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Trends in Postpartum Contraceptive Use in 20 U.S. States and Jurisdictions: The Pregnancy Risk Assessment Monitoring System, 2015–2018

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Abstract

Introduction: In the last decade, state and national programs and policies aimed to increase access to postpartum contraception; however, recent data on population-based estimates of postpartum contraception is limited.

Methods: Using Pregnancy Risk Assessment Monitoring System data from 20 sites, we conducted multivariable-adjusted weighted multinomial regression to assess variation in method use by insurance status and geographic setting (urban/rural) among people with a recent live birth in 2018. We analyzed trends in contraceptive method use from 2015 to 2018 overall and within subgroups using weighted multinomial logistic regression.

Results: In 2018, those without insurance had lower odds of using permanent methods (adjusted odds ratio [AOR], 0.72; 95% confidence interval [CI], 0.53–0.98), long-acting reversible contraception (LARC) (AOR, 0.67; 95% CI, 0.51–0.89), and short-acting reversible contraception (SARC) (AOR, 0.61; 95% CI, 0.47–0.81) than those with private insurance. There were no significant differences in these method categories between public and private insurance. Rural respondents had greater odds than urban respondents of using all method categories: permanent (AOR, 2.15; 95% CI, 1.67–2.77), LARC (AOR, 1.31; 95% CI, 1.04–1.65), SARC (AOR, 1.42; 95% CI, 1.15–1.76), and less effective methods (AOR, 1.38; 95% CI, 1.11–1.72). From 2015 to 2018, there was an increase in LARC use (odds ratio [OR], 1.03; 95% CI, 1.01–1.05) and use of no method (OR, 1.05; 95% CI, 1.02–1.07) and a decrease in SARC use (OR, 0.97; 95% CI, 0.95–0.99). LARC use increased among those with private insurance (OR, 1.05; 95% CI, 1.02–1.08) and in urban settings (OR, 1.04; 95% CI, 1.02–1.07), but not in other subgroups.

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Conclusions: We found that those without insurance had lower odds of using effective contraception and that LARC use increased among those who had private insurance and lived in urban areas. Strategies to increase access to contraception, including increasing insurance coverage and investigating whether effectiveness of existing initiatives varies by geographic setting, may increase postpartum contraceptive use and address these differences.

Postpartum contraception has important health benefits, including preventing short-interval pregnancies (de Bocanegra et al., 2014), which may increase the risk of preterm birth, low birth weight, and infant mortality (Ahrens et al., 2019; Conde-Agudelo et al., 2006; McKinney et al., 2017). Clinical, public health, and policy efforts have aimed to increase access to postpartum contraception, in particular long-acting reversible contraception (LARC) (Centers for Medicare & Medicaid Services, n.d. a; National Institute for Children’s Health Quality, 2016; Wachino, 2016a; American College of Obstetricians and Gynecologists, 2017; The Association of State and Territorial Health Officials, 2021). Ensuring access to the full range of contraceptive methods supports reproductive autonomy and allows people to choose the method that best meets their personal needs (Gomez et al., 2014; Gubrium, et al., 2016; Higgins et al., 2016; Kroelinger et al., 2019).

As of September 2010, the Affordable Care Act (ACA) requires many insurance plans to provide in-network coverage without cost-sharing of certain recommended clinical preventive services, including all U.S. Food and Drug Administration–approved contraceptive methods (Centers for Medicare & Medicaid Services, n.d. b). Since January 1, 2014, states have had the option to extend Medicaid coverage to most nonelderly adults with incomes up to 133% of the federal poverty level (Patient Protection and Affordable Care Act, 2010). These policy changes decreased the financial burden of using contraception for individuals across the United States (Becker & Polsky, 2015). Additionally, many states have made changes to Medicaid policies by establishing or increasing reimbursement for immediate postpartum LARC insertion to include payment for LARC device and insertion fees received immediately after childbirth outside of the global obstetric fee for labor and delivery services (Wachino, 2016b; Moniz et al., 2015). Beyond policy changes, many national and state initiatives have explored strategies for increasing access to postpartum contraception more broadly, such as provider training initiatives, efforts to increase same-day method access, and supporting provider champions to implement changes in reimbursement policies and disseminate evidence-based best practices to other providers (Hofler et al., 2018; Kroelinger et al., 2019; McNicholas et al., 2014; Okoroh et al., 2018; Rodriguez et al., 2014).

