**Appendix Table 1.** State Medicaid Expansions

| States | Date[a] | Expansion status |
|---|---|---|
| Arizona, Arkansas, California, Colorado, Connecticut, Hawaii, Illinois, Iowa, Kentucky, Maryland, Minnesota, New Jersey, New Mexico, Nevada, North Dakota, Ohio, Oregon, Rhode Island, Washington, West Virginia | January 1, 2014 | Full expansion states for all 2014/2015 TUS-CPS waves; included in analysis as treatment states |
| Washington DC, Delaware, Massachusetts, New York, Vermont | January 1, 2014 | Had substantial Medicaid expansions before 2014; excluded from analysis |
| Michigan | April 1, 2014 | Full expansion state for all 2014/2015 TUS-CPS waves; included in main analysis as treatment |
| New Hampshire, Pennsylvania, Indiana | August 15, 2014–February 1, 2015 | Expanded Medicaid in middle of study period; excluded from analysis |
| Alaska, Louisiana, Maine, Montana, Virginia | September 1, 2015–TBD | Did not expand Medicaid during study period; included as control states in analysis |
| Alabama, Florida, Georgia, Idaho, Kansas, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Wisconsin, Wyoming | – | Did not expand Medicaid; included as control states in analysis |

[a]State expansion dates were retrieved from the Kaiser Foundation's State Health Facts webpage: www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/.

TUS-CPS, Tobacco Use Supplement-Current Population Survey; TBD, to be determined.

**Appendix Table 2.** Cross-validation for Boosted Logistic Regression With k=5

| Iteration | In sample (N=8,000) | | Out of sample (N=2,000) | |
|---|---|---|---|---|
| | Correctly classified, % | Pseudo $R^2$ | Correctly classified, % | Pseudo $R^2$ |
| Panel A: Single adults | | | | |
| 1 | 79.9 | 0.372 | 78.1 | 0.340 |
| 2 | 79.8 | 0.372 | 79.1 | 0.344 |
| 3 | 79.6 | 0.367 | 80.1 | 0.363 |
| 4 | 79.8 | 0.369 | 78.2 | 0.349 |
| 5 | 80.0 | 0.375 | 78.6 | 0.332 |
| Average | 79.8 | 0.371 | 78.8 | 0.345 |
| Panel B: Married adults | | | | |
| 1 | 82.1 | 0.422 | 80.2 | 0.332 |
| 2 | 81.8 | 0.417 | 81.5 | 0.384 |
| 3 | 82.2 | 0.414 | 81.5 | 0.378 |
| 4 | 81.7 | 0.412 | 80.9 | 0.399 |
| 5 | 82.1 | 0.420 | 81.9 | 0.366 |
| Average | 81.9 | 0.417 | 81.2 | 0.372 |

*Notes*: This reports the results of cross-validating a boosted logistic regression on 10,000 random ASEC single adult and married couple households. See [1] for the boosted regression algorithm and cross-validation performed. $R^2$ values are McFadden's pseudo $R^2$.

ASEC, Annual Social and Economic Supplement of the Current Population Survey.

**Appendix Table 3.** Characteristics of Adults Aged <65 Years Observed and Predicted Below 138% of the Federal Poverty Level (FPL)

| Variable | Below 138% of FPL (ASEC) | Predicted Below (TUS-CPS) |
|---|---|---|
| Age, years | 42.36 (12.15) | 44.14 (12.27) |
| Female | 0.55 (0.50) | 0.55 (0.50) |
| Black | 0.16 (0.37) | 0.16 (0.36) |
| Hispanic | 0.21 (0.41) | 0.23 (0.42) |
| Other non-Hispanic | 0.09 (0.28) | 0.09 (0.28) |
| Annual family income, $ | 34,946 (32,166) | 30,372 (27,224) |
| High school graduate | 0.38 (0.48) | 0.40 (0.49) |
| Some college | 0.26 (0.44) | 0.26 (0.44) |
| College graduate | 0.13 (0.34) | 0.11 (0.32) |
| Full-time employed | 0.32 (0.47) | 0.25 (0.43) |
| Part-time employed | 0.13 (0.34) | 0.14 (0.34) |
| Not in labor force | 0.44 (0.50) | 0.50 (0.50) |

*Notes*: This table compares the characteristics of those in health insurance observed to be below 138% of the FPL in the ASEC data to those predicted to be below 138% of the FPL in the TUS-CPS data by boosted logistic regression.

