

Women's Affordability, Access, and Preventive Care After the Affordable Care Act



Lois Kaye Lee, MD, MPH,¹ Michael Carl Monuteaux, ScD,¹ Alison Amidei Galbraith, MD, MPH^{2,3}

Introduction: Women historically have had difficulty maintaining health insurance, obtaining preventive care, and affording care. The objectives of this study were to describe changes in insurance affordability, healthcare access, and preventive care for women of different income levels after implementation of the Affordable Care Act.

Methods: This was a difference-in-differences analysis of data about U.S. women aged 19–64 years from the National Health Interview Survey. This study examined self-reported insurance affordability, access to health care, and preventive services. Changes before (2010–2013) and after (2014–2017) the Affordable Care Act insurance expansions were compared by income ($\leq 138\%$ federal poverty level vs $\geq 400\%$ federal poverty level). Multivariate difference-in-differences analyses adjusting for demographics were expressed as risk differences.

Results: The sample represented an estimated 41,106,929 women. After the Affordable Care Act, women with incomes $\leq 138\%$ federal poverty level, compared with $\geq 400\%$ federal poverty level, had less difficulty finding affordable insurance (adjusted difference-in-differences: -27.18 , 95% CI= -36.37 , -18.00); were more likely to have seen/talked to a doctor in 12 months (adjusted difference-in-differences: 3.08 , 95% CI= 1.29 , 4.87), had blood pressure screening (adjusted difference-in-differences: 3.27 , 95% CI= 1.94 , 4.60), cholesterol screening (adjusted difference-in-differences: 5.05 , 95% CI= 2.45 , 7.64), and mammograms (adjusted difference-in-differences: 6.87 , 95% CI= 3.94 , 9.79).

Conclusions: After implementation of the Affordable Care Act, women in all income groups, especially the lowest, reported greater affordability of coverage, access to health care, and receipt of preventive services. Efforts to alter the Affordable Care Act should consider the impact of policy changes on women's health and preventive care.

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INTRODUCTION

Women had specific challenges in obtaining health insurance and health care prior to the Affordable Care Act (ACA). Gender rating, where women were charged higher premiums than men in their own age group; denial of coverage for pre-existing conditions, including pregnancy or being a victim of intimate partner violence; and lack of coverage for services like maternity care have affected about one third of women trying to obtain health insurance.^{1–3} Pre-ACA policies for many individually purchased plans did not include coverage for services essential for women's health, including maternity care, prescriptions for certain medications (e.g., cancer care, contraceptives), or mental health treatment.¹

Starting in 2010, the ACA improved essential health benefit standards offered by private health insurance plans to cover maternity care and mental health. The ACA also prohibited cost sharing for selected preventive care services and

From the ¹Division of Emergency Medicine, Boston Children's Hospital, Boston, Massachusetts; ²Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, Massachusetts; and ³Division of General Pediatrics, Boston Children's Hospital, Boston, Massachusetts

Address correspondence to: Lois Kaye Lee, MD, MPH, Division of Emergency Medicine, Boston Children's Hospital, 300 Longwood Ave., Boston MA 02115. E-mail: lois.lee@childrens.harvard.edu.

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contraception.^{2,4} In addition, the ACA mandated that dependent coverage extend to children aged 19–26 years.⁵

In 2014, the ACA also implemented mechanisms for private health insurance expansion through health insurance exchanges and for participating states to expand Medicaid to those with incomes 138% or less of the federal poverty level (FPL). In states that did not expand Medicaid, individuals with incomes 100%–138% of the FPL became eligible for insurance premium subsidies in the exchanges. Thus, depending on the state, low-income individuals in this FPL category could have gained coverage through Medicaid or the exchanges.⁵ This included low-income nulliparous women aged 18 years and older, who previously were not eligible for Medicaid.⁶ Individuals with incomes between 139% and 399% FPL became eligible for insurance premium subsidies for coverage in the exchanges, with those less than 250% FPL eligible for additional cost-sharing reductions.⁵ For individuals with incomes 400% or more of the FPL, insurance plans could be purchased on the exchanges without subsidies.⁵