Despite these changes at the federal and state levels, limited research exists on how national trends in postpartum contraceptive use have changed in the last decade. Additionally, existing evidence on disparities in contraceptive method use is mixed, especially regarding variation between different insurance types and in urban versus rural settings (Borrero et al., 2007; Bruce, et al., 2020; Daniels et al., 2015; Geske et al., 2016; Kavanaugh et al., 2019; Robbins et al., 2018; Snyder et al., 2018; Starr et al., 2015; Travers et al., 2017; White et al., 2013). This study aimed to analyze changes in the use of types of contraceptive methods in the postpartum period from 2015 to 2018 and to determine whether there are differences

in postpartum contraceptive method use by insurance status and geographic setting (rural vs. urban) in 2018.

Methods

Study Design and Participants

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project that collects data on pregnancy and the postpartum period in a population-based sample of people living in the United States and U.S. territories who have given birth between 2 and 6 months before receiving the questionnaire. PRAMS then links these data with birth certificate data from which respondents were sampled. Sampling methodology and data collection tools are standardized for all participating sites, allowing for valid comparisons between jurisdictions and easy aggregation of data. Data are weighted to account for sampling strategy, oversampling of certain populations, nonresponse, and noncoverage. From 2015 to 2017, PRAMS required a minimum response rate of 55% for the release of data, and starting in 2018 this was revised to 50% (Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, 2021; Shulman et al., 2018). The PRAMS protocol was approved by the Institutional Review Boards of the Centers for Disease Control and Prevention and each participating PRAMS site. Deidentified data are available by request without additional institutional review board review, with Centers for Disease Control and Prevention and participating sites given the opportunity to review analytical proposals.

For this study, we used PRAMS data representing births from 2015 to 2018 collected in the 20 PRAMS sites that met the minimum response rate threshold for all years included in the analysis ($n = 93,911$). One additional site met the minimum response rate for all 4 years, but did not report race/ethnicity data and was excluded. The included sites were Alaska, Colorado, Connecticut, Delaware, Illinois, Louisiana, Massachusetts, Maine, Michigan, Missouri, New Jersey, New Mexico, Pennsylvania, Utah, Virginia, Washington, Wisconsin, West Virginia, Wyoming, and New York City. We excluded respondents who reported at the time of the survey that they were currently pregnant, trying to become pregnant, were not having sex, or were in a same-sex partnership ($n = 9,183$). An additional 7,976 respondents with missing data on contraceptive use or independent variables of interest, including covariates, were excluded.

PRAMS does not collect data on the gender identity of participants. In recognizing that trans men and nonbinary people can also give birth, we use gender-neutral terms when referring to our own findings. When referencing other research that refers specifically to women, we have maintained that wording to align with that research.

Variables

Our primary outcome variable was type of postpartum contraceptive method used at the time the survey was taken (2–6 months after a live birth). Based on pregnancy rates with typical use, type of contraception was categorized into most effective permanent (including male and female sterilization), most effective reversible (LARC, including intrauterine devices

and contraceptive implants), moderately effective short-acting reversible contraception (SARC, including oral contraceptive pills, patches, rings, and injectable birth control), less effective contraception (including condoms, natural family planning, and withdrawal), and no contraception (Trussell et al., 2018). If a respondent was using multiple methods of contraception, they were categorized based on the most effective method they were using; for example, if someone was using an intrauterine device and condoms, we considered their intrauterine device to be their primary method of preventing pregnancy.

Information on method choice and insurance type were derived from PRAMS, and maternal geographic setting (urban vs. rural), age, race/ethnicity, and parity were derived from the birth certificate. Health insurance was the type of insurance at the time of the survey because our focus was postpartum contraceptive use and because a higher proportion of responses were reported as missing or other for health insurance at childbirth (10.3%) versus time of survey (6.2%). However, among those who reported both, a majority (87%) had the same insurance type at the time of childbirth and the time the survey was taken. Health insurance was categorized into private, public (including Medicaid and the Children's Health Insurance Program), and none. Geographic setting was categorized into urban and rural based on the National Center for Health Statistics Classification for Counties (National Center for Health Statistics, 2017). Potential confounders in the relationship between exposures of interest (insurance and rurality) and the outcome of contraceptive method use included race/ethnicity, parity, and maternal age. Race/ethnicity was categorized into Non-Hispanic (NH) White, NH Black, Hispanic, NH Asian, NH American Indian/Alaska Native, and multiple or other. Parity was treated as a categorical variable: no previous live births and at least one previous live birth. Maternal age was grouped into seven categories: 17 or younger, 18 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, and 40 or more years. Year represents the infant year of birth and was treated as a continuous variable. Additional variables that were used to describe the sample included prenatal contraceptive counseling, breastfeeding status, pregnancy intentions, and postpartum checkup attendance. Because these variables do not fall on confounding pathways, they were not controlled for in multivariable analysis but were included in Table 1.