ASEC, Annual Social and Economic Supplement of the Current Population Survey; TUS-CPS, Tobacco Use Supplement-Current Population Survey

**Appendix Table 4.** List of State-level Control Variables

| Topic | Variables | Source(s) |
|---|---|---|
| Socioeconomics | State/year unemployment rate and poverty rate | [2] |
| Welfare policies | Maximum temporary assistance for needy families[a] (TANF), effective state minimum wage, and state earned income tax credit (EITC) as a percentage of federal EITC | [2,3] |
| Tobacco control policies | State and federal taxes-per-pack on cigarettes,[a] percentage of residents covered by smoke-free laws, per capita expenditures on tobacco control[a], and number of cessation aids, number of barriers to cessation aids, and generosity of cessation coverage for Medicaid enrollees.[b] | [4,5,6,7,8] |

[a]Dollar amounts are adjusted to 2015 dollars using a gross domestic product deflator provided by the Bureau of Economic Analysis, https://fred.stlouisfed.org/series/GDPDEF.
[b]Generosity of cessation coverage coded as indicators if state Medicaid programs offered any nicotine replacement therapies (NRTs) and prescription medicines with co-payments, offered NRTs and medicine without co-payments, offered NRTs, medicines, and counseling with co-payments, and offered NRTs, medicines, and counseling without co-payments (with no NRTs or prescription medicines as base case).[9]

**Appendix Table 5.** Sensitivity Analyses

| Cut points | Sensitivity (FP rate), % | Sample size | AME (Quit attempts) | AME (30-day cessation) | AME (90-day cessation) |
|---|---|---|---|---|---|
| 0.25 (single); 0.075 (married) | 89.45 (45.50) | 10,993 | –0.025 (–0.09, 0.04) | –0.006 (–0.03, 0.02) | –0.008 (–0.03, 0.01) |
| 0.30 (single); 0.09 (married) | 86.93 (42.54) | 10,403 | –0.032 (–0.10, 0.04) | –0.008 (–0.04, 0.02) | –0.010 (–0.03, 0.02) |
| 0.35 (single); 0.105 (married) | 84.44 (40.07) | 9,873 | –0.033 (–0.10, 0.03) | –0.007 (–0.03, 0.02) | –0.009 (–0.03, 0.02) |
| 0.40 (single); 0.120 (married) | 81.94 (37.86) | 9,404 | –0.034 (–0.10, 0.03) | –0.002 (–0.03, 0.03) | –0.006 (–0.03, 0.02) |
| 0.45 (single); 0.135 (married) | 79.47 (36.05) | 8,977 | –0.036 (–0.10, 0.03) | –0.004 (–0.04, 0.03) | –0.006 (–0.03, 0.02) |
| 0.50 (single); 0.15 (married)[a] | 76.94 (34.24) | 8,523 | –0.019 (–0.09, 0.05) | 0.003 (–0.03, 0.03) | –0.001 (–0.03, 0.03) |
| 0.55 (single); 0.175 (married) | 74.38 (32.65) | 7,999 | –0.018 (–0.09, 0.05) | –0.001 (–0.03, 0.03) | –0.004 (–0.03, 0.02) |
| 0.60 (single); 0.19 (married) | 71.29 (31.27) | 7,510 | –0.023 (–0.10, 0.05) | 0.001 (–0.03, 0.03) | –0.002 (–0.03, 0.03) |
| 0.65 (single); 0.205 (married) | 68.05 (29.88) | 7,015 | –0.012 (–0.09, 0.07) | 0.001 (–0.04, 0.04) | –0.002 (–0.03, 0.03) |
| 0.70 (single); 0.21 (married) | 64.44 (28.75) | 6,463 | –0.014 (–0.09, 0.06) | –0.002 (–0.04, 0.03) | –0.003 (–0.03, 0.03) |
| 0.75 (single); 0.225 (married) | 59.89 (27.78) | 5,840 | –0.015 (–0.09, 0.07) | 0.000 (–0.04, 0.04) | 0.000 (-0.03, 0.03) |
| High school education or less[b] | 60.96 (57.58) | 10,061 | –0.03 (–0.08, 0.02) | –0.008 (–0.04, 0.02) | –0.003 (–0.03, 0.02) |

