Medicaid Expansions from 1997 to 2009 Increased Coverage and Improved Access and Mental Health Outcomes for Low-Income Parents

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Objective. To assess the effects of past Medicaid eligibility expansions to parents on coverage, access to care, out-of-pocket (OOP) spending, and mental health outcomes, and consider implications for the Affordable Care Act (ACA) Medicaid expansion.

Data Sources. Person-level data from the National Health Interview Survey (1998–2010) is used to measure insurance coverage and related outcomes for low-income parents. Using state identifiers available at the National Center for Health Statistics Research Data Center, we attach state Medicaid eligibility thresholds for parents collected from a variety of sources to NHIS observations.

Study Design. We use changes in the Medicaid eligibility threshold for parents within states over time to identify the effects of changes in eligibility on low-income parents.

Principal Findings. We find that expanding Medicaid eligibility increases insurance coverage, reduces unmet needs due to cost and OOP spending, and improves mental health status among low-income parents. Moreover, our findings suggest that uninsured populations in states not currently participating in the ACA Medicaid expansion would experience even larger improvements in coverage and related outcomes than those in participating states if they chose to expand eligibility.

Conclusions. The ACA Medicaid expansion has the potential to improve a wide variety of coverage, access, financial, and health outcomes for uninsured parents in states that choose to expand coverage.

Key Words. Medicaid, access to care, financial burden, mental health, parents

As of May 2015, 28 states and the District of Columbia had chosen to implement the Medicaid expansion allowed by the Affordable Care Act (ACA). The expansion is expected to extend coverage to millions of Americans with incomes up to 138 percent of the federal poverty level (FPL). While nonelderly childless adults will generally see the largest gains in eligibility in

expansion states, low-income parents are also expected to benefit. In 2012, the median eligibility threshold for parents was 63 percent of the FPL, and only 18 states, including DC, had thresholds that were at or above the poverty level (Heberlein et al. 2012). As a result, approximately 5 million uninsured parents could gain coverage if all states expanded Medicaid under the ACA (Heberlein et al. 2012).

Early evidence on the 2014 expansions finds that enrollment in Medicaid has increased and that fewer nonelderly adults are uninsured (Cohen and Martinez 2014; Long et al. 2014a,b; Wachino, Artiga, and Rudowitz 2014). Estimates for parents also show coverage increases in states that have expanded Medicaid under the ACA (Kenney et al. 2014). Ultimately, however, the goal of Medicaid expansions is to reduce the financial barriers to obtaining necessary health services and improve health and financial outcomes for the low-income target population. With concerns about whether expanding states will be able to meet increased demand for care under the ACA Medicaid expansion and 22 states still not participating, it will be important to assess the effects of the ACA Medicaid expansion on a wide variety of access, utilization, financial, and health outcomes. Unfortunately, data limitations and lagged effects will not allow robust estimates of such impacts until 2016. Until then, the effects of past Medicaid expansions to parents can provide some relevant insights.

Since welfare reform delinked Medicaid and cash assistance in 1996, states have made many changes to income eligibility thresholds for parents. Between 1996 and 2010, most states increased eligibility for parents beyond their 1996 AFDC thresholds. While many increases were relatively modest, several states made more significant expansions over this period. For example, Arizona increased eligibility to 200 percent of the FPL in 2003. More recently, in 2008, Maryland increased their income eligibility threshold for parents to 116 percent of the FPL. At the same time, economic conditions and other factors have resulted in some decreases in eligibility thresholds over time.

Several studies have considered the effects of past Medicaid expansions to adults on insurance coverage (Kronick and Gilmer 2002; Aizer and Grogger 2003; Busch and Duchovny 2005; Atherly et al. 2012; Hamersma

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and Kim 2013). The evidence is consistent that expanding Medicaid to low-income parents increased Medicaid coverage and reduced uninsurance, though findings on the extent to which Medicaid coverage displaced private coverage are more variable. Fewer studies have examined the effects of Medicaid expansions on access to care and related outcomes among low-income adults. Busch and Duchovny (2005) studied expansions to parents from 1996 through 2001 and found that the expansions increased cancer screening among women and reduced unmet needs due to cost. More recently, results from the Oregon Health Insurance Experiment have shown that expanding access to public coverage led to increased use of both ambulatory and inpatient services, reduced out-of-pocket medical expenditures, and improved self-reported physical and mental health among nonelderly adults (Finkelstein et al. 2012).

