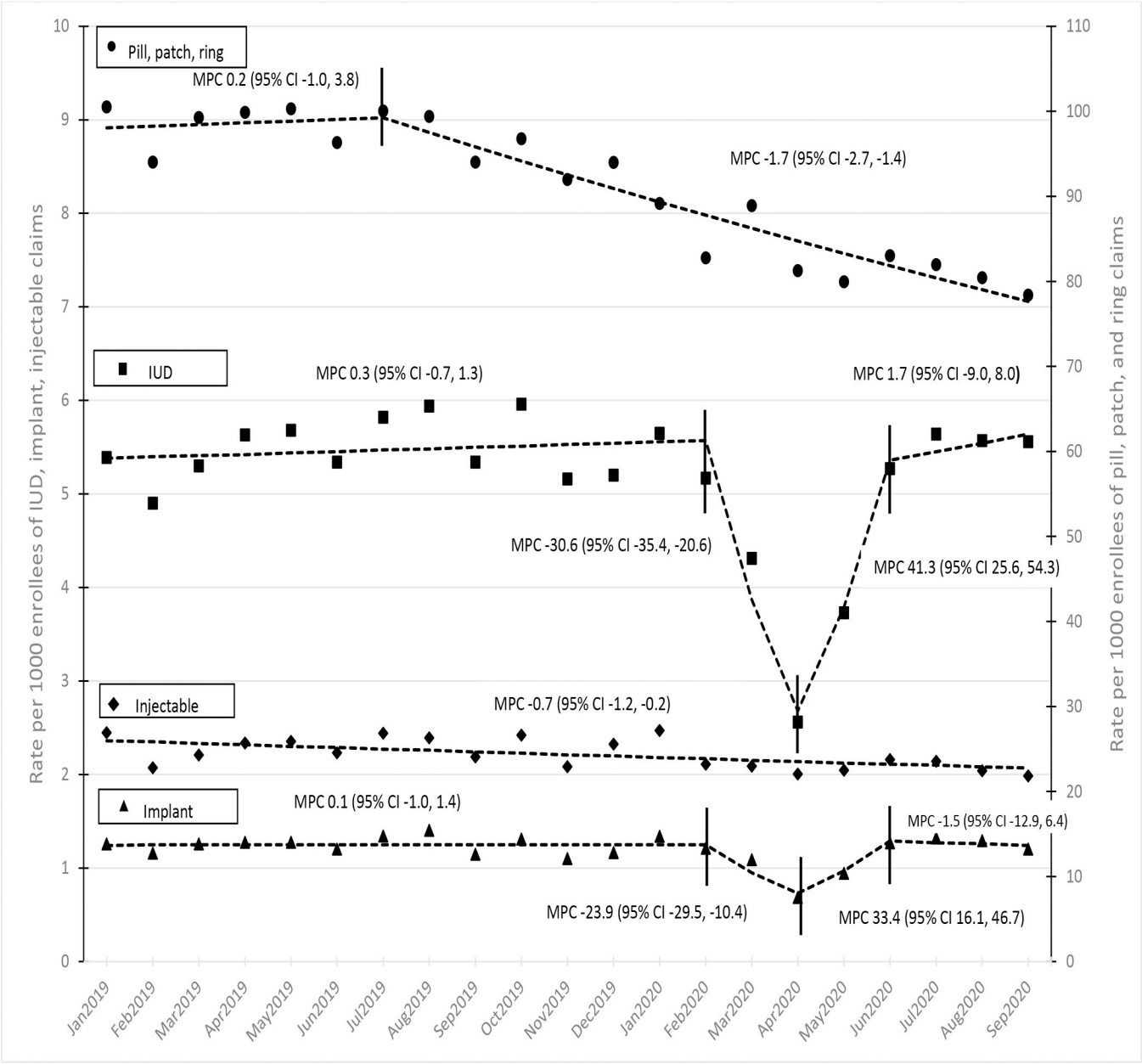

Figure 1.