Statistical Methods

We summarized sample characteristics both for 2015 to 2018 combined and for 2018 only using unweighted frequencies and weighted percentages. For 2018, we used weighted multinomial logistic regression to estimate the associations of health insurance at time of survey and geographic setting with type of contraceptive used. We report odds ratios (ORs) adjusted for race/ethnicity, age, and parity as potential confounders in the relationship between exposure variables (insurance and geographic setting) and the outcome variable (contraceptive method use). For 2015 to 2018, we assessed trends using weighted logistic regression with year as the independent variable, both in the overall sample and by insurance type and geographic setting (i.e., urban, rural). Overall and stratified trend analyses were adjusted for race/ethnicity, age, and parity.

We found that 9.4% of eligible participants in 2015–2018 were missing data for at least one covariate; because the percentage of participants with missing data was reasonably

low, we conducted a complete case analysis and did not use imputation (Hughes et al., 2019). Per variable missingness was highest for postpartum insurance, at 6.2%, followed by contraceptive method, at 3.4%. Efforts were made to reduce missing data by recategorizing write-in categories when possible. Statistical significance was set a priori to $\alpha = 0.05$. All data management and analyses were conducted using MS Excel and SAS Enterprise Guide (Version 7.1; SAS Institute, Cary, NC).

Results

Participant Characteristics

Our final sample size was 76,412, representing 4,086,983 or 26.25% of births in the United States for 2015 to 2018, with 18,250 representing 991,868 or 26.16% of births in the United States for 2018 only (Table 1). In this sample, 59.1% of participants were covered by private insurance, 31.4% had public insurance, and 9.5% had no insurance. Most participants (87.7%) lived in urban settings, and 12.3% lived in rural settings. Additional participant characteristics are described in Table 1.

Associations Between Demographics and Postpartum Contraceptive Method Use 2018

In 2018, 12.5% of those who recently gave birth to a live infant were using permanent methods at the time of survey; 18.9% were using LARC, 26.3% were using SARC, 26.7% were using less effective methods, and 15.7% were using no contraceptive method (Table 1). After adjusting for covariates, respondents with public insurance at the time of the survey had lower odds of using less effective methods (adjusted OR [AOR]: 0.67; 95% confidence interval [CI], 0.56–0.79) than those with private insurance (ref: no method), but there were no other statistically significant differences in contraceptive method use between those with public versus private insurance (Table 2). Compared with those with private insurance, those with no insurance had lower odds of using permanent contraception (AOR, 0.72; 95% CI, 0.53–0.98), LARC (AOR, 0.67; 95% CI, 0.51–0.89), and SARC (AOR, 0.61; 95% CI, 0.47–0.81) versus no method, but there was no statistically significant difference in use of less effective methods. Compared with respondents from urban settings, respondents from rural settings had 2.15 times the odds of using permanent contraception (95% CI, 1.67–2.77), 1.31 times the odds of using LARC (95% CI, 1.04–1.65), 1.42 times the odds of using SARC (95% CI, 1.15–1.76), and 1.38 times the odds of using less effective methods (95% CI, 1.11–1.72) compared with no method.

Trends in Postpartum Contraceptive Use: 2015 to 2018

From 2015 through 2018, LARC use increased overall from 17.8% in 2015 to 18.7% in 2018 (OR, 1.03; 95% CI, 1.01–1.05) (Table 3). However, use of no method also increased from 13.7% in 2015 to 15.8% in 2018 (OR, 1.05; 95% CI, 1.02–1.07). The greatest increase in nonuse was seen between 2015 and 2016 (from 13.7% to 15.4%), with a more stable proportion of nonuse in 2017 (15.3%) and 2018 (15.8%). Use of SARC decreased from 28.8% to 26.3% (OR, 0.97; 95% CI, 0.95–0.99). There were no statistically significant changes in use of permanent methods or less effective methods.

