

# RUPRI Center for Rural Health Policy Analysis

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### **Effects of the Patient Protection and Affordable Care Act on Coverage and Access to Care in Metropolitan vs. Non-Metropolitan Areas through 2016**

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#### **Purpose**

Access to health insurance coverage has changed significantly following changes in public and private insurance due to the Patient Protection and Affordable Care Act (PPACA) which was implemented in 2014. Overall, uninsured rates have continuously fallen across the US through 2018, and access to care by various measures has improved. Less is known, however, about potential differences in the effects of the PPACA on coverage and access between metropolitan and non-metropolitan areas using quasi-experimental designs that enable causal inference and that examine the combined effects of the PPACA insurance provisions versus the effect of the Medicaid expansions. This analysis uses recent national data to shed light on possible differences in PPACA effects between metropolitan and non-metropolitan areas.

#### **Key Findings**

- From 2013 to 2016, the implementation of the PPACA led to an overall increase in insurance coverage rates of nearly 13 and 11 percentage points in non-metropolitan and metropolitan areas, respectively.
- Nearly 10 percentage points of the overall coverage gain in non-metropolitan areas was due to Medicaid expansion, while other PPACA insurance provisions combined (including primarily the individual mandate) increased coverage by about 3 percentage points.
- Among individuals below the new eligibility threshold of 138 percent of the Federal Poverty Level (FPL), Medicaid expansion increased the proportion with Medicaid coverage by nearly 15 percentage points from 2013 to 2016 in non-metropolitan areas, and by 11 percentage points in metropolitan areas.
- Among individuals below 138 percent FPL living in non-metropolitan areas in 2016, Medicaid expansion reduced the likelihood of reporting cost as a barrier to care by nearly 8 percentage points and increased the likelihood of having a routine visit in the past year by 6 percentage points (relative to 2013). In metropolitan areas, effects of Medicaid expansion on having had a routine visit were small and insignificant in 2016.

#### **Background**

Effects of the PPACA Medicaid expansions and private insurance market changes may vary between metropolitan and non-metropolitan residents. States with the highest proportion of rural residents were less likely to expand Medicaid than states with the highest proportion of urban residents.<sup>1</sup> In



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contrast, rural non-elderly residents were more likely to be uninsured prior to the PPACA.<sup>2</sup> Recent work investigating possible differences in Medicaid expansion effects between rural and urban areas and using American Community Survey (ACS) data through 2015 found that rural residents were 1.9 percentage points more likely than urban residents to obtain Medicaid coverage following the expansion. Soni, Hendryx, Simon<sup>3</sup> Another study however using the Behavioral Risk Factor Surveillance Survey (BRFSS) found that Medicaid expansion improved access to care for low-income childless adults in metropolitan areas but not in non-metropolitan areas.<sup>4</sup>

In this analysis, we extend previous evaluations of rural/urban differences in coverage and access to care by adding 2016 data and using quasi-experimental designs. We also examine the total effects of the PPACA on coverage and access which capture the effects of all insurance coverage provisions (individual mandate, Medicaid expansions, and later the employer mandate) that became effective in 2014 (or later as in the case for the employer mandate). We also separately estimate the effects of the Medicaid expansion.

## Methods

Data: To examine PPACA effects on coverage, we used 2011 through 2016 data from the ACS, a nationally representative annual survey providing information on health coverage status and type of coverage. Our main sample included non-elderly adults 19-64 years old. The Public Use Microdata Areas (PUMAs) identifier is the most detailed geographic identifier in the publicly available ACS dataset. We assigned PUMAs into metropolitan areas versus non-metropolitan areas following prior classifications developed by the United States Department of Agriculture Economics Research Service; a PUMA is considered metropolitan when more than 50% of its population (2010 Census) resides in a metropolitan county.<sup>5</sup>

To examine effects on access, we used data from the 2011 through 2016 BRFSS. BRFSS is a cross-sectional telephone survey conducted every month in all 50 states and the District of Columbia. The BRFSS includes questions on whether the respondent has a personal doctor and whether cost is a barrier to seeking care. We evaluated two additional outcomes: (1) whether a person reported having a routine checkup in the past 12 months and (2) an indicator for self-reported health status (good/very good/excellent health versus poor/fair health). To determine metropolitan/non-metropolitan residency, we used the metropolitan status identifier in the BRFSS and classified individuals who reside in the center city of a metropolitan statistical area (MSA), inside the county containing the MSA, or in a suburban county of the MSA as metropolitan residents, and those not living in an MSA as non-metropolitan residents.