Rates of claims by contraceptive method type, January 2019–September 2020. Observed rates for each contraceptive method are represented by symbols, the trend lines are represented by dashed lines, and a change in trend is denoted by symbol (|). The monthly percent change (MPC) and 95% confidence intervals (CI) are provided for each segment. MPCs with 95% confidence intervals that excluded zero were considered statistically significant.

CI, confidence interval; IUD, intrauterine device; MPC, monthly percent change

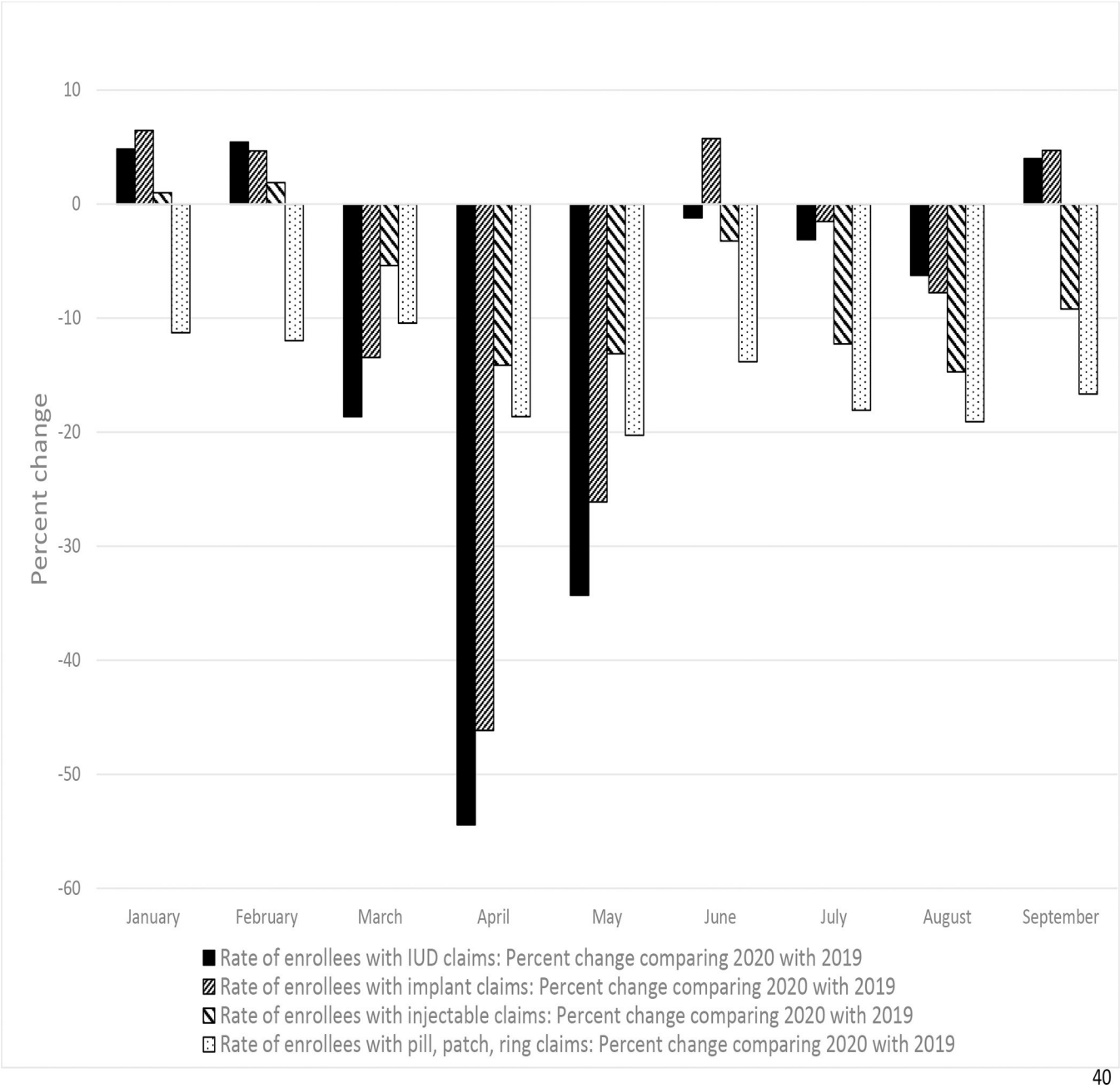

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Figure 2.