Expanding Medicaid eligibility is therefore expected to increase health insurance coverage, which should improve access to care and reduce financial strain, which may then result in improved general and mental health (Institute of Medicine 2009; Gross and Notowidigdo 2011; Finkelstein et al. 2012). In this study, we examine the effects of Medicaid eligibility changes for low-income parents from 1997 to 2009 on coverage, health care access and use, out-of-pocket spending, and mental health outcomes. We contribute to the existing literature by examining expansions over a longer time horizon in a diverse set of states and by considering a broader set of outcomes than previous studies of Medicaid expansions to parents. We also use an analytic approach that relies directly on the variation in the income eligibility thresholds across states and over time to identify the effects of the expansions. This approach captures the spillover effects of expansions on those who are already eligible and provides a straightforward method for considering the potential implications of the ACA Medicaid expansion for states that have and have not expanded coverage under the ACA.

DATA AND METHODS

We use data from the National Health Interview Survey (NHIS) (1998–2010) to measure outcomes and individual characteristics for low-income parents. We limit our sample to nonelderly adults (18–64) with at least one dependent child in their health insurance unit (HIU)[1] and HIU income less than 138 percent of the FPL. Because individuals can report multiple types of coverage at the time of the survey, we assign each observation one type of coverage

according to the following hierarchy: employer-sponsored insurance (ESI), Medicare, Medicaid/other state, private nongroup insurance, other coverage, uninsured. We exclude pregnant women, those receiving supplemental security income, and those with Medicare coverage because they may be eligible for Medicaid through other pathways and are less likely to be affected by the expansions to parents.

We construct several indicators of access and service use, including having a usual source of care other than the emergency department (ED), receiving an office visit in the past 2 weeks, and seeing a general doctor in the past year. We also generate four measures of unmet needs due to cost in the past 12 months, including unmet need for medical care, prescription drugs, mental health care, or any of these unmet needs. Similarly, we examine delayed care due to cost and delayed care due to noncost reasons, including difficulty getting through on the phone, inconvenient office hours, wait time for an appointment or in the office, or a lack of transportation. We also generate indicators for those who have had more than one or more than three ED visits in the past 12 months. We construct two binary measures of OOP spending, including indicators for whether an individual's family spent more than $500 in OOP costs or more than $2,000 in OOP costs in the past 12 months.[2]

Finally, we use information on how often individuals reported any of six feelings of psychological distress (i.e., sad, nervous, restless, hopeless, worthless, and everything is an effort) in the past 30 days to generate the Kessler K6 Psychological Distress Scale. Options were none of the time, a little of the time, some of the time, a lot of the time, and most of the time. The scale is calculated by assigning the options "none" through "most of the time" values of zero through four and adding the values for all six feelings of distress. We then classify individuals into three categories of psychological distress: mild (0–7), moderate (8–12), and severe (13+).[3] The means of all outcome variables for the pooled sample (1998–2010) of low-income parents are in Table 1.[4]

We compiled information on state Medicaid eligibility rules from the Kaiser Family Foundation and the Center on Budget and Policy Priorities reports (Guyer and Mann 1998, 1999; Cohen Ross and Cox 2000, 2002, 2003, 2004, 2005; Broaddus et al. 2002; Cohen Ross, Cox, and Marks 2007; Cohen Ross, Horn, and Marks 2008; Cohen Ross et al. 2009; Heberlein et al. 2011). The thresholds are measured as a percent of the FPL and take into account state-specific earnings disregards. Many of the eligibility changes between 1997 and 2009 were modest and often reflect changes in the poverty threshold rather than changes in Medicaid policy. However, there were several significant expansions over this time period. Arizona, Connecticut,