Since the ACA coverage expansions in 2014, insurance coverage has improved for women, with the uninsured rate decreasing from 17% in 2013 to 11% in 2016²; however, uninsured rates vary by income level and by state, with generally higher rates in the states that have not expanded Medicaid.^{2,7–11} Greater coverage is important as having insurance is associated with increased rates of having a regular source of care and of obtaining preventive services, such as blood pressure (BP) and cholesterol screening.^{1,3} Prior to the ACA, 40% of women with incomes less than 200% of the FPL were uninsured compared with 5% of those with incomes 200% or more of the FPL. This was due in part to members of low-income households working in low-wage jobs that did not provide employer-sponsored insurance, and to the difficulty of affording individually purchased insurance coverage.¹ With the more affordable insurance options after the ACA coverage expansions, the uninsured rate among low-income women decreased to 18% in 2016.³ Nonetheless, low-income women still have lower coverage rates and more barriers to care because of cost than do higher-income women, particularly in states that did not expand Medicaid.¹

In addition to the ability to access insurance and health care, the affordability of care is also a substantial concern for women. Prior to the ACA, 26% of women delayed or did not get health care because of cost, versus 20% for men.¹ Although a higher proportion of uninsured women reported that healthcare costs were a barrier to care, those with Medicaid and private insurance also reported cost-related challenges,¹ making access and affordability a concern for women with all insurance

types. The ACA Medicaid expansion has been shown to improve coverage, access, and affordability for low-income adults,^{9,11–16} and coverage for low-income women.^{2,3} In addition, the ACA overall appears to improve coverage and reduce cost-related barriers to care for women across incomes.⁷ However, data are limited on the impact of the ACA expansions on insurance affordability, access, and preventive care use for women across the income distribution. Given the challenges women of all income groups have had in obtaining and affording coverage and health care, as well as their unique needs for preconception, reproductive, cancer screening, and other care,¹ it is important to illustrate the specific effects of the ACA for women across income groups on these outcomes. The objectives of this study were to describe the patterns of women's affordability of insurance, access to health care, and use of preventive services, based on income, after the ACA's 2014 coverage expansions.

METHODS

This was a difference-in-differences study design that used multi-year cross-sectional data to analyze changes after the ACA coverage expansions in 2014 in insurance and healthcare access, preventive care, and healthcare affordability among women by income level. Comparing across income groups allowed this study to capture the effects of both the Medicaid expansion for low-income individuals and subsidies in health insurance exchanges for middle-income individuals. The pre-ACA study period was from 2010–2013 and the post-ACA period from 2014–2017. To adjust for time invariant differences as well as secular changes in health measures over time, the difference-in-differences method was used for analysis (i.e., comparing the pre- versus post-ACA coverage expansion change in the outcomes across groups defined by income level). This study was deemed exempt from review by the Committee on Clinical Investigation, the IRB at Boston Children's Hospital.

Study Sample

Data from the National Health Interview Survey (NHIS) were used for this study. This is a nationally representative, annual, in-person survey conducted by the National Center for Health Statistics.¹⁷ This survey consists of in-person interviews during the course of the year, and has a high response rate (>70%).¹⁸ The study sample included women aged 19–64 years in the sample adult file, a subsample of the larger survey which comprises detailed interviews with one adult from each household.^{17,19} Questions about family income are included in the NHIS, which allows for calculation of income as a percentage of the FPL. Income was categorized into three groups: ≤138% FPL, 139%–399% FPL, and ≥400% FPL, based on ACA Medicaid expansion and insurance premium subsidy eligibility.⁵

Measures

Self-reported outcome measures from the NHIS that asked about healthcare experiences in the previous 12 months were used.