Percent change in monthly rates of contraceptive method claims, by method, comparing 2020 with 2019*

* The rates in all months in 2019 were statistically different (z-test; $p<0.05$) from the rates in the same month in 2020 for all contraceptive methods, with the exception of injectables (January and February), IUDs (June), and implants (July).

IUD, intrauterine device

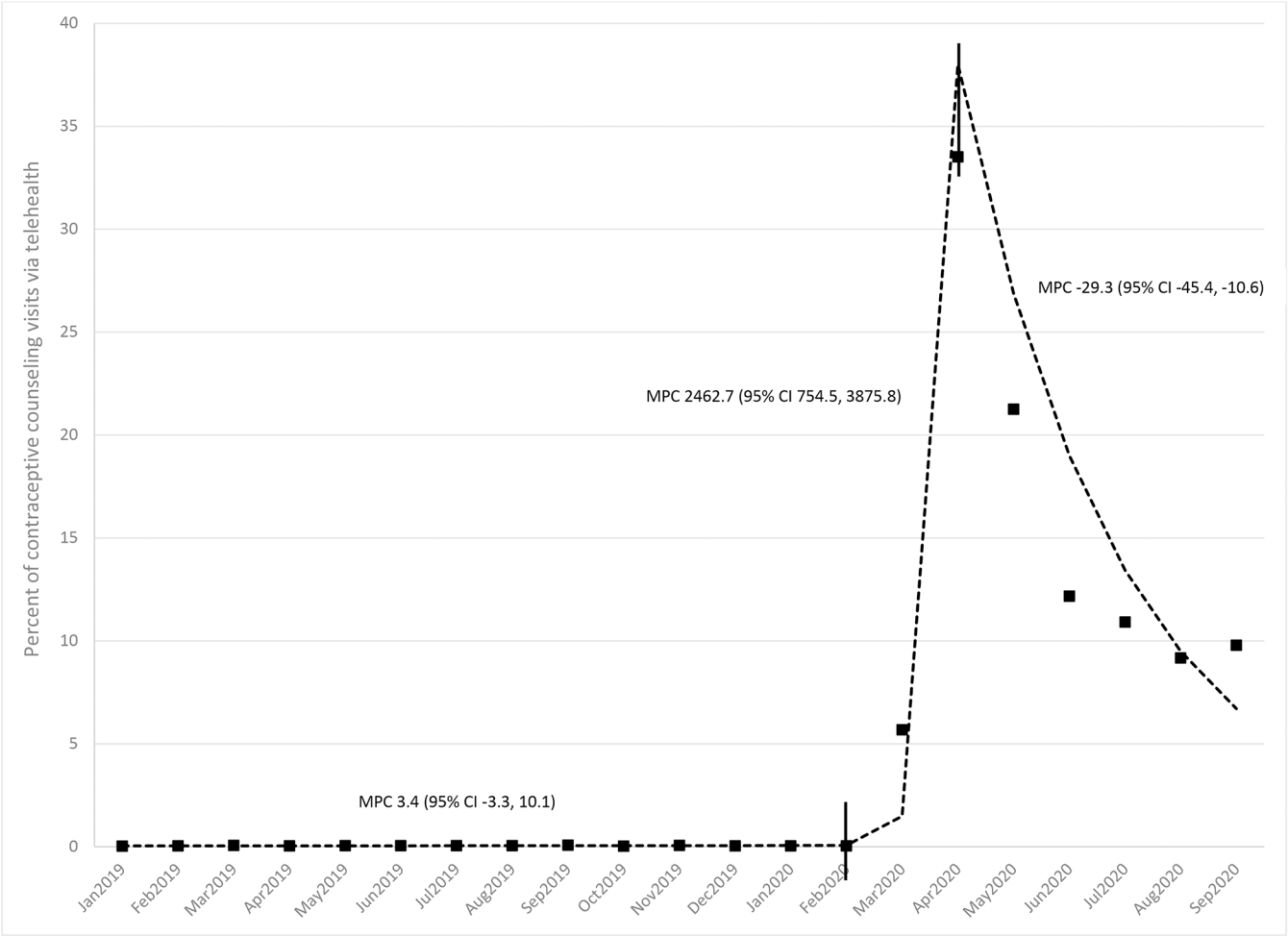

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Figure 3.

