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Policy Matters

The Impact of the Affordable Care Act on Contraceptive Use and Costs among Privately Insured Women

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A B S T R A C T

Objectives: The Affordable Care Act (ACA) contraceptive coverage mandate issued in August 2012 requires most private health insurance plans to cover all U.S. Food and Drug Administration-approved contraceptive methods without cost sharing. We evaluate the impact of this policy on out-of-pocket costs and use of long-acting reversible contraceptives (LARCs) and other prescription methods through 2014.
Methods: Data from Truven Health MarketScan were used to examine out-of-pocket costs and contraceptive use patterns for all reversible prescription contraceptives before and after the implementation of the contraceptive mandate for privately insured women ages 13 to 45. Costs were estimated by combining copayment, coinsurance, and deductible payments for both contraception and insertion fees for LARCs. Contraceptive use rates were examined and multivariable logistic regression analysis of LARC insertions before and after the ACA was conducted.
Results: Out-of-pocket costs for all reversible contraceptives, including LARCs, decreased sharply after the ACA contraceptive mandate. The greatest proportion of women in each year was oral contraceptive users (24.3%-26.1%). Rates of new LARC insertions increased significantly after the ACA, when controlling for cohort year, age group, geographic region, and rural versus urban setting (adjusted odds ratio, 1.03; 95% confidence interval, 1.02-1.04).
Conclusions: Our study adds to the current literature with the inclusion of 2014 data and confirms previous findings of a post-ACA decrease in out-of-pocket contraceptive costs. In addition, there was a small but statistically significant increase in LARC insertions after the ACA. This finding indicates the importance of reduced cost sharing for increasing use of the most effective contraceptives.

Long-acting reversible contraceptives (LARCs), which include the intrauterine device (IUD) and contraceptive implant, are highly effective forms of prescription contraception. LARCs have become more affordable to insured women as a result of the contraceptive coverage mandate of the Affordable Care Act (ACA), which took effect in August 2012. The mandate requires most private health insurance plans to cover all U.S. Food and Drug Administration-approved contraceptive methods without cost-sharing (Henry J. Kaiser Family Foundation, 2015; U.S. Department of Health and Human Services, 2016). Before the ACA, the greater upfront out-of-pocket costs of LARCs likely discouraged women from choosing them over less effective prescription birth control methods with lower upfront costs (Chuang et al., 2015). Nevertheless, LARC use increased from 2.4% of all contraceptive users in 2002 to 14.3% in 2014, according to the National Survey of Family Growth (Daniels, Daugherty, Jones, & Mosher, 2015; Guttmacher Institute, 2014; Kavanaugh & Jerman, 2018; Xu, Macaluso, Ouyang, Kulczycki, & Grosse, 2012).

Several studies have examined the effect of the ACA contraceptive coverage mandate on out-of-pocket costs for contraception (Bearak, Finer, Jerman, & Kavanaugh, 2016; Becker & Polsky, 2015; Finer, Sonfield, & Jones, 2014; Sonfield, Tapales, Jones, & Finer, 2015), and all show decreasing out-of-pocket costs to women after 2012. Other studies have examined both out-of-pocket costs and types of contraception women use after

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the ACA. Using claims data from a regional health plan, Carlin, Fertig, and Dowd (2016) found that reduced cost sharing was associated with increased use of prescription contraceptives, including LARCs, among Midwestern women. Using a national health claims database, Law et al. (2016) found a steep decline in out-of-pocket costs for LARCs after the ACA contraceptive provision and an increase in IUD claims from 1.2% in 2011, to 1.3% in 2012, to 1.6% in 2013. Pace, Dusetzina, and Keating (2016) found that the proportion of claims without cost-sharing for IUDs and implants increased over time but found no significant increase in LARC uptake post-ACA implementation as of 2013. Using survey data, Bearak and Jones (2017) observed no changes in patterns of contraceptive use between two time points: fall of 2012 (pre-ACA) and spring of 2015 (post-ACA).

In this study, we examine the out-of-pocket costs for prescription contraception and contraceptive use patterns between 2006 and 2014 using a large national database of health claims for privately insured women. This is the first study, to our knowledge, with post-ACA claims data through 2014. We hypothesize that the post-ACA out-of-pocket costs for prescription contraception will be decreased and that the use of LARCs will increase.