Table 1:   Coverage and Related Outcomes for Low-Income Parents

	Mean	SE
Any coverage	0.543	0.005
Medicaid	0.274	0.004
Private (ESI or nongroup) coverage	0.269	0.004
ESI	0.239	0.004
Usual source of care (other than ED)	0.705	0.004
Had office visit, past 2 weeks	0.113	0.002
Seen general doctor, past 12 months	0.526	0.004
Unmet need for medical care due to cost, past 12 months	0.155	0.003
Unmet need for prescription meds due to cost, past 12 months	0.185	0.003
Unmet need for mental health care due to cost, past 12 months	0.050	0.002
Unmet need for medical care, prescription meds, or mental health care due to cost, past 12 months	0.259	0.004
More than one ED visit, past 12 months	0.272	0.004
More than three ED visits, past 12 months	0.040	0.002
Delayed care due to cost, past 12 months	0.172	0.003
Delayed care due to noncost reasons, past 12 months	0.248	0.004
Family OOP spending $500 or more, past 12 months	0.352	0.004
Family OOP spending $2,000 or more, past 12 months	0.114	0.003
Kessler scale (0–7): No or mild psychological distress	0.840	0.003
Kessler scale (8–12): Moderate psychological distress	0.102	0.002
Kessler scale (13+): Severe psychological distress	0.058	0.002

Note. Low-income parents are those with health insurance unit income less than 138% of the federal poverty level.
ED, emergency department; ESI, employer-sponsored insurance; OOP, out of pocket.
Source: National Health Interview Survey 1998–2010.

DC, Illinois, Maine, Maryland, Missouri, New Jersey, New York, Rhode Island, Tennessee, and Wisconsin each increased their income eligibility threshold for parents by at least 50 percentage points over this time period. By 2009, 18 states had thresholds of at least 100 percent of the FPL and 11 of those had expanded beyond the ACA threshold of 138 percent. There are also several significant declines in eligibility reported over this time period. We consulted additional sources in an effort to confirm the timing and extent of the eligibility changes over this period, but some measurement error likely remains and we discuss this issue further below.[5] Table 2 summarizes the changes in eligibility for parents and more detail can be found in Table S1.

For ease of interpretation, we estimate linear probability models on binary measures of coverage, access, OOP spending, and mental health outcomes, and include person-level controls for age, sex, race/ethnicity, citizenship, education, work status, HIU income relative to poverty, marital status, and number of children.[6] Controls for county-level percent employed,

Table 2:   Changes in Medicaid Eligibility Thresholds for Parents, 1997–2009

States with an eligibility expansion of at least 50 percentage points	AZ (2001,2003), CT (2001, 2005), DC (1998), IL (2004, 2005), ME (1998, 2001, 2006), MD (2008), MO (1999), NJ (2000, 2005, 2008), NY (2001), RI (1998), TN (2008), WI (1999)
States with an eligibility expansion of at least 20 percentage points	CA (2000), CO (2006, 2010), CT (2007), FL (2000), GA (2001), IL (2002), KY (2000), NM (1998), ND (1999, 2001), OH (1998), SC (2001), VT (2000), WA (1998)
States with an eligibility contraction of at least 50 percentage points	CT (2002), NJ (2002)
States with an eligibility contraction of at least 20 percentage points	MO (2003, 2005), ND (2004)

Notes. We attempt to capture eligibility for full Medicaid benefits or equivalent programs. We do not account for periods where enrollment is capped or closed.
Source: Center on Budget and Policy Priorities and Kaiser Family Foundation Reports 1998–2011.

percent in poverty, hospital beds per capita, and Medicare average adjusted per capita cost are also included to measure the local economic and health care context.[7] A full list of our covariates and their means for our sample of low-income parents are in Table 3.

