



# Findings Brief

## NC Rural Health Research Program

September 2014 (revised October 2014)

### Geographic Variation in Plan Uptake in the Federally Facilitated Marketplace

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#### BACKGROUND

One of the central and most visible components of the Affordable Care Act is the Health Insurance Marketplace (known as the Federally Facilitated Marketplace when administered by the federal government), which provides consumers a method to enroll in non-group health insurance coverage. It is the only enrollment method where qualifying individuals

can get premium- and cost-sharing subsidies. Previous research has suggested that although rural populations are more likely to be eligible for the Marketplace tax credits and cost-sharing subsidies,<sup>1</sup> outreach and enrollment in rural areas may face barriers.<sup>2</sup> For example, identifying potential eligibles in urban areas may be easier due to higher population density. To help monitor enrollment and inform best practices, the National Advisory Committee on Rural Health and Human Services recommended that “the Secretary evaluate the geographic efforts of year one enrollment and use that information to drive subsequent outreach, education, and enrollment efforts”.<sup>2</sup>

On September 18, 2014, the Assistant Secretary for Planning and Evaluation (ASPE) of the U.S. Department of Health and Human Services (HHS) released data showing that nearly five and a half million individuals had selected an insurance plan in the 36 states where the Federally Facilitated Marketplace was operating.<sup>3</sup> [It is important to note that the data report *plan selection* counts, not *enrollment*, which requires an individual to pay their premium. Payment confirmation data are not available in the newly released data. For simplicity, in this brief we refer to these *plan selectors* as *enrollees*.] The data provide ZIP code-level estimates of uptake between October 1, 2013 and April 19, 2014. Data for ZIP codes with 50 or fewer enrollees are suppressed. This suppression accounts for only 4% of total enrollees (17,674 ZIP codes representing 208,384 individuals of the 5.45 million selections). Although the plan selection counts—i.e., the “numerator”—are important to understanding the impact of the program,

#### KEY FINDINGS

- We combined recently released data on plan selection in the Federally Facilitated Marketplaces with estimates of the population likely to qualify for the marketplace (i.e. “eligibles”) to calculate the percent of potential eligible individuals who chose a plan (the “uptake rate”). We found considerable variation in uptake rates: the areas of the country that had selection in the top quarter had rates approximately two times as high as those in the lowest quarter (26.7% vs 13.9% of those eligible choose a plan).
- Rural areas appear to have lower rates of plan selection, suggesting that improving outreach and enrollment efforts in these communities may be particularly warranted. For example, uptake in *Urban Rural Urban Commuting Areas* (RUCAs), which averaged 23.2%, was more than uptake in *Large Rural* and *Small Rural* RUCAs (15.3% and 15.8%, respectively).
- The suppression of small data cells makes it challenging to draw conclusions about patterns in many rural areas. Although the suppression rules used for small numbers are understandable, creative solutions allowing public release of data in these areas (e.g., aggregated county-level data) would provide greater insight into plan uptake rates across the entire United States.