Several outcomes were examined: insurance affordability (difficulty in finding affordable insurance), accessing care (whether the woman had seen/talked to a doctor in 12 months), and use of common preventive services (influenza immunization, BP screenings, cholesterol screenings, and mammograms). Immunization against influenza and BP screenings are recommended annually for adults.²⁰ For cholesterol screening and mammograms, women ages 45–64 years, the age group often recommended for routine testing, were included for analysis.^{21–23} Data on BP, cholesterol screenings, and mammograms were only collected in the NHIS for the years 2011–2017.¹⁷

Statistical Analysis

All analyses were performed within the context of the survey design characteristics of the NHIS.¹⁸ The primary sampling units, patient visit sampling weights, and the stratum identifiers were specified as implemented in Stata's `svy` command, version 14.0. This allowed for the calculation of nationally representative estimates.

To accommodate missing data on family income in the NHIS (22%–33%, depending on the survey year), multiple imputation of these data was performed for all survey years under study. To facilitate the assessment of variability because of imputation, five sets of imputed values were provided by the NHIS for each survey year.²⁴ As directed by the NHIS,²⁵ each of the five data sets was analyzed separately and then the resulting estimates and SEs were combined by using the provided methodology. All of the estimates and analyses used this approach.

For the pre-ACA period (2010–2013), frequencies and proportions of baseline demographic characteristics of the study sample were calculated. To compare demographic characteristics among the three income groups, the chi-square test statistic was used. To estimate change in each outcome after the ACA coverage expansions within each income group (Appendix Table 1, available online), a set of generalized linear models were estimated with time (pre-ACA coverage expansions period 2010–2013 versus post-ACA 2014–2017) as the independent variable. The authors specified the function relating the expected value of the dependent variable to the predictors (i.e., the identity link, such that the expected value equals the linear predictor) and the distribution of the dependent variable (i.e., the binomial family) to calculate risk differences with 95% CIs.

Finally, to conduct the difference-in-differences analyses, a set of multivariable generalized linear models was estimated, adjusted for age group, race, ethnicity, marital status, education, and geographic region. Outcomes were modeled with time (i.e., pre- versus post-ACA), income level ($\leq 138\%$ FPL vs $\geq 400\%$ FPL), and the time X income group interaction as the independent variables. This interaction term tests whether the effect of the ACA on the outcomes differed in one income group compared with the other.

RESULTS

During the study period from 2010 to 2017, the 105,021 women in the NHIS study population represented an estimated 41,106,929 women nationally. The estimated national numbers of women were 10,554,191 (25.7%) in the lowest income group ($\leq 138\%$ FPL), 15,856,127 (38.6%) in the middle-income group (139%–399% FPL),

and 14,696,611 (35.8%) in the highest income group ($\geq 400\%$ FPL; Table 1). Nearly half (46.6%) of the individuals in the lowest income group were aged 19–34 years. In the highest income group, only 3.5% were uninsured compared with 27.3% in the low-income and 16.9% in the middle-income groups.

For the measure, *difficult to find affordable insurance*, large decreases were seen in the two lower income groups post-ACA coverage expansions (Table 2). There was also a statistically significant adjusted difference-in-differences result between the lowest and highest income groups. This indicates that the magnitude of the decrease was larger for the lowest income group compared with the highest income group (–27.18%, 95% CI= –36.37%, –18.00%).

In addition to improvements in finding affordable insurance, accessing healthcare improved for the two lower income groups (Table 2). In 2014–2017, for the measure *seen/talked to a doctor in the previous 12 months* there was a 4.10% increase (95% CI=2.70%, 5.49%) in the lowest income group and a 2.31% increase (95% CI=1.12%, 3.51%) in the middle-income group with no significant difference in the high-income group. In the multivariate difference-in-differences analysis, there was a statistically significant improvement in the lowest compared with the highest income group (3.08%, 95% CI=1.29%, 4.87%).