Our key variable of interest is the Medicaid income eligibility threshold for parents, measured as a percent of the FPL, and scaled such that a threshold of 100 percent is set equal to 1. By also including state and year fixed effects, we exploit the variation within states over time to identify the effects of changing Medicaid eligibility on our outcomes of interest. All standard errors are adjusted for the complex survey design and multiple imputation of income on the NHIS using the svy and mi commands in Stata 13 (StataCorp 2013).[8]

This approach follows that used by Hamersma and Kim (2013) in their study of parental eligibility expansions, but it differs from several studies that have used the approach pioneered by Cutler and Gruber (1996). The latter approach estimates the effects of individual Medicaid eligibility on coverage or other outcomes, but instruments for individual eligibility using the proportion of a standardized sample that would be eligible for Medicaid under the state's eligibility rules. The advantage of using the eligibility threshold to identify the effects of Medicaid expansions is that we do not need to impute Medicaid eligibility to individuals. As there is measurement error in income and other determinants of Medicaid eligibility on all surveys, the potential for misclassification of individual eligibility is quite strong. In addition, the use of Medicaid eligibility thresholds leads to a simple interpretation of the coefficient on the variable of interest, as the effect of a unit change in the eligibility

Table 3:   Covariates for Models on Low-Income Parents

	Mean	*SE*
Covariates in main model		
Age 18–25 years	0.203	0.003
Age 26–34 years	0.340	0.004
Age 35–49 years	0.390	0.004
Age 50–64 years	0.067	0.002
Female	0.679	0.004
White, non-Hispanic	0.413	0.006
Black, non-Hispanic	0.195	0.005
Other race, non-Hispanic	0.056	0.003
Hispanic	0.337	0.006
Noncitizen	0.247	0.005
Education, less than high school	0.371	0.005
Education, high school graduate	0.334	0.004
Education, some college	0.237	0.004
Education, college graduate	0.058	0.002
Married	0.552	0.005
Widowed, separated, or divorced	0.201	0.003
Never married	0.246	0.004
Works full time	0.454	0.004
Works part time	0.140	0.003
Not working	0.412	0.004
Number of children	2.183	0.010
Urban	0.768	0.006
County percent employed	0.462	0.001
County percent in poverty	0.147	0.001
County hospital beds per 1,000 persons	2.856	0.035
County Medicare AAPCC	674.9	2.052
Additional health status measures for sensitivity analysis		
Self-reported health status, fair/poor	0.137	0.003
Self-reported health status, good	0.321	0.004
Self-reported health status, excellent/very good	0.542	0.004
Has any functional limitation	0.256	0.004
Current every/some day smoker	0.320	0.004
Former smoker	0.114	0.003
Obese BMI > 30	0.334	0.004
Ever told had hypertension	0.161	0.003
Ever diagnosed with any heart problem	0.059	0.002
Ever told had stroke	0.010	0.001
Ever told had emphysema	0.006	0.001
Ever told had asthma	0.111	0.003
Ever told had ulcer	0.071	0.002
Ever told had cancer	0.031	0.001
Ever told had diabetes	0.043	0.002

Note. Low-income parents are those with HIU income less than 138% of the federal poverty level. AAPCC, average adjusted per capita cost; BMI, body mass index.
Source: National Health Interview Survey 1998–2010.

threshold. This also allows a straightforward approach to simulating the effects of changes in the eligibility threshold, such as the ACA's expansion of Medicaid eligibility up to 138 percent of the FPL. Finally, this approach captures the effects of eligibility changes on existing Medicaid-eligible adults as well as those newly eligible under an expansion.[9]

Our main model uses the Medicaid eligibility threshold for the year prior to the NHIS survey year for three reasons. First, there is measurement error in the threshold. We do not know precisely when during the calendar year an eligibility expansion was implemented, so if an expansion was implemented in November, we should not expect an impact in January through October of that year. By using the prior year threshold, we can be more confident that an individual is actually subject to his or her assigned eligibility threshold. Second, many of our outcomes refer to experiences over the past 12 months, so we might expect the relevant eligibility threshold to be the one from the prior year. Third, we do not expect the full effects of any eligibility expansion to occur immediately, and thus a lagged eligibility threshold may also be appropriate.