Among those with private insurance, LARC use increased over time from 15.9% in 2015 to 17.4% in 2018 (OR, 1.05; 95% CI, 1.02–1.08), whereas SARC use decreased from 27.3% to 25.5% (OR 0.97; 95% CI, 0.95–1.00). Among those with public insurance, SARC use decreased from 32.9% in 2015 to 29.4% in 2018 (OR, 0.95; 95% CI, 0.92–0.98) and use of no method increased from 12.9% to 17.0% (OR, 1.11; 95% CI, 1.06–1.16). Among those with no insurance, there were no significant trends over time.

Among respondents in urban areas, there was an increase in LARC use from 17.4% in 2015 to 18.7% in 2018 (OR, 1.04; 95% CI, 1.02–1.07) and the use of no method from 14.2% to 16.4% (OR, 1.05; 95% CI, 1.02–1.08), and a decrease in SARC use from 28.3% to 26.0% (OR, 0.97; 95% CI, 0.95–0.99) and the use of less effective methods from 28.7% to 27.2% (OR, 0.97; 95% CI, 0.95–0.99). In rural settings, there was an increase in the use of less effective methods from 20.7% in 2015 to 25.5% in 2018 (OR, 1.09; 95% CI, 1.03–1.16) and a decrease in the use of SARC methods from 32.5% to 28.1% (OR, 0.93; 95% CI, 0.88–0.98).

Discussion

Findings from this study highlight that, among a national sample of people with a recent live birth from 20 jurisdictions, postpartum LARC use increased overall from 2015 to 2018 and the use of no contraceptive method also increased. Much of the increase in nonuse was seen from 2015 to 2016. We found that respondents without insurance at the time of the survey had lower odds of using permanent, LARC, and SARC methods in 2018 compared with those with private insurance, and that use of contraception among this group did not shift significantly from 2015 to 2018. Additionally, in 2018 respondents in rural settings had greater odds of using contraception across all method categories compared with no method.

Barriers that can impact postpartum contraceptive care may occur both immediately postpartum and throughout the postpartum period. Barriers to postpartum contraceptive care may include insufficient providers trained on insertion and removal of methods, disparate provider counseling, lack of same-day availability of methods, barriers related to insurance coverage, and the level of provider reimbursement for LARC insertion immediately postpartum (Aiken et al., 2015; Fuerst & George, 2020; Kroelinger et al., 2017; Oduyebo et al., 2019; Power to Decide, n.d.; Rodriguez et al., 2014). Multiple large-scale programs and research studies that focused on reducing barriers to contraceptive access, such as the Contraceptive CHOICE Project (McNicholas et al., 2014) and the Zika Contraception Access Network (Lathrop et al., 2018; 2020), have reported that when women were provided patient-centered contraceptive counseling and choice among the full range of contraceptive methods at low or no cost and on the same day, coupled with enhanced provider training, use of contraception increased, particularly LARC methods (Biggs et al., 2015; Lathrop, et al., 2018; 2020; Peipert et al., 2014; Ricketts et al., 2014; Secura et al., 2010). These large-scale studies underscore that, when multicomponent strategies to improve access to contraception are implemented, women of reproductive age are more likely to use highly effective contraceptive methods. Given our findings that postpartum contraceptive nonuse increased over time, and the known benefits of postpartum contraception, implementing strategies demonstrated to address barriers to accessing contraceptive care can increase use.

Implementation strategies can consider geographically specific context such as rurality and variation in state-level policies.

Although changes in contraceptive coverage that followed implementation of the ACA and expansion of Medicaid decreased out-of-pocket costs for many insured individuals (Becker & Polsky, 2015; Bearak et al., 2016; Finer et al., 2014; Sonfield et al., 2015) and have been associated with increased use of contraceptives (Carlin et al., 2016; Chuang, et al., 2015; Law et al., 2016; Snyder et al., 2018), differences in uptake by insurance status remain. Our results highlight that in 2018, postpartum people without insurance at the time of the survey had lower odds of using permanent methods, LARC, and SARC compared with those with private insurance coverage, but there were no significant differences in use of those method categories between respondents with public and private insurance. Additionally, there were no significant changes in contraceptive method use from 2015 to 2018 among people without postpartum insurance. Many group and individual health insurance plans, including Medicaid plans for those newly eligible by the ACA's Medicaid expansion, are required to cover recommended preventive services for women of reproductive age without cost sharing when provided in network, including contraceptive counseling, initiation of contraceptive use, and follow-up care such as the management, evaluation, and removal or discontinuation of the contraceptive method (Health Resources & Services Administration, 2020; Centers for Medicare & Medicaid Services, n.d. c). Moreover, previous research has reported that women with private and public health insurance are more likely than those without insurance to report using contraception, including LARC and SARC methods (Kavanaugh et al., 2019). Our findings, in concert with existing literature that demonstrates those without insurance coverage have lower rates of contraception use (Culwell & Feinglass, 2007; Nearn, 2009), and that lack of insurance acts as a barrier to preventive services (Sudano & Baker, 2003), suggest postpartum people without insurance coverage may face unique barriers to accessing effective contraception.