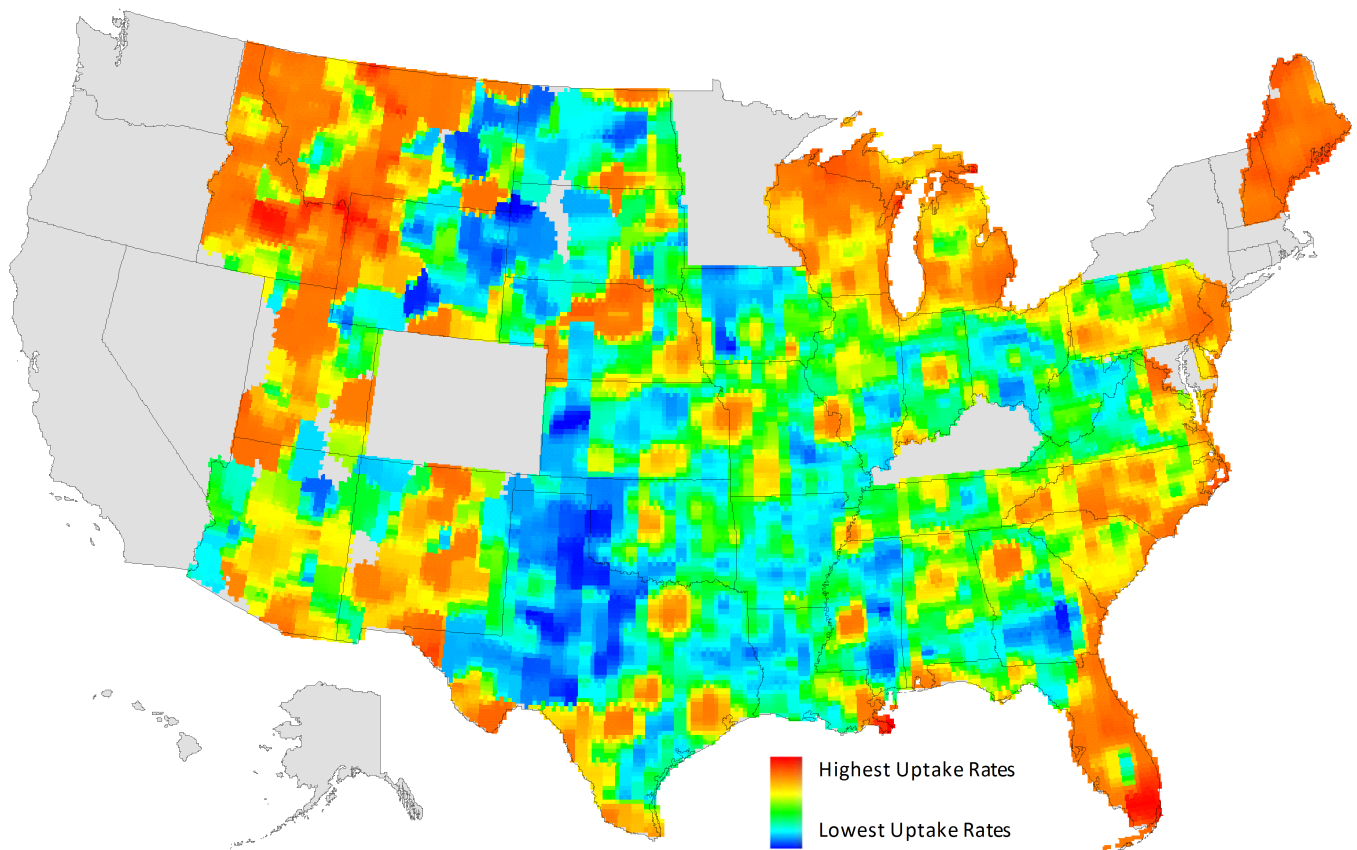
the percent of eligible individuals that chose a plan is also important. Understanding the percent of eligible individuals who actually chose a plan—among the uninsured and those in the non-group market—can help states and communities target limited outreach and enrollment resources to the communities most in need of assistance during the next open enrollment period.

In this brief, we calculate small-area measures of the percent of potential eligible individuals who chose a plan. We use the numerator data available from ASPE with estimates of ZIP Code Tabulation Areas (ZCTA)-level eligibles (denominator) to calculate the uptake rate. Briefly, the denominator consists of Bayesian synthetic estimates of the number of U.S. citizens (including naturalized) in a ZCTA who are uninsured or insured through non-group coverage only, age 64 years or less, with incomes above 100% of the Federal Poverty Guidelines (138% FPG in states expanding Medicaid). Children with incomes below the state Child Health Insurance Program (CHIP) maximum income were excluded. (See Methods section below for more detail.)

## RESULTS

Figure 1 presents a heat map based on the distribution of locally weighted uptake rates. Cooler colors represent lower rates of uptake among potentially eligible individuals; warmer colors represent higher rates. Uptake rates vary across the country; for example, Maine, New Hampshire, New Jersey, Wisconsin, Florida, and Idaho have higher rates, while northern Iowa, the Western “frontier” around the 100th degree longitude (i.e., western Texas, western Oklahoma, Kansas, North Dakota, South Dakota), Arkansas, and West Virginia have lower uptake rates. Some states have high uptake across both rural and urban areas (North Carolina, South Carolina, Wisconsin, and Michigan), while several have a mix of high and low uptake across rural areas (New Mexico, Arizona, Utah, Wyoming, and Montana). Generally though, rural areas of the country seem to have lower uptake rates—primarily cool colors with smaller hot spots that represent urban areas. Kansas City, St Louis, Dallas, Houston, Atlanta and Memphis, for example, stand out against the lower rates of the surrounding rural areas in these states.