In addition to our main model described above, we estimate several sensitivity analyses. First, we estimate the models on selected outcomes using the current year eligibility threshold rather than the lagged eligibility threshold. We test this approach specifically for outcomes that are measured at the time of the survey as opposed to those that refer to the past 12 months. Next, we add a set of controls for individual health status, including self-reported health status and indicators for functional limitations, obesity, smoking status, hypertension, heart problems, emphysema, ulcer, cancer, asthma, stroke, and diabetes. Health needs are an important factor in individual decisions to obtain coverage and seek medical care, and the health needs of individuals in a state could be correlated with the generosity of the state Medicaid eligibility threshold. If they are correlated and we do not control for health status, our estimates of the effects of the eligibility threshold on our outcomes will be biased. However, our available measures of health needs are also likely to be endogenous because, for example, coverage and access to care can also affect health status. Thus, our main model excludes health status measures, but we present the results including these measures for comparison.

We also vary our analytic sample to test the sensitivity of our results. First, we estimate our models on a sample of U.S. citizens to limit our analysis to those most likely to be eligible for Medicaid. While some noncitizens are eligible for Medicaid, information on documentation status is not available, so estimating on citizens only is the most conservative approach. We also

estimate our models using two additional income cutoffs to define our sample. First, we extend our low-income sample to include those with HIU incomes up to 250 percent of the FPL to capture the effects of Medicaid expansions beyond the ACA threshold and because of potential error in our income measure. Second, we estimate our models on those with HIU incomes at or above 400 percent of the FPL who are very unlikely to be eligible for Medicaid. This serves as a falsification test to ensure that we are not capturing more general patterns in the states with eligibility changes that are not actually associated with Medicaid.

To consider the potential implications of the ACA for parents, we use our model to predict the outcomes assuming that all states set parental Medicaid eligibility at 138 percent of the FPL in all years.[10] We then examine these predictions separately for those states that have and have not chosen to expand Medicaid under the ACA. States planning to expand Medicaid would expect an average threshold increase of approximately 60 percentage points, while states not planning to expand Medicaid would expect an average increase of approximately 90 percentage points from their 2009 thresholds.[11] Using the NHIS survey weights ensures that the predictions reflect the size of the low-income parent populations in various states.

Limitations

This analysis has a number of limitations. Most important, there are several potential sources of measurement error in the Medicaid eligibility thresholds. First, there are some small year-to-year changes in the thresholds within states that may be due to reporting discrepancies over time. There are also some potential inconsistencies in the reporting of eligibility thresholds over time when states have multiple programs that provide insurance coverage for low-income adults or when enrollment in particular programs is capped or closed. Finally, depending on the timing of an eligibility change and the NHIS survey date, thresholds may not be applicable for the entire reference period for all outcomes.

There are also limitations in other measures. For example, information on the presence or absence of insurance coverage is generally reliable, but more measurement error is likely when assessing the type of coverage. The measures of OOP spending are particularly weak as they capture OOP spending for a family unit, rather than the individual, and the variable only identifies very broad levels of spending (e.g., above $500, above $2,000). Furthermore, all of our outcome measures are self-reported and may be subject to recall or

social desirability bias, and perceptions of unmet need are subjective and may not align with clinical judgment. In addition, the NHIS will not capture some vulnerable populations (e.g., homeless individuals) in its area-based sample though the direction of any resulting bias is not obvious. Lastly, while we attempt to control for several county-level variables that capture the economic and health care context for individuals, we cannot be sure that no other policy changes were occurring in conjunction with the Medicaid eligibility changes that could have also affected our outcomes of interest.

RESULTS

We find that increasing the Medicaid eligibility threshold increased the share of low-income parents with Medicaid and decreased the percent uninsured (Table 4). The magnitude of the effect suggests that if the income eligibility threshold increased by 100 percentage points (e.g., from 20 percent of the FPL to 120 percent of the FPL), the share of low-income parents with Medicaid would have increased by 10.5 percentage points. A more modest increase in the threshold of 50 percentage points would have resulted in an increase in the share with Medicaid of 5.3 percentage points and a decline in uninsurance of 3.6 percentage points.[12] The results also indicate a negative and statistically significant effect of Medicaid eligibility on private coverage. According to our estimates, approximately one-third of the increase in Medicaid coverage was due to a decline in ESI coverage.