Materials and Methods

Data Source and Inclusion Criteria

Data are from the Truven Health Analytics MarketScan database, which consists of reimbursed health care claims for employees, retirees, and their dependents from more than 250 employers and health plans from all 50 states and the District of Columbia. Individuals included in the database are covered under commercial (private) insurance plans. This large, national database includes an annual population of more than 50 million people and captures administrative claims with data from inpatient visits, outpatient visits, and pharmacy claims deidentified at the patient level. This study was approved by the Penn State College of Medicine Institutional Review Board.

We conducted a retrospective cohort analysis to examine claims and out-of-pocket costs for prescription contraceptive methods used by women before and after implementation of the ACA contraceptive mandate in August 2012. We consider 2013 as the first post-ACA year because it is the first benefits year in which contraceptive coverage without cost-sharing would have been implemented. Study cohorts were created for each calendar year between 2006 and 2014 (the most recent year for which data are available) that included women ages 13 to 45 who had continuous medical and pharmacy coverage during that year. We were unable to identify whether women belonged to employer groups that were exempt from the contraceptive mandate.

Measures of Contraceptive Use

Contraceptive claims were identified using Healthcare Common Procedure Coding System (HCPCS), *International Classification of Diseases*, 9th edition (ICD-9), National Drug Code, and Current Procedural Terminology (CPT)-4 codes. IUD insertions were identified using ICD-9 codes V25.11 and 69.7, CPT-4 code 58300, or HCPCS codes J7300, J7301, J7302, S4981, and S4989. Implant insertions were identified using ICD-9 code V25.5, CPT-4 code 11981, and HCPCS codes J7306 and J7307. Because the CPT-4 code for implant insertion is not contraceptive specific, the CPT-4 code was combined with the contraceptive-specific ICD-9 and HCPCS codes to ensure only the capture of contraceptive implant insertions. The LARC insertion rate was defined as the percent of women in each cohort year who had a LARC insertion claim. The LARC insertion rate does not represent the total proportion of contraceptors using LARC methods during that year, because some LARC users will have had their LARC inserted in previous years. The LARC insertion rate is not comparable with the LARC use rate reported based on surveys such as the National Survey of Family Growth, which include both insured and uninsured women and self-reported contraceptive use.

For non-LARC methods, pharmacy claims were searched for oral contraceptive pills, patches, injection, and the contraceptive ring. Injections were additionally identified using procedure codes. Women with pharmacy claims for more than one type of non-LARC method in a calendar year were coded as using the method that was in use for the longest period of time in that year. Use rates of non-LARC methods were defined as the percent of women using each of the contraceptive methods during each cohort year. Nonprescription contraceptive methods could not be accounted for because they do not generate claims.

Measures of Contraceptive Costs

Individual out-of-pocket costs for each type of contraception were estimated by combining copayment, coinsurance, and deductible payments for both contraception and insertion fees (in the case of LARCs). Costs for LARCs are reported as out-of-pocket cost for insertion (including device and insertion fees). Oral contraceptives, patches, and rings are reported as cost per 28-day supply obtained (e.g., a pack of contraceptive pills). Injection is reported as cost per injection. All costs were adjusted for inflation to 2015 dollars using the Consumer Price Index.

Measures of Covariates

Contraceptive choices are influenced by other variables in addition to cost (Weisman, Lehman, Legro, Velott, & Chuang, 2015), but covariates available for this analysis are limited. The MarketScan database includes limited information on the patient, and key sociodemographic variables such as educational level, race/ethnicity, and marital status are not available. We were able to control for age group, with age groups defined as 13 to 17, 18 to 25, 26 to 35, and 36 to 45 years. Geographic region was included as a covariate to account for possible variations in prescribing patterns; region is precoded in the dataset as northeast, north central, south, and west. Finally, urban versus rural residence, which is measured in the dataset based on the Metropolitan Statistical Area, was included because the availability of providers for LARCs is likely to be higher in urban areas.