**Figure 1: Regional Variation in Locally Weighted Plan Selection Rates in the Federally Facilitated Marketplace**



States shaded in grey have *state* health insurance marketplaces. Grey areas in Federally Funded Marketplace States are sparsely populated, and a reliable rate could not be calculated. See text for data sources and notes.

When areas are classified by Rural Urban Commuting Areas (RUCAs), *Urban* areas have the highest uptake rate (17.8% of estimated eligible choose a plan). In contrast, *Large Rural* RUCAs and *Small Rural* RUCAs have only 9.5% and 9.3% uptake rates, respectively. Although *Isolated* areas have uptake rates nearly as high as the *Urban* RUCAs, nearly 50% of the population and estimated eligibles residing in these areas (49.5% and 48.6%, respectively) live in ZIPs for which data are suppressed.

**Table 1: Uptake Rates by Rural Urban Commuting Area**

<b>RUCA Type</b>	<b>% eligibles selecting a plan</b>	<b>% total non-elderly population selecting a plan</b>
Urban	23.2%	3.7%
Large Rural	15.3%	2.5%
Small Rural	15.8%	2.8%
Isolated	23.1%	4.0%
<b>Total</b>	<b>22.4%</b>	<b>3.6%</b>

## LIMITATIONS

The primary limitation is the estimation of the number of eligibles. Differences between the estimated and actual number of eligibles could be large, especially in small areas, and if the bias is structural, errors in interpretation could occur. For example, the visible lower uptake rates for rural areas could be due to lower uptake rates in those areas, or it could be due to a systematic overestimation of the eligibility. A second limitation arises because uptake data are suppressed if the number of enrollees is 50 or less; this suppresses uptake for 60% of ZIP codes (approximately 4% of the plan selections). Rural areas were more likely to be suppressed; although ZIP codes with suppressed data were omitted (so the denominators did not contribute to the uptake rates), this may lead to inaccurate inferences.

Denominators were estimated at the ZCTA level, but uptake was reported at the ZIP code level. ZIPs and ZCTAs may vary considerably, although for local measures the differences should average out since denominators were dropped if the matching numerator was suppressed. However, if there is systematic difference between suppression and matching of ZCTAs and ZIP codes, interpretation could be wrong. It is also important to note that the ASPE data are based on *plan selections* rather than premium-paid, confirmed *enrollment*; these rates may differ, potentially systematically.

## POLICY IMPLICATIONS

The wide variation in uptake rates suggests variation in factors such as the receptivity to, intensity of, and effectiveness of outreach and enrollment. Understanding the differences in approach could yield best practices that might increase plan selection in areas with lower uptake.

The analysis suggests that rural areas tended to have lower uptake rates than urban areas. Future analyses could determine the factors affecting uptake; for example, do areas with greater health care infrastructure [e.g., hospitals and Federally Qualified Health Centers (FQHCs)] have higher uptake? Understanding the determinants of higher uptake rates would allow policy makers and programs to modify current strategies in order to increase enrollment.

ASPE's release of these data is beneficial for researchers, policy analysts, and others who want to better understand enrollment in the Federally Facilitated Markets (FFMs). There are likely to be multiple studies analyzing the patterns of uptake across the country, and these will almost surely lead to improved practices and more efficient identification of potential eligibles. There are considerable limitations with the data, many of which cannot readily be addressed in the

short run. Suppression of uptake in ZIP codes with 50 or fewer enrollees is problematic, especially in rural areas. Larger aggregations in such areas (e.g., to the county or 3 digit ZIP) could provide more complete data about rural areas.

## METHODS

### Marketplace Plan Selection Data

ASPE provided the number of plan selections by ZIP code during the initial open enrollment period (October 1, 2013 to April 19, 2014).<sup>3</sup> Plan selections for the ZIP code were based on the home address provided for that individual applicant, or if home address was unavailable, the applicant's residential address. The number of plan selections was suppressed for ZIP codes with 50 or fewer plan selections for privacy reasons. Note that this variable contains the number of selections, not the number of plans purchased; that is, ASPE did not know whether the applicant ultimately enrolled in the plan. This variable serves as the numerator.

### Potential Marketplace Eligible Individuals

We calculated the denominator(s) using a three step approach<sup>4</sup> similar to the method used in other approaches to small-area estimation. The approach is summarized briefly here.