Rates of claims for contraceptive counseling visits that occurred via telehealth, January 2019–September 2020. Observed percentages of contraceptive counseling visits that occurred via telehealth are represented by symbol (■), the trend line is represented by the dashed lines, and a change in trend is denoted by symbol (|). The monthly percent change (MPC) and 95% confidence intervals (CI) are provided for each segment. MPCs with 95% confidence intervals that excluded zero were considered statistically significant.

CI, confidence interval; MPC, monthly percent change

Table 1.

Monthly numbers and rates [*] of eligible enrollees [†] with outpatient visits and claims for select contraceptive methods, [‡] January 2019–September 2020 [§, //]

Month	Eligible enrollees N	Outpatient visit claims for any reason n (rate)		Enrollees with IUD claims n (rate)	Enrollees with implant claims n (rate)	Enrollees with injectable claims n (rate)	Enrollees with pill, patch, or ring claims n (rate)
Jan 2019	7,948,805	4,688,935	(589.9)	42,849 (5.4)	10,003 (1.3)	19,445 (2.4)	798,978 (100.5)
Feb 2019	7,926,865	4,314,211	(544.3)	38,873 (4.9)	9,182 (1.2)	16,421 (2.1)	745,328 (94.0)
Mar 2019	8,001,640	4,669,321	(583.5)	42,412 (5.3)	10,068 (1.3)	17,662 (2.2)	794,343 (99.3)
Apr 2019	7,944,829	4,797,227	(603.8)	44,700 (5.6)	10,122 (1.3)	18,553 (2.3)	793,504 (99.9)
May 2019	7,940,596	4,783,552	(602.4)	45,091 (5.7)	10,134 (1.3)	18,700 (2.4)	796,315 (100.3)
Jun 2019	7,872,614	4,312,026	(547.7)	42,004 (5.3)	9,460 (1.2)	17,580 (2.2)	758,361 (96.3)
Jul 2019	7,788,261	4,648,951	(596.9)	45,319 (5.8)	10,455 (1.3)	19,014 (2.4)	779,072 (100.0)
Aug 2019	7,808,346	4,631,017	(593.1)	46,414 (5.9)	10,948 (1.4)	18,665 (2.4)	776,242 (99.4)
Sep 2019	7,796,492	4,311,676	(553.0)	41,662 (5,3)	8,953 (1.1)	17,050 (2.2)	733,130 (94.0)
Oct 2019	7,799,166	4,884,232	(626.3)	46,455 (6.0)	10,207 (1.3)	18,870 (2.4)	754,895 (96.8)
Nov 2019	7,802,640	4,315,056	(553.0)	40,230 (5.2)	8,598 (1.1)	16,265 (2.1)	717,730 (92.0)
Dec 2019	7,803,860	4,366,359	(559.5)	40,609 (5.2)	9,096 (1.2)	18,145 (2.3)	733,451 (94.0)
Jan 2020	7,936,621	4,762,994	(600.1)	44,854 (5.7)	10,633 (1.3)	19,607 (2.5)	707,782 (89.2)
Feb 2020	7,908,134	4,443,575	(561.9)	40,893 (5.2)	9,588 (1.2)	16,690 (2.1)	654,564 (82.8)
Mar 2020	7,908,981	3,965,993	(501.5)	34,112 (4.3)	8,614 (1.1)	16,516 (2.1)	703,174 (88.9)
Apr 2020	7,875,259	3,019,536	(383.4)	20,193 (2.6)	5,402 (0.7)	15,794 (2.0)	639,898 (81.3)
May 2020	7,663,694	3,435,403	(448.3)	28,594 (3.7)	7,227 (0.9)	15,681 (2.0)	612,771 (80.0)
Jun 2020	7,659,082	4,363,750	(569.7)	40,371 (5.3)	9,731 (1.3)	16,548 (2.2)	635,850 (83.0)
Jul 2020	7,636,015	4,639,874	(607.6)	43,044 (5.6)	10,094 (1.3)	16,355 (2.1)	625,807 (82.0)
Aug 2020	7,548,751	4,371,040	(579.0)	42,065 (5.6)	9,761 (1.3)	15,388 (2.0)	607,277 (80.4)
Sep 2020	7,518,781	4,381,477	(582.7)	41,776 (5.6)	9,041 (1.2)	14,931 (2.0)	589,322 (78.4)