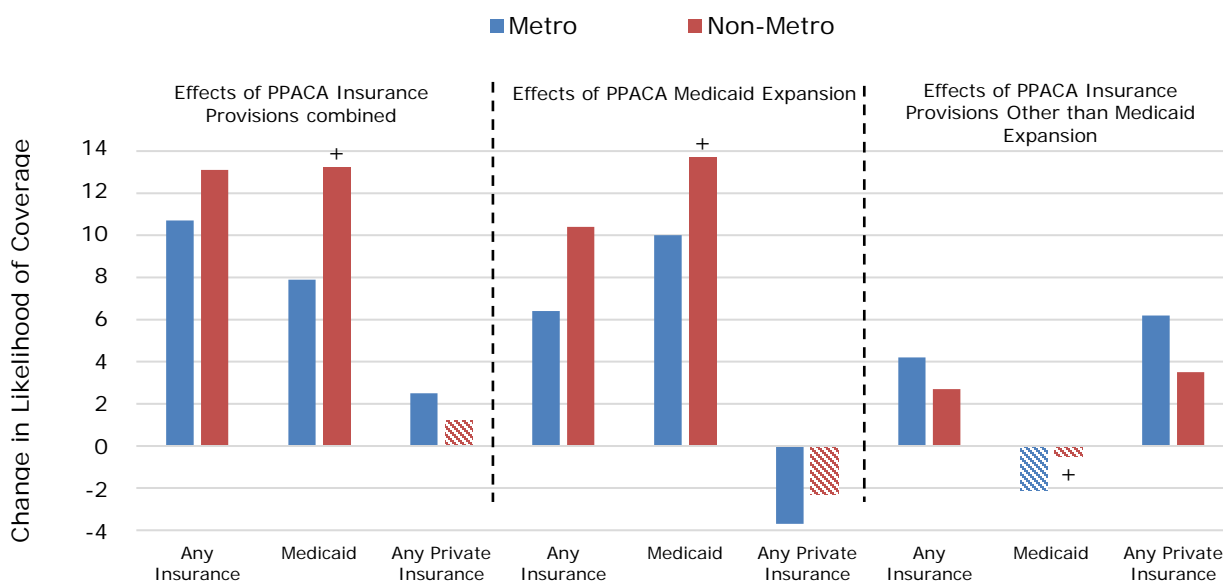
Research Design: We employed a quasi-experimental difference-in-difference-in-differences (DDD) design to examine the effects of the combined PPACA insurance provision on any coverage and type of coverage using ACS data. Following Courtemanche, Marton, Ukert, Yelowitz, Zapata<sup>6</sup> this model compares Medicaid-expanding and non-expanding states but also exploits variation in expected effects from the PPACA based on area-level pre-PPACA uninsured rates. The premise is that areas with higher pre-PPACA uninsured rates should experience greater gains. This strategy estimates the overall PPACA effect as well as the separate effects of the Medicaid expansion and other PPACA provisions. The regression models controlled for age, gender, race/ethnicity, US citizenship status, foreign-born status, marital status, number of children in household, education, income, employment status, and state-level unemployment rate. We also employed a difference-in-differences model to estimate Medicaid expansion effects specifically for individuals below 138% FPL. . Basically, this model subtracts the change in coverage rates between 2011-2013 and 2014-2016 in non-expanding states from that in expanding states as a way to control for changes in coverage due to national events that are shared between expanding and non-expanding states. Using the BRFSS, we estimated two difference-in-difference models: (1) to estimate the total effects of the PPACA insurance provisions on health care access, utilization, and self-reported health across the population and (2) to estimate the Medicaid expansion effects on these outcomes for individuals below 138% FPL. The regression models using BRFSS data

controlled for age, gender, race/ethnicity, education, income, employment status, and marital status. In all models, we estimated separate effects for 2014, 2015, and 2016 relative to 2011-2013. All models were further estimated separately for residents in metropolitan and non-metropolitan areas. Standard errors were clustered by states, and survey sampling weights were used.

## Results/Findings

Figure 1 reports the effects of the PPACA as a whole on health insurance coverage in metropolitan and non-metropolitan areas in 2016 relative to 2013 using ACS data.<sup>1</sup> The PPACA increased insurance coverage rates by 10.7 and 13.1 percentage points on average in metropolitan and non-metropolitan areas, respectively. Medicaid expansion increased coverage by 6.4 percentage points in metropolitan areas and 10.4 percentage points in non-metropolitan areas, while PPACA provisions other than Medicaid expansion added another 4.2 and 2.7 percentage points in metropolitan and non-metropolitan areas, respectively. Also shown in Figure 1 are the estimated effects on coverage type.