*Notes*: This table repeats the main hypothesis test reported in the paper (the change in probability of each smoking cessation outcome associated with expanding Medicaid in states that expanded Medicaid) for a variety of different cut-points that increase sensitivity and power (while also increase proportion of false-positives). CIs are reported in parentheses.
[a]This is the main specification reported in the paper.
[b]Rather than varying the cut-points, this row restricts the sample to individuals with high school education or less following previous approaches used to study effects of the Medicaid expansion when income is not available.

FP, false positive rate; AME, average marginal effect.

**Appendix Table 6.** Multiple Imputation Analysis of the Effect of the ACA Medicaid Expansion on Smoking Cessation

| **Expand×Post effect on outcome** | **Unadjusted for state controls (1)** | | **Adjusted for state controls (2)** | |
|---|---|---|---|---|
| | **Original estimate** | **Multiple imputation estimate** | **Original estimate** | **Multiple imputation estimate** |
| Quit attempts | 0.010 (–0.05, 0.07) | 0.003 (–0.06, 0.07) | –0.019 (–0.09, 0.05) | –0.023 (–0.09, 0.05) |
| 30-day cessation | 0.014 (–0.01, 0.04) | 0.012 (–0.02, 0.04) | 0.003 (–0.03, 0.03) | 0.000 (–0.03, 0.03) |
| 90-day cessation | 0.010 (–0.02, 0.04) | 0.004 (–0.02, 0.03) | –0.001 (–0.03, 0.03) | –0.006 (–0.03, 0.02) |

*Notes*: This table reports estimates and CIs for the effects of the Medicaid expansion in terms of average treatment effects, comparing estimates from the specification reported in the paper and after multiple imputation. Multiple imputation estimates were derived by generating 20 random samples of 10,000 single adult and married couple health insurance units, with selection proportional to the probability of being selected into the ASEC, to repeat the full analyses in this paper (predicting whether individual's health insurance unit was below 138% of the FPL), propensity score matching, and logistic regression analysis) M=20 times. Combined marginal effects and variances associated with the interaction term for each logistic regression were estimated using Rubin's combing rules to compute point estimates $\bar{Q}$, total variance T, and CIs where:

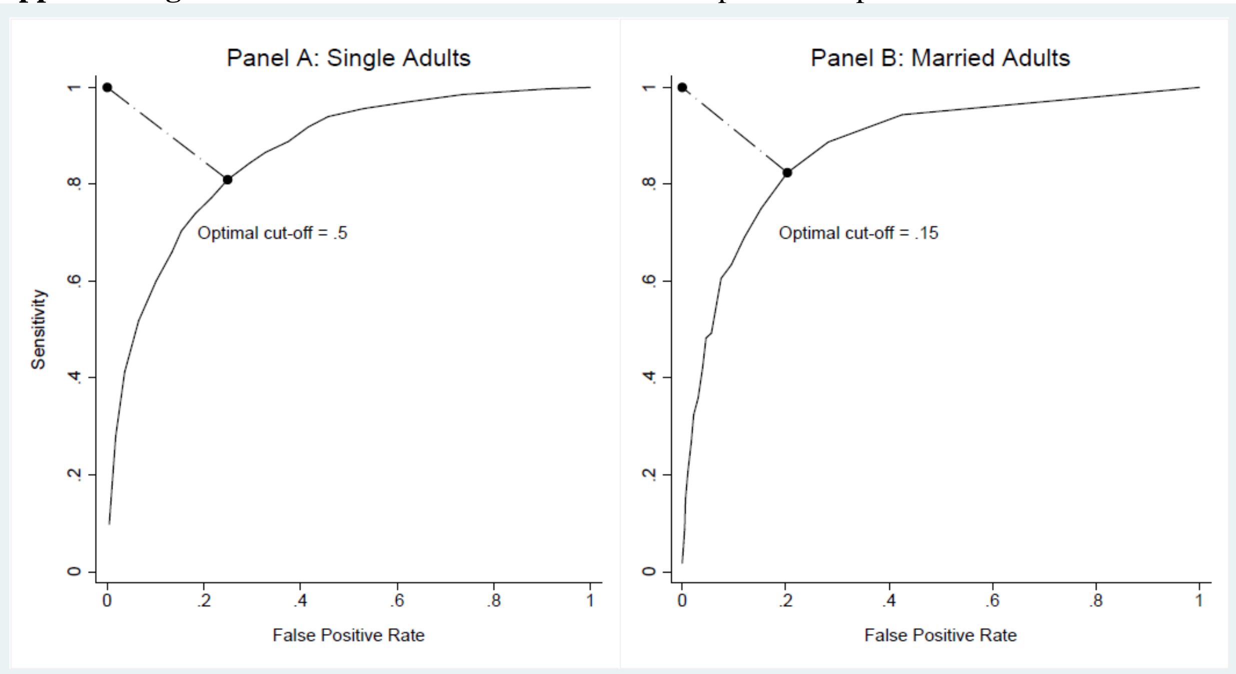
$$\bar{Q} = \frac{1}{M}\sum_{i=1}^{M}\hat{Q}^{(i)}$$

$$T = \frac{1}{M}\sum_{i=1}^{M}U^{(i)} + \frac{(M+1)}{M(M-1)}\sum_{i=1}^{M}(\widehat{Q}^{(i)} - \bar{Q})^2$$

where $\hat{Q}^{(i)}$ and $U^{(i)}$ are the average marginal effect and variance (respectively) obtained using the *i*th (for i = 1, 2, …, M=20) ASEC sample to replicate the analyses, starting with predicting whether each individual's health insurance unit was below 138% of the FPL.[10]

ACA, Affordable Care Act; ASEC, Annual Social and Economics Supplement of the Current Population Survey; FPL, federal poverty level.