There were also improvements in obtaining some types of preventive care after the ACA (Table 3). For influenza immunization, all income groups increased, without a significant relative increase for those in the lowest compared with the highest income group (–1.75%, 95% CI= –3.51%, 0.01%). BP screening also increased in all income groups, with a statistically significant positive difference-in-differences effect (3.27%, 95% CI=1.94%, 4.60%). Increases in cholesterol screening were also reported in all income groups, with a statistically significant multivariate difference-in-differences (5.05%, 95% CI=2.45%, 7.64%). For mammograms the only increases were in lowest income group after the ACA, with a statistically significant increase relative to the highest income group (6.87%, 95% CI=3.94%, 9.79%).

DISCUSSION

After the implementation of the ACA coverage expansions in 2014, women reported improved ability to find affordable insurance, access to health care, and use of some preventive care services. Women in the low- and middle-income groups were more likely to have seen a physician than before the expansions, enabling them to access preventive as well as acute care. Low-income women also reported increases in receipt of the influenza vaccination,

Table 1. Demographic Characteristics of Women by Family Income Level, 2010–2017^a

Characteristic	Total, %	≤138% FPL, %	139%–399% FPL, %	≥400% FPL, %	p-value
Sample size (estimated), n (%)	41,106,929	10,554,191 (25.7)	15,856,127 (38.6)	14,696,611 (35.8)	
Age, years					<0.01
19–34	34.8	46.6	36.7	23.6	
35–44	20.6	18.7	21.5	21.2	
45–54	21.9	17.0	20.4	27.1	
55–64	22.7	17.7	21.4	28.1	
Race					<0.01
White	76.9	67.4	77.2	83.9	
Black	14.9	24.1	15.1	7.8	
Other	8.2	8.6	7.8	8.3	
Hispanic ethnicity	14.1	22.8	15.0	6.9	<0.01
Education					<0.01
<High school diploma	10.4	24.6	8.7	1.8	
High school /equivalent	21.8	28.8	25.4	12.8	
Some college	34.2	35.9	39.1	27.5	
College or more	33.7	10.7	26.8	57.9	
Married	44.7	22.4	43.3	63.0	<0.01
Family size (mean)	2.59	2.69	2.67	2.46	<0.01
Region (%)					<0.01
Northeast	17.1	15.2	15.2	20.6	
Midwest	23.3	22.9	25.0	21.8	
South	37.6	41.4	38.1	34.2	
West	21.9	20.5	21.7	23.3	
Type of insurance					<0.01
Private	65.4	26.1	67.7	91.8	
Medicare/Medicaid	15.2	41.3	10.5	1.3	
Uninsured	14.9	27.3	16.9	3.5	
Other public coverage	4.1	4.8	4.6	3.1	
Missing	0.4	0.6	0.3	0.3	
Employment status					<0.01
Working	36.3	56.4	33.1	24.1	
Not working	63.7	43.6	66.9	75.9	

Note: Boldface indicates statistical significance ($p < 0.05$).

^aSubset of sample with in-depth interview (Sample Adult data).

FPL, federal poverty level.

BP and cholesterol screening, and mammography. Across nearly all of these measures of access and affordability, lower-income women demonstrated greater improvements compared with higher-income women.

Access to affordable insurance has historically been challenging for women. In 2010, only 46% of women who tried to buy health insurance in the past 3 years ended up buying a plan, and 60% reported it was very difficult to find affordable coverage.³ After the ACA coverage expansions large decreases were seen in uninsured rates, with the largest decreases among those 100%–250% FPL,⁷ but there were reduced effects in non-expansion states.^{9,11,12,16,26} The Medicaid expansion also improved coverage for childless women less than 138% of the FPL.^{11,27} Given the variable effects of the Medicaid and other income-related ACA

expansions, this study describes resulting changes in insurance affordability, access, and care for women by income level. The economic recovery could have contributed to these findings, although trends during that time show worsening in the affordability of insurance coverage in the employer-sponsored market.^{10,28} These changes may also be because of the availability of subsidized insurance available through the exchange and through Medicaid expansion plans,^{7–9,11,16} in addition to prohibition of gender-rating and of charging higher premiums for women with pre-existing conditions.