In 2018, respondents in rural areas had greater odds of using all categories of contraception compared with those in urban areas. Our study adds to the mixed findings of U.S.-based studies on contraceptive method use. Although some studies have similarly found women in rural areas were more likely to use effective contraception (Damm et al., 2013; Travers et al., 2017), others have found those in urban settings more likely to use effective contraception (Geske et al., 2016), and still others found no significant difference between rural and urban settings (Snyder et al., 2018). However, most previous studies have used smaller, single-state samples (Bruce et al., 2020; Damm et al., 2013; Geske et al., 2016; Travers et al., 2017). The findings from this multistate, multiyear sample suggest that, across method types, postpartum people in rural settings are more likely to use effective contraception, and that urban nonuse increased from 2015 to 2018. This difference was especially pronounced in the use of permanent contraception; even after adjusting for insurance type, age, race/ethnicity, and parity, respondents from rural settings had more than twice the odds of using permanent methods. Furthermore, despite increased LARC use in urban settings from 2015 to 2018, those in rural areas still had 1.31 times the odds of using LARC in 2018 compared with those in urban areas. Noted barriers to health care access and service use in rural areas include a dearth of local health care personnel and longer travel distances to care (National Center for Chronic Disease Prevention and Health Promotion, 2019). Although we found

differences in urban versus rural populations, the data are limited in their ability to explain what is driving these differences. There may be differences in the facilitators and barriers to accessing contraceptive options for people in urban areas compared with rural areas. For example, one analysis found that women in rural settings with more limited access to health care services may be more inclined to select longer term or permanent methods to avoid the need for more regular follow-up with a health care provider (Travers et al., 2017). Recent national and state-level efforts to increase access to contraception included initiatives to improve access to contraception in rural areas (Kroelinger, et al., 2017; The Association of State and Territorial Health Officials, 2015; 2016). To ensure that postpartum people have access to and counseling on a full range of methods regardless of their geographic setting, future studies can investigate what is driving differences in contraceptive use between rural and urban populations.

The postpartum period is an important time for birthing people to have equitable access to a full range of contraceptive methods (Rodriguez et al., 2014). LARC use up to 6 months postpartum has been reported as higher than LARC use in general, which other studies suggest may be due in part to the motivation to avoid rapid repeat or unintended pregnancy and the increased availability of services and insurance coverage during pregnancy and the postpartum period (Cohen et al., 2016; de Bocanegra et al., 2014). However, Medicaid eligibility in the postpartum period varies by state. For instance, states have different eligibility thresholds for low-income adults, and states that have adopted Medicaid expansion have higher income eligibility thresholds than states that have not (Biggs et al., 2015; Brooks et al., 2020; Haley & Johnston, 2021). Additionally, although federal law requires that states extend pregnancy-related Medicaid eligibility through 60 days postpartum for women with incomes up to 138% of the federal poverty level, the decision to continue coverage beyond those 60 days varies by state (Social Security Act, § 1902; Centers for Medicare & Medicaid Services, 2020). For example, in April, 2021, Illinois became the first state to expand postpartum Medicaid coverage for up to 1 year after childbirth (U.S. Department of Health and Human Services, 2021). Some states have used the section 1115 waiver process for such extensions, and others are using an option available under the American Rescue Plan for five years to offer 12 months of postpartum Medicaid coverage (American Rescue Plan Act of 2021, 2021; Ranji et al., 2021). Alternatively, states can apply to the Centers for Medicare and Medicaid Services for a waiver to extend coverage for 12 months postpartum under section 1115 of the Social Security Act as a strategy for increasing access to contraception and other preventive health services (Centers for Medicare and Medicaid Services, 2021). States may also explore strategies of revising payment methodologies for immediate postpartum LARC reimbursement (Wachino, 2016a; 2016b). Additionally, states may consider supporting provider training to increase capacity to effectively deliver quality family planning services and offer a full range of methods (Edwards & O'Neill, 2018; Ricketts et al., 2014). Such efforts align with clinical guidance for pregnant and postpartum patients to receive patient-centered counseling about the full range of postpartum contraceptive options in a context that supports informed decision making and increases same-day access when desired (American College of Obstetricians Gynecologists Committee on Obstetric Practice, 2016; Curtis, Jatlaoui, et al., 2016; Curtis, Tepper, et al., 2016; Gavin et al., 2014).