**Step 1: Modeling individual probabilities.** First, we used the 2012 Public Use Microdata Sample (PUMS) of the American Community Survey (ACS) to model factors associated with an individual's probability of being eligible for the marketplace. An individual was identified as being "eligible" if they were age 0-64, uninsured or insured through non-group only, and a citizen of the United States. Children living in households with income deeming them eligible for Medicaid or CHIP<sup>5</sup> were classified as ineligible. Note that this definition does not incorporate other eligibility criteria, such as excluding those uninsured with access to employer sponsored insurance, but is likely a reasonable estimate based on data available in the ACS. We developed two estimates: one for those with income 100% FPG and above and one for those 138% FPG or above.

Using a separate linear probability model for each state, we estimated the probability an individual was eligible for the marketplace as a function of eight age categories (0-6, 7-11, 12-17, 18-24, 25-34, 35-44, 45-54, 55-64), gender, three race/ethnicity categories (Hispanic-any race, white only-not Hispanic, at least one race other than white-not Hispanic), six income categories (0-100% FPG, 100-150% FPG, 150-200% FPG, 200-300% FPG, 300-400% FPG, 400+% FPG), industry/unemployed (for adults), whether the individual was born in the United States, and indicators for the Public Use Microdata Area (PUMA). Sampling weights were used to ensure the sample was representative of the state population. The parameter estimates for each regression were set aside.

**Step 2: Developing Small Area Estimates.** With the individual parameter estimates in hand, we then collected ZCTA-level data on corresponding characteristics from the ACS summary data. For example, table S2407 was used to characterize the proportion of the ZCTA that worked in each industry, B17024 was used to characterize the age/income profile of the county, and B05003 was used to characterize the age/sex/nativity of the community. These data were then used with the parameter estimates from Step 1 to develop the average probability in the ZCTA of being eligible for the marketplace. This probability, multiplied by the number of non-elderly in the ZCTA, served as the initial estimate for the ZCTA-level denominator. Using the MABLE data engine provided by the Missouri Census Data Center,<sup>6</sup> we developed crosswalks from ZCTA to PUMA so that the ZCTA-specific estimates could be allocated to PUMAs (ZCTAs spanning multiple PUMAs were allocated proportionally by population).

**Step 3: Raking Estimates.** The first two steps of this process do not require the sum of the ZCTA-specific estimates to equal the estimated number of eligibles from the ACS PUMA. Therefore, the ZCTA-specific estimates were "raked" to ensure that the sum of the ZCTA-estimates in a PUMA equals the estimated number in the PUMA.<sup>7</sup> For example, if the summed number of eligibles in the ZCTAs was 100 but the PUMA estimate was 110, each ZCTA-specific estimate was increased by 10%. Similarly, the models do not impose that the number of eligibles with incomes above 138% FPG is less than the number of eligibles with incomes above 100% FPG; the model is iteratively raked to ensure that the data are internally consistent in this respect. The final denominator was the number of estimated eligibles in the ZCTA with incomes above 100% FPG for Medicaid non-expansion states and above 138% FPG for Medicaid expansion states.



## Calculation of Local Rates

Because ZCTAs can be small, and thus impose considerable sampling variation, we calculated (weighted) local uptake rates. Briefly, we calculated weighted sums of enrollees and eligible individuals for a latitude/longitude grid. We identified all ZCTAs with centroids within 50 miles of the grid point and calculated weights based on the distance from the ZCTA to the grid; the function  $\exp(-0.1 * \text{miles})$  means a ZCTA 30 miles away receives 5% of the weight of a ZCTA with centroid equal to the grid point.<sup>8</sup> Percentiles for the uptake rates were calculated. Because of the technical nature of weighted geographic averages, data for Alaska are not presented in this brief.

Note: On October 1, 2014, a corrected version of this brief was produced. The calculations in the previous version of this brief did not accurately account for ZIP codes that crossed county lines. Correcting for this error lowered the estimated number of eligibles and thus increased estimated uptake rates, but did not change the substantive conclusions.

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*This study was partially funded through Cooperative Agreement U1GRH07633, Rapid Response to Requests for Rural Data Analysis and Issue Specific Rural Research Studies, with the Federal Office of Rural Health Policy (ORHP) and the Office of Policy, Analysis and Evaluation (OPAE), Health Resources and Services Administration, U.S. Department of Health and Human Services. The conclusions and opinions expressed in this brief are the authors' alone; no endorsement by the University of North Carolina, ORHP, OPAE, or other sources of information is intended or should be inferred.*



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