We do not find any significant effects of increasing the Medicaid eligibility threshold on the share of parents with a usual source of care or a doctor visit in the past 2 weeks. However, increased Medicaid eligibility was associated with a higher probability of having a general doctor visit in the past 12 months. On all four measures of unmet needs due to cost, the results suggest reductions in unmet needs in response to a higher Medicaid eligibility threshold and all are significant at the 5 percent level. Our results show no effects of Medicaid eligibility on ED use, but reduced delays in care due to cost and noncost reasons occurred in response to expanded Medicaid eligibility. Expanding eligibility also reduced the probability that low-income parents spent more than $500 and more than $2,000 out of pocket on medical care for their families. Finally, we find that expanding Medicaid eligibility increased the probability of falling into the category of no or mild psychological distress and resulted in a corresponding decrease in the likelihood of experiencing moderate distress, both significant at the 5 percent level.

Table 4:   Effects of Changes in the Medicaid Eligibility Threshold on Coverage, Access, Mental Health, and Out-of-Pocket Spending for Low-Income Parents

	Coefficient	p-Value
Coverage		
Any coverage	0.072	.000***
Medicaid	0.105	.000***
Private (ESI or nongroup) coverage	−0.033	.017**
ESI	−0.035	.013**
Access and use		
Usual source of care (other than ED)	0.012	.444
Had office visit, past 2 weeks	0.007	.454
Seen general doctor, past 12 months	0.035	.030**
Unmet need for medical care due to cost, past 12 months	−0.031	.009***
Unmet need for prescription meds due to cost, past 12 months	−0.031	.015**
Unmet need for mental health care due to cost, past 12 months	−0.020	.003***
Unmet need for medical care, prescription meds, or mental health care due to cost, past 12 months	−0.039	.009***
More than one ED visit, past 12 months	−0.010	.496
More than three ED visits, past 12 months	−0.006	.387
Delayed care due to cost, past 12 months	−0.041	.001***
Delayed care due to noncost reasons, past 12 months	−0.041	.004***
Out-of-pocket (OOP) spending		
Family OOP spending $500 or more, past 12 months	−0.049	.003***
Family OOP spending $2,000 or more, past 12 months	−0.025	.026**
Mental health outcomes		
Kessler scale (0–7): No or mild psychological distress	0.023	.041**
Kessler scale (8–12): Moderate psychological distress	−0.021	.019**
Kessler scale (13+): Severe psychological distress	−0.002	.834

Notes. Sample includes nonelderly parents with health insurance unit (HIU) income less than 138% of the federal poverty level and eligibility threshold is lagged 1 year. Model includes controls for individual age, race/ethnicity, citizenship, sex, education, work status, HIU income relative to poverty, marital status, number of children, rural residence, state and year fixed effects. Contextual variables include county-level percent employed, percent in poverty, hospital beds per capita, and Medicare average adjusted per capita costs.
*(**)(***) indicates significance at the .10 (.05)(.01) level.
ED, emergency department; ESI, employer-sponsored insurance.
Source: National Health Interview Survey 1998–2010.

We also find that among low-income parents, all else equal, women are more likely to have Medicaid and more likely to report moderate psychological distress than men, while Hispanics are less likely to have Medicaid, to report several unmet needs due to cost, to have high OOP spending, and to have moderate psychological distress compared to non-Hispanic whites. Those who have not completed high school are more likely to have Medicaid and to report unmet needs due to cost and moderate

psychological distress than college graduates, but less likely to have high OOP spending. Full regression results for selected outcomes are available in Table S2, and others are available from the authors upon request.