Although our study provides a recent multistate analysis on variation in postpartum contraceptive method use, we note some key limitations. PRAMS relies on self-reported data, which may lead to social desirability bias in the reporting of sexual behaviors, such as contraceptive use. Although this may lead to slightly inaccurate reporting of overall contraceptive use, research suggests that social desirability bias is not significantly associated with demographic characteristics (Crutzen & Göritz, 2010), and therefore should not have significantly altered our overall results. The insurance variable was based on insurance at the time of the survey; however, respondents are surveyed between 2 and 6 months postpartum and some respondents had a different insurance status immediately postpartum than they had at the time the survey was taken, which could have impacted their use of contraceptive methods. Rurality was defined using a binary variable at the county level, which does not capture granularity in geographic environments. Permanent contraception was not disaggregated between male and female sterilization, so this study does not demonstrate which of the two is driving use of permanent contraception. This analysis only included states that participate in PRAMS and met the minimum sampling requirement for all years from 2015 to 2018. Although states were included from regions across the United States, the results may not be generalizable to states not included in this analysis, particularly those that did not meet PRAMS response rate thresholds. It is also possible that bias may have resulted from excluding participants with missing data on outcomes of interest. Furthermore, these aggregate multistate findings may mask state-specific patterns. Additional state-level research could inform state and local programmatic and policy decisions. Because this is a cross-sectional study, causality cannot be inferred.

Conclusions

In 2018, among people in the postpartum period 2–6 months after giving birth, those without insurance coverage had lower odds of using effective contraceptive methods, which may be attributable to barriers to accessing contraceptive services for people without insurance. Birthing people living in rural areas had greater odds of using all methods types; further research is needed to better explain differences by urbanicity and higher nonuse in urban areas. From 2015 to 2018, postpartum use of LARC increased from 17.8% to 18.7% and use of no contraceptive method increased from 13.7% to 15.8%. This finding suggests that, although the use of highly effective methods may be increasing, contraceptive nonuse postpartum is also increasing and has implications for short interpregnancy intervals.

Implications for Practice and/or Policy

Strategies to address barriers to accessing contraceptive care may increase use. The Centers for Medicare and Medicaid Services allows states to adopt policies that pay providers the full cost of insertion procedures and device costs associated with immediate postpartum LARC and provides guidance for facilities and providers on reimbursement as a strategy to improve access (Wachino, 2016a, 2016b). Other policy and practice changes that address barriers beyond the immediate postpartum period, such as removal of step therapy requirements and same-day provision of methods, can improve access for all people of reproductive age (Fuerst & George, 2020; Gomez et al., 2014; Kroelinger et al., 2015, 2019; Oduyebo et al., 2019). Support for provider training on quality family planning services

and administration of a full range of methods can also improve availability and same-day access across insurance types and geographic settings (Gomez et al., 2014; Kroelinger, et al., 2015; Kroelinger et al., 2019). Additionally, studies have found that policies that increase insurance coverage improve access to and lead to greater use of contraceptive services, particularly for LARC methods (Darney et al., 2020; Dunlop et al., 2020; Gibbs et al., 2021; Moniz et al., 2018). Finally, given that contraceptive nonuse was higher among postpartum populations in urban settings in 2018, further investigation is needed to determine whether the effectiveness of existing policies and programs varies by geographic setting, or whether these variations may be attributable to other barriers.