Statistical Analysis

For each study year, we report the mean and median out-of-pocket costs for each contraceptive method in 2015 dollars, using the medical care component of the Consumer Price Index. For method use, we report the IUD and implant insertion rates and percent of women using oral contraceptives, injections, ring, and patch in each study year. To test whether the trend in LARC use can be attributed to the ACA, we estimate the likelihood of LARC insertion post-ACA implementation compared with pre-ACA

Table 1
Characteristics of Sample of Privately Insured Reproductive-age Women, by Study Year (Percentages)

Year	Base n (Millions)	Age (y)				Region*				Rural Residence†
		13-17	18-25	26-35	36-45	Northeast	North Central	South	West	
2006	3.88	17	18	27	38	12	23	48	17	16
2007	4.44	17	18	27	38	11	24	47	18	17
2008	5.68	17	18	28	37	14	26	43	16	15
2009	5.86	16	19	29	37	11	28	43	17	14
2010	6.31	16	19	29	36	14	26	40	20	14
2011	7.13	16	22	28	35	16	24	40	19	15
2012	7.32	15	23	28	34	16	24	38	20	15
2013	6.26	15	24	27	34	17	22	36	22	15
2014	6.47	15	24	27	34	19	20	40	18	15

Note: Percentages for each category may not sum to 100% owing to rounding.
Data Source: Truven Health Analytics MarketScan.
* Region is a predefined variable in the database.
† Urban versus rural residence is determined by the Metropolitan Statistical Area.

using multivariable logistic regression adjusting for covariates and year (to account for secular trends). Statistical analyses were performed using SAS version 9.4 (SAS, Inc, Cary, NC).

Results

Table 1 describes the characteristics of the study sample, which consists of more than 3 million women in each study year. The sample size changes year to year because of changes in the number of employers and health plans that contribute data to MarketScan, or because of changes in the number of enrollees. The sample distribution by age, region, and urban versus rural residence is similar over time, with one exception: the greater proportion of women ages 18 to 25 after 2010 could reflect increased dependent coverage under ACA.

Table 2 shows the mean and median out-of-pocket costs for each prescription contraceptive method in each study year. After the ACA contraceptive coverage mandate (2013-2014), the mean out-of-pocket cost for all types of contraception decreased sharply. Similarly, the median out-of-pocket cost for all types of prescription contraception decreased to $0. In 2014 (data not shown), 91.5% of IUD recipients and 87.1% of implant recipients paid $0 out of pocket.

Table 3 shows the trend in prescription contraceptive use over successive cohort years. Each year, the greatest proportion of women was oral contraceptive users (about 1 in 4 women each year). The IUD insertion rate was 0.6% in 2006 and increased steadily over time to 2.0% in 2014. The contraceptive implant insertion rate was less than 0.1% in 2006 and increased to 0.4% in 2014.

Table 4 shows that there was a statistically significant increased odds of LARC insertion (adjusted odds ratio, 1.03; 95% confidence interval, 1.02-1.04) after the contraceptive mandate was implemented, when adjusting for covariates. There was a statistically significant 14% increased odds of LARC insertion with each subsequent year from 2006 to 2014. Compared with the oldest age group, girls 13 to 17 years old were significantly less likely to have a LARC insertion, whereas women aged 18 to 25 and 26 to 35 had increased odds of LARC insertions. Women living in the Northeast had decreased odds of LARC insertions, whereas women in the South and West had increased odds of LARC insertions compared with women living in the North central region. There was no difference in LARC insertion for women in rural versus urban areas.

Discussion

This study confirms prior studies showing a dramatic decrease in out-of-pocket costs for prescription contraceptive methods, including LARCs, after the ACA contraceptive coverage mandate was implemented. This study extends this finding using national claims data for privately insured women through 2014. Although most women had no out-of-pocket costs for LARCs after 2012, the mean cost for an IUD was still between $17 and $22. These post-2012 costs may be attributable to grandfathered plans, employers with religious exemptions to the contraceptive

Table 2
Mean and Median Out-of-Pocket Costs by Contraceptive Type, 2006-2014 (Dollars)

Year	Oral Contraceptive		Injection		Ring		IUD		Implant		Patch	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
2006	31	18	13	8	60	18	78	23	50	46	25	18
2007	24	16	13	9	62	29	79	29	107	72	24	16
2008	20	14	11	6	80	43	74	27	87	27	23	16
2009	19	13	11	6	70	39	80	26	91	26	20	15
2010	18	12	11	6	88	44	94	25	98	25	20	15
2011	17	12	12	6	64	35	101	23	103	23	19	13
2012	15	10	11	6	82	34	114	21	139	38	18	12
2013	6	0	5	1	35	0	22	0	31	0	9	0
2014	5	0	4	0	7	0	17	0	24	0	8	0

Note: Dollars are adjusted for inflation to 2015 dollars using the medical care component of the Consumer Price Index. Intrauterine device (IUD) and implant cost presented as out-of-pocket cost in dollars per insertion. Injection cost is presented as out-of-pocket cost in dollars per injection. Cost for other methods (oral contraceptive, ring, and patch) presented as out-of-pocket cost per 28-day supply obtained.