**Figure 1.** Overall Effects of the PPACA on Health Insurance Coverage in 2016 (versus 2011-2013) in Metropolitan and Non-Metropolitan Areas



Notes: Shaded bars indicate statistically insignificant effects ( $p > 0.1$ ). + indicates that point estimates should be viewed with caution due to potential pre-ACA trends in these outcomes that may bias the difference-in-difference-in-differences estimates. Estimates are from models using 2011-2016 ACS. The hash lines separate the overall effects of the PPACA into different components.

The Medicaid expansions had only small negative effects on private coverage (known as crowd-out effects), which suggests that there is little switching from private to public coverage, and that the majority of gains in public coverage from Medicaid expansion were among the previously uninsured. Non-Medicaid-expansion provisions had nearly double the effect on private coverage in metropolitan areas compared to non-metropolitan areas.

<sup>1</sup> A similar pattern in rural-urban differences was observed for 2014 and 2015, although PPACA effects were generally smaller for both areas, so we have omitted these estimates for brevity.

Figure 2 reports the Medicaid expansion effect on health insurance coverage among individuals below 138% FPL in 2016 versus 2013. Medicaid expansion increased the proportion of individuals with Medicaid coverage by 11.0 and 14.7 percentage points in metropolitan and non-metropolitan areas, respectively, and resulted in net increases in having any insurance coverage of 7.1 and 9.9 percentage points. The smaller change in coverage rates is due to a decline in any private coverage by 4.0 and 4.4 percentage points in metropolitan and non-metropolitan areas, respectively, indicating some crowd-out but no differences in crowd-out between metropolitan and non-metropolitan areas.

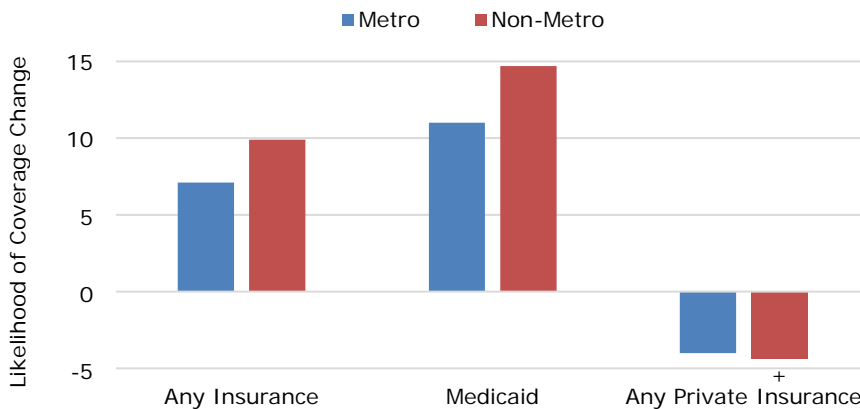
Access to care and self-reported health status showed little change in non-metropolitan areas on average following the PPACA (Table 1). In contrast, fewer metropolitan residents reported cost of care as a barrier to seeking care in the post-PPACA years.

**Table 1.** Changes in Likelihood (Percentage Points) of Reporting Having a Personal Doctor, Cost as Barrier to Care, Having a Routine Checkup, and Good Health in 2016 versus 2013 Due to the PPACA in Metropolitan and Non-Metropolitan Areas

	Sample Size	Effects in 2014	Effects in 2015	Effects in 2016
<b>Metropolitan</b>				
Personal Doctor <sup>+</sup>	654816	1.0	2.4**	0.7
Cost Barrier <sup>+</sup>	655282	-2.6***	-2.6**	-2.6**
Checkup	645843	1.8	0.8	3.2**
Good Health	654792	-1.8*	-0.4	1.2
<b>Non-Metropolitan</b>				
Personal Doctor	317822	-0.6	-0.0	0.4
Cost Barrier	318074	2.5	-2.6	-1.8
Checkup	310933	1.2	-0.3	1.5
Good Health	317897	0.6	3.1	-2.0

Notes: + indicates that point estimates should be viewed with caution due to potential pre-PPACA trends in these outcomes that may bias the difference-in-differences estimates. Standard errors are omitted for brevity. Estimates are from models using 2011-2016 BRFSS. \*Significant at 10 percent level; \*\*significant at 5 percent level; \*\*\*significant at 1 percent level.