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Table 1
Participant Characteristics, Pregnancy Risks Assessment Monitoring System in 20 Jurisdictions, * 2015–2018

Variable	Participant Characteristics: 2015–2018		Participant Characteristics: 2018 Only	
	Unweighted Frequency	Weighted Percent	Unweighted Frequency	Weighted Percent
Contraceptive method				
Permanent	9,824	11.9	2,350	12.5
LARC	15,498	18.4	3,741	18.9
SARC	21,256	27.8	4,858	26.3
Less effective	18,926	26.9	4,526	26.7
None	11,248	15.0	2,841	15.7
Postpartum insurance[†]				
Private or military	41,656	59.1	10,204	59.9
Public	28,005	31.4	6,417	31.1
None	7,091	9.5	1,695	9.0
Geographic setting				
Urban	64,355	87.7	15,471	87.7
Rural	12,397	12.3	2,845	12.3
Race/ethnicity				
NH White	40,617	62.0	9,514	61.8
NH Black	13,987	12.9	3,405	12.7
Hispanic	11,627	15.6	2,891	15.8
NH Asian	5,227	5.8	1,261	6.1
NH American Indian/Alaskan Native	2,231	0.7	496	0.6
Multiple or other	3,063	3.0	749	2.9
Maternal age				
17	924	1.0	193	0.9
18–19	2,614	2.8	551	2.6
20–24	14,355	17.7	3,213	16.9
25–29	22,615	29.5	5,238	29.0
30–34	22,645	30.7	5,645	31.1
35–39	11,190	15.1	2,838	16.1

Variable	Participant Characteristics: 2015–2018		Participant Characteristics: 2018 Only	
	Unweighted Frequency	Weighted Percent	Unweighted Frequency	Weighted Percent
40	2,409	3.2	638	3.4
Previous live births				
None	29,226	37.9	6,914	37.7
1	47,526	62.1	11,402	62.3
Prechildbirth contraceptive counseling				
Received	17,045	42.0	5,566	41.7
Did not receive	22,444	58.0	7,337	58.3
Missing	37,263		5,413	
At most recent pregnancy, respondents wanted to become pregnant				
Sooner	10,636	14.4	2,598	14.4
Then	32,714	45.2	7,865	45.4
Later	15,061	19.5	3,444	18.8
Did not want then or any time	4,883	5.9	1,157	6.3
Was not sure	12,393	15.0	3,025	15.1
Missing	1,065		227	
Breastfeeding				
Ever	66,013	87.9	15,869	88.2
Never	9,486	12.1	2,166	11.8
Missing	1,253		281	
Postpartum checkup				
Received	69,133	91.3	16,513	91.4
Did not receive	7,375	8.7	1,734	8.6
Missing	224		69	

Abbreviations: LARC, long-acting reversible contraception, including intrauterine devices and contraceptive implants; NH, non-Hispanic; SARC, short-acting reversible contraception, including contraceptive pills, patches, rings, and injections.

* Jurisdictions included were Alaska, Colorado, Connecticut, Delaware, Illinois, Louisiana, Massachusetts, Maine, Michigan, Missouri, New Jersey, New Mexico, Pennsylvania, Utah, Virginia, Washington, Wisconsin, West Virginia, Wyoming, and New York City.

[†] Insurance coverage at the time the respondent completed the Pregnancy Risks Assessment Monitoring System survey.

Table 2

Odds of Using Contraceptive Method Categories Compared With No Method, Pregnancy Risks Assessment Monitoring System Respondents in 20 Jurisdictions, * 2018

Variable	Contraceptive Method (Ref: None)	Adjusted [‡] Odds Ratio Estimates (95% Confidence Interval)
Insurance [†] (ref: private)		
Public	Permanent	1.07 (0.87–1.31)
	LARC	0.91 (0.76–1.09)
	SARC	0.91 (0.77–1.07)
	Less effective	0.67 (0.56–0.79)
No insurance	Permanent	0.72 (0.53–0.98)
	LARC	0.67 (0.51–0.89)
	SARC	0.61 (0.47–0.81)
	Less effective	0.93 (0.72–1.21)
Geographic setting (ref: urban)		
Rural	Permanent	2.15 (1.67–2.77)
	LARC	1.31 (1.04–1.65)
	SARC	1.42 (1.15–1.76)
	Less effective	1.38 (1.11–1.72)

Abbreviations: LARC, long-acting reversible contraception, including intrauterine devices and contraceptive implants; SARC, short-acting reversible contraception, including contraceptive pills, patches, rings, and injections.