Sensitivity Analyses

Using the current rather than lagged eligibility threshold, we find similar patterns on coverage, but the magnitudes are smaller (Table S3). This suggests that the effects of eligibility expansions may take some time to materialize. On the mental health measures however, the magnitudes are larger and the negative effect on some psychological distress becomes statistically significant. This suggests that some of the immediate mental health benefits associated with expanded eligibility may fade over time. When we add controls for health status, the results are very consistent with our main model. When we limit the sample to U.S. citizens, we generally find results that are larger in magnitude than those for the whole low-income population. This is consistent with the fact that noncitizens are less likely to be affected by Medicaid eligibility expansions. Similarly, when we expand the sample to include those with HIU incomes up to 250 percent of the FPL, we find results that are generally consistent, but often smaller in magnitude. There are two exceptions however in that we find stronger crowd-out effects among the higher income group and stronger reductions in those with very high OOP spending. Lastly, we find few significant results when we examine the effect of Medicaid eligibility on those with incomes at or above 400 percent of the FPL. This suggests that the results for the low-income population are not just capturing a general pattern of improved coverage and access occurring in Medicaid expansion states over time. The results of these analyses are summarized in Table S3.

Predictions

We use the estimates of the impacts of the Medicaid expansions occurring between 1997 and 2009 to predict the outcomes under a scenario similar to the ACA Medicaid expansion. If all states expanded eligibility to parents to 138 percent of the FPL, these results suggest that we would see gains in coverage and reductions in unmet needs due to cost, high OOP spending, and signs of psychological distress (Table 5). For example, the predictions indicate a decrease of 5.4 percentage points (or 11 percent) in the share of low-income parents who are uninsured if all states expanded to 138 percent. Perhaps most compelling, however, are the predicted results for the states that have chosen

to expand Medicaid under the ACA compared to those that are not expanding. While both sets of states show predicted improvements for parents under an expansion to 138 percent of the FPL, the states that are currently not expanding Medicaid show larger predicted improvements. For instance, the predicted decline in unmet need for prescription drugs is 2.7 percentage points in states that are not expanding under the ACA compared to 1.5 percentage points in ACA expansion states. Similarly, the reduction in moderate psychological distress is 2.0 percentage points in nonexpansion states compared to 1.1 percentage points in expansion states. These differences are due, in large part, to lower pre-ACA eligibility thresholds in the states that are not expanding Medicaid as well as lower overall socioeconomic status of those state populations. We also explored whether the effects of eligibility changes were linear by adding a quadratic term to our models and find that the effects are stronger for states starting at lower eligibility thresholds (data not shown). This results in even larger differences between participating and nonparticipating states in the predicted effects of the ACA expansion (Table S4).

DISCUSSION

Our results indicate that increases in Medicaid eligibility thresholds between 1997 and 2009 resulted in more Medicaid coverage and less uninsurance for low-income parents in states that expanded eligibility. We also find strong evidence that expanding Medicaid eligibility for parents improved several measures of access to care. We find reductions in unmet needs for medical care, prescription drugs, and mental health care due to cost as well as fewer delays in care due to cost and noncost reasons. Expanded Medicaid eligibility also resulted in reduced OOP spending and improved mental health outcomes for low-income parents.

When we predict effects assuming that all states expand eligibility to the ACA threshold of 138 percent of the FPL, we find that all states would expect to see improvements in coverage, access, and mental health outcomes. We also show that such improvements would be considerably larger among the states that have currently chosen not to expand Medicaid under the ACA. Early evidence on the effects of the ACA suggests that the uninsurance rate for parents fell by almost 15 percent between September 2013 and June 2014, with larger percent changes for those with low incomes and those in states that expanded Medicaid (Kenney et al. 2014). These results are generally consistent with our coverage predictions based on past expansions. This

Table 5: Predictions for Low-Income Parents Assuming All States Expand Medicaid Eligibility to 138% of the Federal Poverty Level