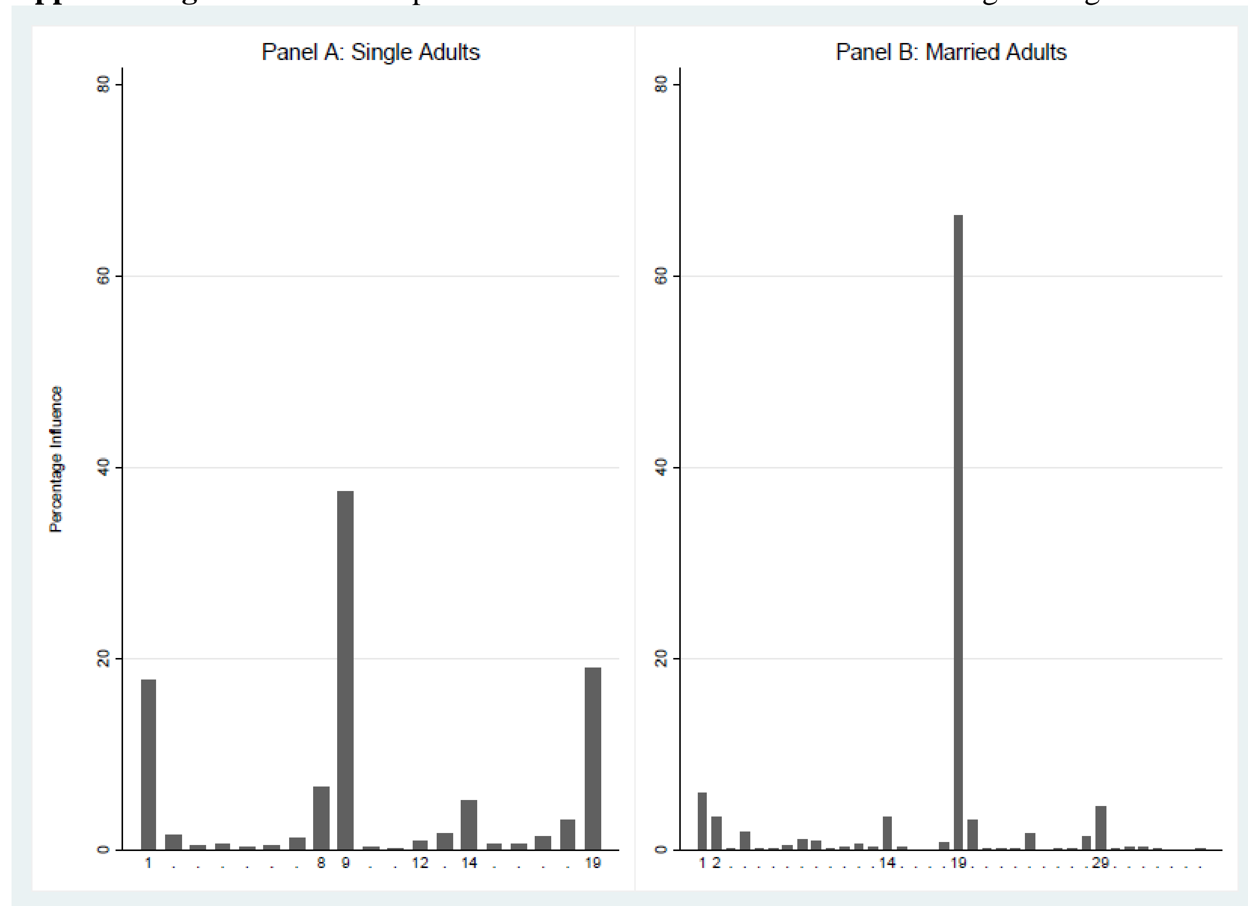
**Appendix Figure 1.** ROC curves used to determine cut-points sample restriction.




*Notes*: These ROC curves plot sensitivity versus false positive rates by incrementing cut-points for the predicted probability of being below 138% of the federal poverty level by 0.05 (from 0 to 1). Cut-points were determined by minimizing the distance between the curve and what would be a perfect test (i.e., 100% sensitivity and 0% false positive rate). These cut-points were selected to be 0.5 for single adult (Panel A) and 0.15 for married adult (Panel B) households.

ROC, receiver operating characteristic.

**Appendix Figure 2.** Influence plots for variables included in the boosted logistic regression.




*Notes*: These influence plots display the percentage of influence that each variable had on the predicted probabilities of being below 138% of the federal poverty level given by the boosted logistic regression. See [1] for more information about influence plots for boosted logistic regression. Some highly influential variables for single adult predictions (Panel A) included age (1), whether college graduate (8), whether usually full-time employed (9), hours worked on main job last week (14), and family income of the householder (19). Some highly influential variables for married adult predictions (Panel B) included age (1), number of children (2), hours worked on main job last week (14), family income of the householder (19), and hours spouse worked on main job last week (29).

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