* Jurisdictions included were Alaska, Colorado, Connecticut, Delaware, Illinois, Louisiana, Massachusetts, Maine, Michigan, Missouri, New Jersey, New Mexico, Pennsylvania, Utah, Virginia, Washington, Wisconsin, West Virginia, Wyoming, and New York City.

[†] Insurance coverage at the time the respondent completed the Pregnancy Risks Assessment Monitoring System survey.

[‡] Adjusted model includes insurance type, geographic setting, maternal age, race/ethnicity, and parity.

Trends in Postpartum Contraceptive Method Use, Pregnancy Risks Assessment Monitoring System in 20 Jurisdictions, * 2015–2018

Table 3

Variable	Percent Distribution by Year				Adjusted [†] Odds Ratio (95% Confidence Interval)
	2015	2016	2017	2018	
Overall method distribution					
Permanent	12.0	11.4	11.4	12.2	1.00 (0.97–1.03)
LARC	17.8	18.0	18.8	18.7	1.03 (1.01–1.05)
SARC	28.8	28.6	27.6	26.3	0.97 (0.95–0.99)
Less effective	27.7	26.7	26.9	27.0	0.98 (0.96–1.00)
None	13.7	15.4	15.3	15.8	1.05 (1.02–1.07)
Insurance coverage [‡]					
Private insurance					
Permanent	10.7	10.7	10.5	11.8	1.03 (0.99–1.07)
LARC	15.9	16.0	17.1	17.4	1.05 (1.02–1.08)
SARC	27.3	27.3	27.0	25.5	0.97 (0.95–1.00)
Less effective	32.1	30.8	31.0	30.3	0.97 (0.95–1.00)
None	14.0	15.2	14.4	15.0	1.01 (0.98–1.04)
Public insurance					
Permanent	13.3	12.5	12.9	12.9	0.97 (0.93–1.02)
LARC	21.0	21.7	21.6	21.2	1.01 (0.97–1.05)
SARC	32.9	33.3	30.0	29.4	0.95 (0.92–0.98)
Less effective	20.0	17.4	19.3	19.5	1.00 (0.96–1.04)
None	12.9	15.1	16.3	17.0	1.11 (1.06–1.16)
insurance					
Permanent	14.5	12.5	12.4	12.4	0.93 (0.84–1.02)
LARC	17.4	19.0	20.3	19.1	1.05 (0.97–1.13)
SARC	23.4	21.7	24.1	20.5	0.97 (0.90–1.04)
Less effective	29.8	29.7	25.1	31.0	0.99 (0.92–1.06)
None	15.0	17.1	18.1	17.1	1.06 (0.98–1.15)
Geographic setting					
Urban					
Permanent	11.5	11.0	10.6	11.7	0.99 (0.96 0 1.03)

Variable	Percent Distribution by Year			Adjusted [†] Odds Ratio (95% Confidence Interval)	
LARC	17.4	18.0	18.9	18.7	1.04 (1.02–1.07)
SARC	28.3	27.8	27.2	26.0	0.97 (0.95–0.99)
Less effective	28.7	27.5	27.5	27.2	0.97 (0.95–0.99)
None	14.2	15.7	15.8	16.4	1.05 (1.02–1.08)
Rural					
Permanent	15.5	14.1	16.8	15.9	1.02 (0.95–1.10)
LARC	20.8	17.9	18.1	18.7	0.97 (0.91–1.03)
SARC	32.5	34.2	30.5	28.1	0.93 (0.88–0.98)
Less effective	20.7	21.0	22.4	25.5	1.09 (1.03–1.16)
None	10.6	12.90	12.2	11.8	1.03 (0.96–1.11)

Abbreviations: LARC, long-acting reversible contraception, including intrauterine devices and contraceptive implants; SARC, short-acting reversible contraception, including contraceptive pills, patches, rings, and injections.

Adjusted odds ratios for which $p < .05$ are presented in bold.

* Jurisdictions included were Alaska, Colorado, Connecticut, Delaware, Illinois, Louisiana, Massachusetts, Maine, Michigan, Missouri, New Mexico, New Jersey, New York City, Pennsylvania, Utah, Virginia, Washington, Wisconsin, West Virginia, Wyoming, and New York City.

[†] Adjusted models include maternal age, race/ethnicity, and parity.

[‡] Insurance coverage at the time the respondent completed the Pregnancy Risks Assessment Monitoring System survey.