Before the ACA, 9% of the adult (not older than 65 years) U.S. population went without getting health care because of cost, and 18% reported having no usual place of care in the NHIS from 2010 to 2013.²⁹ In 2013,

Table 2. Changes in Health Insurance Affordability and Healthcare Access for Women in 2014–2017 After the ACA^a

Outcome	U.S. estimate, 2010–2013, %	Percent difference after ACA, percent change (95% CI)			Difference in percentage-point change between FPL groups (95% CI), ^b ≤138% FPL vs ≥400% FPL	Adjusted difference-in-differences (95% CI), ^c ≤138% FPL vs ≥400% FPL
		≤138% FPL	139%–399% FPL	≥400% FPL		
Insurance affordability						
Difficult to find affordable insurance ^d	68.5	-25.24 (-32.79, -17.68)	-13.28 (-17.37, -9.19)	-0.18 (-5.34, 4.97)	-25.05 (-34.29, -15.81)	-27.18 (-36.37, -18.00)
Healthcare access						
Seen/talked to a doctor in 12 months	68.2	4.10 (2.70, 5.49)	2.31 (1.12, 3.51)	0.53 (-0.59, 1.65)	3.57 (1.78, 5.36)	3.08 (1.29, 4.87)

Note: Boldface indicates statistical significance ($p < 0.05$).

^aAfter the ACA (2014–2017) compared to before (2010–2013) for women aged 19–64 years.

^bUnadjusted difference-in-differences estimates of percentage-point change between low-income group (≤138% FPL) and high-income group (≥400% FPL).

^cAdjusted difference-in-differences estimates, controlling for age group, race, ethnicity, marital status, education, and geographic region.

^dOnly collected from 2011–2017.

ACA, Affordable Care Act; FPL, federal poverty level.

Table 3. Changes in Preventive Care Services for Women in 2014–2017 After the ACA^a

Outcome	U.S. estimate, 2010–2013, %	Percent difference after ACA, Percent change (95% CI)			Difference in percentage-point change between FPL groups (95% CI), ^b ≤138% FPL vs ≥400% FPL	Adjusted difference-in-differences (95% CI), ^c ≤138% FPL vs ≥400% FPL
		≤138% FPL	139%–399% FPL	≤138% FPL vs ≥400% FPL		
Preventive care						
Influenza immunization	36.2	5.55 (4.17, 6.94)	4.17 (3.01, 5.34)	3.47 (2.20, 4.73)	-2.08 (-0.28, 3.89)	-1.75 (-3.51, 0.01)
Blood pressure ^d	85.5	4.45 (3.21, 5.69)	2.92 (2.02, 3.81)	1.04 (0.32, 1.75)	3.41 (2.02, 4.80)	3.27 (1.94, 4.60)
Cholesterol ^d (aged 45–64 years)	75.2	7.11 (4.86, 9.35)	4.71 (3.11, 6.31)	1.78 (0.26, 3.30)	5.33 (2.69, 7.97)	5.05 (2.45, 7.64)
Mammogram ^d (aged 45–64 years)	58.1	4.96 (2.51, 7.41)	-0.28 (-2.19, 1.64)	-1.71 (-3.45, 0.02)	6.67 (3.71, 9.63)	6.87 (3.94, 9.79)

Note: Boldface indicates statistical significance ($p < 0.05$).

^aAfter the ACA (2014–2017) compared to before (2010–2013) for women aged 19–64 years.

^bUnadjusted difference-in-differences estimates of percentage-point change between low income group (≤138% FPL) and high-income group (≥400% FPL).

^cAdjusted difference-in-differences estimates, controlling for age group, race, ethnicity, marital status, education, and geographic region.

^dOnly collected from 2011–2017.