**Figure 2.** Changes in Likelihood of Health Insurance Coverage in 2016 versus 2013 due to Medicaid Expansion among Individuals with Income less than 138% FPL



Notes: + indicates that the point estimate should be viewed with caution due to potential pre-ACA trends in this outcome that may bias the difference-in-differences estimate. Estimates are from models using 2011-2016 ACS.

Table 2 shows the Medicaid expansion effects on access to care, routine check-ups, and self-reported health status among individuals below 138% FPL for metropolitan and non-metropolitan areas. Medicaid expansion reduced the likelihood of reporting cost as a barrier to care for non-metropolitan residents in each of the post-PPACA years. Effects on cost as a barrier to care were slightly smaller and significant in 2015-2016 in metropolitan areas but insignificant in 2014. The likelihood of having a personal doctor increased similarly in metropolitan and non-metropolitan areas following Medicaid expansion, but estimates were statistically insignificant (except for 2015 in metropolitan areas). Expanding Medicaid also increased the likelihood of receiving a routine check-up in the past year in non-metropolitan areas by 11.4 and 6.4 percentage points in 2015 and 2016, respectively, but had no measurable effects on this outcome in metropolitan areas. We found no evidence of a significant effect on self-reported health overall (only an improvement in 2014 in metropolitan areas).

**Table 2.** Changes in Likelihood (Percentage Points) of Reporting Having a Personal Doctor, Cost as Barrier to Care, Having a Routine Checkup, and Good Health in 2016 versus 2013 Due to the PPACA Medicaid Expansions among Individuals below 138% FPL in Metropolitan and Non-Metropolitan Areas

	Sample Size	Effects in 2014	Effects in 2015	Effects in 2016
<b>Metropolitan</b>				
Personal Doctor	78043	2.1	3.5**	2.7
Cost Barrier	78110	-2.1	-5.5**	-6.7***
Checkup	76120	-0.3	3.4	0.2
Good Health	77976	4.2***	0.7	-1.4
<b>Non-Metropolitan</b>				
Personal Doctor	47337	3.2	3.6	3.6
Cost Barrier	47310	-5.1**	-7.4***	-7.8***
Checkup	45881	3.8	11.4***	6.4**
Good Health <sup>+</sup>	47283	2.5	4.5	0.3

Notes: + indicates that there were marginally significant differential pre-trends based on the joint significance of outcome changes in both 2011 and 2012 versus 2013 indicating that point estimates should be viewed with caution. Standard errors are omitted for brevity. Estimates are from models using 2011-2016 BRFSS. \*Significant at 10 percent level; \*\*significant at 5 percent level; \*\*\*significant at 1 percent level.

## Discussion

We provide novel evidence on the combined effects of the PPACA insurance provisions as well as evidence on the standalone effects of the Medicaid expansions on health insurance coverage status and type and access to care in non-metropolitan areas compared to metropolitan areas through 2016. Consistent with prior studies using data through 2015, we found that Medicaid expansion was a driver of coverage gains under the PPACA in 2016, especially in non-metropolitan areas, resulting in a larger increase in overall coverage rates (10 percentage points) compared to metropolitan areas (6 percentage points). Among low-income individuals (<138% FPL) potentially eligible by the Medicaid expansions, nearly two-thirds of the Medicaid coverage gains occurred among those who were previously uninsured. Other insurance provisions of the PPACA had a smaller impact, increasing private coverage by about 3 percentage points in non-metropolitan areas and about 6 percentage points in metropolitan areas. There are known challenges in expanding private insurance coverage in rural areas, including issues outside the scope of the PPACA.<sup>7</sup> Medicaid expansion improved access to care for individuals below 138% FPL in non-metropolitan areas, including an 8 percentage point decline in reporting cost as a barrier to care in 2016 and a 6 percentage point increase in having a routine visit in the past year. In contrast, the expansion effect on routine visits in metropolitan areas was small and not statistically significant. Our findings of improved access in non-metropolitan areas stand in contrast to findings by Benitez, Seiber<sup>4</sup> who reported improved access only in metropolitan areas. We attribute the difference in results to differences in model specifications and sample selection.

In conclusion, using national data through 2016 and quasi-experimental designs, we found significant improvement in coverage rates, a notable increase in routine medical visits, and a decline in reporting cost as a barrier to seeking care among low-income individuals in non-metropolitan areas following PPACA Medicaid expansion. The effects on coverage and routine visits are larger in non-metropolitan areas than in metropolitan areas, suggesting shrinking rural-urban disparities in these outcomes among low-income individuals in states that expanded Medicaid.

## Endnote

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