IUD, intrauterine device.

[*] Rates per 1,000 eligible enrollees.

[†] Eligible enrollees are females aged 15–49 years of age who were enrolled and eligible for services during each month.

[‡] Enrollees could have had one or more claims for an outpatient visit for any reason or an individual contraceptive method during the month of interest; claims for IUDs, implants, and injectables included those for procedures and surveillance; claims for pills, patch, and ring were from pharmacy claims.

[§]The study population included 9,796,115 females in January–December 2019 and 9,107,419 females in January–September 2020, aged 15–49 years, enrolled in health care coverage, and eligible for services (enrollees).

[//]Among eligible enrollees, there were 54,722,563 outpatient visits for any reason in January–December 2019 and 37,383,642 outpatient visits for any reason in January–September 2020.

Table 2.

Trends in monthly claims rates for contraceptive methods and percentage of contraceptive counseling that occurred via telehealth, among eligible enrollees by contraceptive method or service, and age group, United States, January 2019 – September 2020

Joinpoint trend	All ages (15–49 years)			15–17 years			18–24 years			25–49 years		
	Segment	MPC (95% CI)	Absolute % change*	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change
IUD (all claims)												
1	Jan 2019–Feb 2020	0.3 (−0.7, 1.3)	−4	Jan 2019–Nov 2019	8.2† (5.5, 11.4)	94.0	Jan 2019–Jan 2020	1.1 (−0.6, 3.2)	7.1	Jan 2019–Feb 2020	0.2 (−0.7, 1.1)	−3.2
2	Feb 2020–Apr 2020	−30.6† (−35.4, −20.6)	−50	Nov 2019–Apr 2020	−19.8† (−30.1, −13.8)	−67.5	Jan 2020–Apr 2020	−19.9 (−31.3, 2.1)	−51.8	Feb 2020–Apr 2020	−30.6† (−34.9, −21.5)	−52.1
3	Apr 2020–Jun 2020	41.3† (25.6, 54.3)	105	Apr 2020–Sep 2020	24.7† (16.6, 35.2)	207.9	Apr 2020–Jul 2020	28.7 (−16.4, 50.5)	96.4	Apr 2020–Jun 2020	41.0† (26.9, 52.5)	108.1
4	Jun 2020–Sep 2020	1.7 (−9.0, 8.0)	5	--	--	--	Jul 2020–Sep 2020	−6.1 (−17.0, 12.9)	4.7	Jun 2020–Sep 2020	1.3 (−8.4, 7.0)	4.9
IUD (insertion)												
1	Jan 2019–Feb 2020	0.4 (−0.6, 1.4)	0.9	Jan 2019–Nov 2019	8.1† (5.0–12.1)	101.7	Jan 2019–Feb 2020	0.3 (−1.3, 2.3)	−8.1	Jan 2019–Feb 2020	0.2 (−0.7, 1.3)	3.2
2	Feb 2020–Apr 2020	−29.4† (−33.9, −20.0)	−49	Nov 2019–Apr 2020	−20.5† (−33.4, −13.5)	−71.3	Feb 2020–Apr 2020	−30.2† (−37.1, −8.1)	−48.1	Feb 2020–Apr 2020	−28.2† (−32.9, −17.9)	−49.0
3	Apr 2020–Jun 2020	38.0† (23.9, 50.0)	98	Apr 2020–Sep 2020	26.8† (17.4, 40.3)	254.8	Apr 2020–Jul 2020	35.4† (20.7, 62.0)	151.3	Apr 2020–Jun 2020	35.2† (20.0, 47.9)	93.6
4	Jun 2020–Sep 2020	1.2 (−9.0, 7.5)	2.6	--	--	--	Jul 2020–Sep 2020	−9.1 (−21.2, 10.5)	−13.7	Jun 2020–Sep 2020	0.7 (−10.7, 7.6)	1.5
IUD (removal)												
1	Jan 2019–Feb 2020	0.2 (−0.7, 1.2)	−3	Jan 2019–Nov 2019	10.1† (6.1, 15.3)	133.0	Jan 2019–Jan 2020	1.3† (0.2, 2.7)	6.9	Jan 2019–Feb 2020	0.1 (−0.7, 1.1)	−1.7