ACA, Affordable Care Act; FPL, federal poverty level.

only 14% of women reported having no usual place of care.¹ Women may disproportionately experience cost-related healthcare access problems because of their lower average incomes compared with men and their greater need for healthcare services.³⁰ Even for women with health insurance, 16% of privately insured women and 35% of women with Medicaid reported delaying or going without care because of lack of affordability prior to the ACA. Difficulty paying medical bills translates into women having to use up their savings or borrow money, which can result in difficulty paying for necessities like food.¹ The current study found that women in the two lower-income groups reported less difficulty finding affordable insurance after the ACA.

In the current study, women in all income groups also reported improved use of the preventive services of influenza immunization and cholesterol and BP screenings after the ACA coverage expansions. Starting in 2010, the ACA mandated coverage for selected preventive services without patient cost sharing^{5,31} in all forms of insurance, including employer-sponsored and individual market plans.^{2,5} The ACA likely also increased rates of preventive care use by increasing coverage rates, as having insurance is associated with higher rates of health screening and preventive care.^{1,3} A study of low-income adults after the ACA found increases in cholesterol and BP screening in Medicaid expansion compared with non-expansion states, although there was no statistically significant increase in influenza vaccination and mammograms.⁹ Other studies have reported less consistent increases in preventive care after the ACA expansion, including women's use of contraceptive services.^{11,32}

Despite the ACA's inclusion of essential health benefits for qualified health plans,^{5,31} women may continue to face access and affordability challenges because of coverage exclusions that persist for maintenance therapy for some conditions that are disproportionately prevalent in women. For example in 2014–2015, some insurers in Florida, Ohio, Tennessee, and Wisconsin did not routinely cover maintenance therapy, including chemotherapy for breast cancer.⁴ Additionally, the ACA's essential health benefits provision requires states to select benchmark plans, but insurers are allowed to offer plans that substitute some of these benefits as long as they are in the same category and provide the same level of coverage. These exclusions have led to variations within states' essential health benefits benchmark plans, which could leave some women with uncovered services, and ultimately have a negative impact on their health.⁴

Limitations

This study has limitations. As this study uses self-reported survey data from the NHIS regarding

experiences in the previous 12 months, there is the potential for recall and responder bias. The NHIS also does not include information on other important preventive services for women, such as contraception. The pre-ACA period of this study includes the 2010 start of early ACA policies such as the dependent coverage expansion and prohibition on preventive care cost sharing, which may have biased some of the findings toward the null. Also, data only cover the 3 years after the ACA coverage expansions were analyzed, and this time period may not be sufficient to demonstrate the full effect of the ACA. This study focused on measuring changes associated with the ACA coverage expansions by income level, but was not able to explore the impact of differences by state-level Medicaid expansion status in this NHIS dataset. Previous studies have demonstrated access and affordability differ based on whether a woman lives in a Medicaid expansion state.^{8–10,27} This is a direction for future women's health research. These analyses controlled for demographic factors, but other state-level factors were not accounted for in the models. This study also did not further examine specific effects by age group, where there may be different results. Finally, because a control group unexposed to the ACA does not exist, this study is able to report associations between the ACA and the studied health outcomes, but cannot demonstrate causality.

CONCLUSIONS

Overall, this study found improvements in insurance affordability, healthcare access, and use of preventive services for women in all income groups after the ACA coverage expansions in 2014, with greater improvements for women in the lowest income group relative to those with higher incomes. These findings are encouraging, and it will be critical to evaluate if these improvements are maintained or strengthened over time. Nonetheless, there continue to be threats to equitable health care for women, including for preventive care and reproductive services.^{33,34} Policies to expand insurance coverage, uphold cost sharing reductions, and improve access to preventive care without cost sharing remain important to protect women's health rights^{35,36} and to improve the health of all women, regardless of income.

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Lois Lee conceptualized and designed the study, interpreted the results, and drafted the initial manuscript. Michael Monuteaux assisted with the study design, obtained the datasets, conducted the statistical analyses, interpreted the results, and

critically reviewed the manuscript. Alison Galbraith assisted with the study design, interpreted the results, critically reviewed the manuscript, and supervised the study overall.

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SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at <https://doi.org/10.1016/j.amepre.2018.11.028>.

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