Table 3
Contraceptive Use by Year, 2006-2014 (Percent of Women Ages 13-45)

Year	Oral Contraceptive	Injection	Ring	IUD Insertions	Implant Insertions	Patch
2006	24.8	2.3	1.3	0.6	<0.1	<0.1
2007	24.3	2.3	1.5	0.8	<0.1	<0.1
2008	25.2	2.3	1.7	1.2	0.1	<0.1
2009	26.1	1.4	2.3	1.3	0.1	<0.1
2010	25.3	1.4	2.4	1.3	0.1	<0.1
2011	25.7	2.4	1.8	1.4	0.2	<0.1
2012	25.6	2.5	1.8	1.5	0.2	<0.1
2013	25.5	1.8	1.7	1.8	0.3	<0.1
2014	26.1	1.9	1.7	2.0	0.4	<0.1

Abbreviation: IUD, intrauterine device.

mandate, noncompliance with the ACA contraceptive mandate, or failure to cover all types of LARCs (Tschann & Soon, 2015). Currently, the future of contraceptive coverage without cost-sharing is uncertain. If more health plans were to become exempt from coverage, out-of-pocket spending for contraception would be expected to increase.

The rate of new LARC insertions increased over the study period, with a statistically significant 3% increased odds of insertion after implementation of the ACA contraceptive coverage requirement. A 3% increase across the millions of privately insured reproductive-age women nationally is highly significant from a population perspective. This finding is promising and suggests that the removal of the cost barrier to IUDs and implants has increased their rate of adoption after the ACA.

As noted, the 2013 plan year is the first year in which the ACA contraceptive coverage benefit would have been in effect for most privately insured women, and to date we have claims data only through 2014. Because many privately insured women were not aware of the ACA contraceptive coverage benefit during this timeframe (Chuang et al., 2015), their contraceptive choices might not yet have changed despite having no-cost coverage. Cost could be a leading indicator in that, once more women experience no-cost coverage for their contraceptive prescriptions, their behavior with regard to contraceptive choices could change.

A limitation of this study is that the MarketScan claims database does not include all private insurers, and it does not include those covered by Medicaid or the uninsured. This limitation made it difficult to make meaningful comparisons with National Survey of Family Growth data, which are based on nationally representative surveys that include Medicaid patients and uninsured women. Because this is a claims database, we cannot account for all relevant covariates, or for the use of nonprescription contraceptive methods, or for prescription methods obtained for which a claim was not generated (e.g., in family planning or school-based clinics). In addition, we could not account for ongoing LARC use by women who obtained the method in a year outside of our period of observation. This limitation underestimates LARC use for each year. Strengths of this database include its large size and national scope over many years, including 2 full years after the ACA mandate implementation.

Table 4
Adjusted Odds of LARC (IUD or Implant) Insertion

	Adjusted OR (95% CI)
Post-ACA	1.03 (1.02–1.04)
Pre-ACA	Reference
Cohort year (1 year increments, 2006–2014)	1.14 (1.13–1.14)
Age group (y)	
13-17	0.37 (0.37–0.38)
18-25	1.63 (1.62–1.64)
26-35	2.24 (2.23–2.26)
36-45	Reference
U.S. region	
Northeast	0.90 (0.89–0.90)
North Central	Reference
South	1.04 (1.04–1.05)
West	1.20 (1.19–1.21)
Urban residence	1.00 (1.00–1.00)
Rural residence	Reference

Abbreviations: ACA, Affordable Care Act; CI, confidence interval; IUD, intrauterine device; LARC, long-acting reversible contraceptive; OR, odds ratio.
Note: Hosmer and Lemeshow goodness-of-fit test χ^2 statistic 3545.9 ($p < .0001$).

Conclusions

The ACA contraceptive mandate has dramatically reduced out-of-pocket costs for prescription contraceptives including LARCs. After the ACA, there was a small but statistically significant increase in LARC insertions.

Implications for Practice and/or Policy

Increased LARC insertions after the ACA in this database of privately insured women is an important finding that indicates the importance of reduced cost-sharing for increasing use of the most effective contraceptives and preventing unintended pregnancy.

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