Joinpoint trend		All ages (15–49 years)			15–17 years			18–24 years			25–49 years		
		Segment	MPC (95% CI)	Absolute % change*	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change
	2	Feb 2020–Apr 2020	−26.8† (−31.8, −17.3)	−47	Nov 2019–Apr 2020	−24.7† (−40.9, −16.2)	−73.9	Jan 2020–Apr 2020	−16.6† (−25.9, −10.1)	−40.0	Feb 2020–April 2020	−27.6† (−32.4, −17.9)	−49.8
	3	Apr 2020–Jun 2020	46.7† (30.9, 59.3)	127	Apr 2020–Sep 2020	28.8† (16.3, 48.0)	238.4	Apr 2020–Jun 2020	36.6† (19.2, 49.3)	87.5	Apr 2020–Jun 2020	48.3† (32.2, 60.9)	133.9
	4	Jun 2020–Sep 2020	−2.9 (−11.1, 2.8)	−7	--	--	--	Jun 2020–Sep 2020	−3.2 (−14.4, 3.3)	−9.5	Jun 202–Sep 2020	−2.9 (−10.4, 2.8)	−6.8
Implant (all claims)													
	1	Jan 2019–Feb 2020	0.01 (−1.0, 1.4)	−4	Jan 2019–Dec 2019	4.2† (2.0–7.0)	44.3	Jan 2019–Feb 2020	−0.3 (−1.7, 1.9)	−10.8	Jan 2019–Sep 2020	−0.5 (−1.6, 0.6)	−1.1
	2	Feb 2020–Apr 2020	−23.9† (−29.5, −10.4)	−43	Dec 2019–Apr 2020	−20.2† (−36.1, −12.1)	−64.9	Feb 2020–Apr 2020	−22.8† (−29.7, −4.2)	−42.7	--	--	--
	3	Apr 2020–Jun 2020	33.4† (16.1, 46.7)	85	Apr 2020–Sep 2020	18.1† (10.6, 28.9)	142.8	Apr 2020–Jul 2020	26.6† (14.5, 50.3)	107.2	--	--	--
	4	Jun 2020–Sep 2020	−1.5 (−12.9, 6.4)	−5	--	--	--	Jul 2020–Sep 2020	−12.1 (−23.2, 4.8)	−18.3	--	--	--
Implant (insertion)													
	1	Jan 2019–Sep 2020	−1.1 (−2.2, 0.1)	−9	Jan 2019–Dec 2019	4.0† (1.3, 8.2)	37.7	Jan 2019–Sep 2020	−1.3 (−2.6, 0.1)	−18.6	Jan 2019–Sep 2020	−1.0† (−1.9, −0.1)	−4
	2	--	--	--	Dec 2019–Apr 2020	−20.9† (−39.5, −10.6)	−66.4	--	--	--	--	--	--
	3	--	--	--	Apr 2020–Sep 2020	17.9† (8.8, 34.7)	135.6	--	--	--	--	--	--
Implant (removal)													
	1	Jan 2019–Feb 2020	0.0 (−1.0, 1.6)	−7	Jan 2019–Dec 2019	6.7† (4.2, 10.2)	95.1	Jan 2019–Feb 2020	−0.1 (−1.3, 2.3)	−8.2	Jan 2019–Sep 2020	0.1 (−1.2, 1.5)	4.5

Joinpoint trend	All ages (15–49 years)			15–17 years			18–24 years			25–49 years		
	Segment	MPC (95% CI)	Absolute % change*	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change
2	Feb 2020–Apr 2020	−21.4† (−28.1, −8.7)	−43	Dec 2019–Mar 2020	−25.2† (−39.9, −11.7)	−21.8	Feb 2020–Apr 2020	−21.6† (−29.0, −6.2)	−38.6	--	--	--
3	Apr 2020–Jun 2020	42.7† (23.1, 58.4)	106	Mar 2020–Sept 2020	15.8† (9.6, 25.1)	91.1	Apr 2020–Jun 2020	47.5† (23.5, 66.3)	113.2	--	--	--
4	Jun 2020–Sep 2020	−4.8 (−16.5, 2.5)	−12	--	--	--	Jun 2020–Sep 2020	−7.2 (−20.9, 1.2)	−18.4	--	--	--
Injectable												
1	Jan 2019–Sep 2020	−0.7† (−1.2, −0.2)	−19	Jan 2019–Dec 2020	4.1† (2.8, 5.8)	44.4	Jan 2019–Sep 2020	−1.0† (−1.6, −0.4)	−26.7	Jan 2019–Sep 2020	−0.6† (−1.0, −0.2)	−17.5
2	--	--	--	Dec 2020–Feb 2020	−23.1† (−27.6, −10.5)	−35.7	--	--	--	--	--	--
3	--	--	--	Feb 2020–Sep 2020	4.0† (1.6, 7.4)	17.3	--	--	--	--	--	--
Pill/patch/ring												
1	Jan 2019–Jul 2019	0.2 (−1.0, 3.8)	−5	Jan 2019–Dec 2019	3.8† (3.0, 4.9)	52.7	Jan 2019–Sep 2020	−1.3† (−1.6, −1.0)	−23.1	Jan 2019–Sep 2020	−1.4† (−1.6, −1.2)	−24.6
2	Jul 2019–Sep 2020	−1.7† (−2.7, −1.4)	−22	Dec 2019–Feb 2020	−22.3† (−25.9, −12.6)	−37.1	--	--	--	--	--	--
3	--	--	--	Feb 2020–Sep 2020	3.8† (1.9, 6.4)	22.2	--	--	--	--	--	--
Percent of contraceptive counseling visits via telehealth												
1	Jan 2019–Feb 2020	3.4 (−3.3, 10.1)	53.0	Jan 2019–Feb 2020‡	−1.1 (−8.1, 6.0)	0	Jan 2019–Feb 2020	−4.5 (−15.0, 5.7)	−38.3	Jan 2019–Feb 2020	3.6 (−3.5, 10.5)	67.0
2	Feb 2020–Apr 2020	2462.7† (754.5, 3875.8)	89373.2	Feb 2020–Apr 2020	722.2† (382.0, 2018.3)	31,106.6	Feb 2020–Apr 2020	3963.5† (679.9, 8057.4)	227,985.9	Feb 2020–Apr 2020	2278.2† (698.0, 3650.4)	75,681.4

Joinpoint trend	All ages (15–49 years)			15–17 years			18–24 years			25–49 years		
	Segment	MPC (95% CI)	Absolute % change*	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change	Segment	MPC (95% CI)	Absolute % change
3	Apr 2020–Sep 2020	−29.3† (−45.4, −10.6)	−70.8	Apr 2020–Sep 2020	−23.8† (−40.5, −5.7)	−71.4	Apr 2020–Sep 2020	−30.0 (−60.1, 1.2)	−67.3	Apr 2020–Sep 2020	−29.3† (−46.2, −9.9)	−72.2

IUD, intrauterine device; MPC, monthly percent change; CI, confidence interval

*absolute percent change: calculated as the percent change in observed crude claims rates comparing the first and last months of the segment

†indicates that MPC is significantly different from zero at the alpha=0.05 level

‡For the percent of contraceptive counseling visits via telehealth among 15–17-year-olds, the Joinpoint program added 0.5 to numerators equal to zero (i.e., no visit claims reported), in order to fit weighted least-squares regression models on the logarithmic scale.