	All States			Not Expanding under ACA			Expanding under ACA		
	Actual Mean	Predicted Mean	Effect of Expanding to 138%	Actual Mean	Predicted Mean	Effect of Expanding to 138%	Actual Mean	Predicted Mean	Effect of Expanding to 138%
Any coverage	0.525	0.578	0.054	0.461	0.528	0.066	0.587	0.628	0.041
Medicaid	0.252	0.330	0.078	0.183	0.280	0.097	0.320	0.379	0.059
Private (ESI or nongroup) coverage	0.273	0.249	−0.024	0.279	0.248	−0.031	0.267	0.249	−0.017
ESI	0.242	0.217	−0.025	0.248	0.215	−0.032	0.237	0.219	−0.018
Usual source of care (other than ED)	0.694	0.705	0.011	0.669	0.681	0.012	0.719	0.728	0.009
Had office visit, past 2 weeks	0.112	0.118	0.005	0.107	0.114	0.007	0.117	0.121	0.004
Seen general doctor, past 12 months	0.519	0.549	0.030	0.503	0.538	0.035	0.535	0.561	0.026
Unmet need for medical care due to cost, past 12 months	0.162	0.140	−0.022	0.185	0.158	−0.027	0.139	0.122	−0.017
Unmet need for prescription meds due to cost, past 12 months	0.192	0.171	−0.021	0.222	0.196	−0.027	0.162	0.147	−0.015
Unmet need for mental health care due to cost, past 12 months	0.053	0.038	−0.014	0.061	0.043	−0.018	0.045	0.034	−0.011

Table 5. *Continued*

	All States			Not Expanding under ACA			Expanding under ACA		
	Actual Mean	*Predicted Mean*	*Effect of Expanding to 138%*	*Actual Mean*	*Predicted Mean*	*Effect of Expanding to 138%*	*Actual Mean*	*Predicted Mean*	*Effect of Expanding to 138%*
Unmet need for med care, prescription meds, mental health care due to cost, past 12 months	0.269	0.242	−0.027	0.306	0.272	−0.034	0.233	0.213	−0.020
More than one ED visit, past 12 months	0.273	0.266	−0.006	0.281	0.273	−0.009	0.264	0.260	−0.004
More than three ED visits, past 12 months	0.040	0.037	−0.003	0.046	0.042	−0.005	0.034	0.032	−0.002
Delayed care due to cost, past 12 months	0.179	0.150	−0.029	0.199	0.163	−0.036	0.159	0.138	−0.021
Delayed care due to noncost reasons, past 12 months	0.256	0.227	−0.029	0.272	0.235	−0.037	0.240	0.219	−0.021
Family OOP spending $500 or more, past 12 months	0.359	0.322	−0.037	0.382	0.338	−0.044	0.336	0.307	−0.029
Family OOP spending $2,000 or more, past 12 months	0.117	0.098	−0.018	0.127	0.105	−0.022	0.107	0.092	−0.015
Kessler scale (0–7): No or mild psychological distress	0.836	0.852	0.016	0.838	0.858	0.020	0.834	0.847	0.012

Table 5. Continued

	All States			Not Expanding under ACA			Expanding under ACA		
	Actual Mean	Predicted Mean	Effect of Expanding to 138%	Actual Mean	Predicted Mean	Effect of Expanding to 138%	Actual Mean	Predicted Mean	Effect of Expanding to 138%
Kessler scale (8–12): Moderate psychological distress	0.105	0.089	−0.016	0.105	0.085	−0.020	0.105	0.094	−0.011
Kessler scale (13+): Severe psychological distress	0.059	0.058	−0.001	0.057	0.056	−0.001	0.061	0.060	−0.001

Notes. Sample includes parents with health insurance unit (HIU) income less than 138% of the federal poverty level (FPL) in states with thresholds less than 138% FPL in any year (1998–2010). States expanding Medicaid under the ACA as of September 2014 include AZ, AR, CA, CO, CT, DE, DC, HI, IL, IA, KY, MD, MA, MI, MN, NV, NH, NJ, NM, NY, ND, OH, OR, PA, RI, VT, WA, and WV. Predictions are based on models estimated on parents with HIU incomes less than 138% FPL as reported in Table 4. We use the margins command in Stata, which uses our models to predict outcomes for each individual using their own characteristics and a fixed Medicaid eligibility threshold of 138% FPL in all years. ED, emergency department; ESI, employer-sponsored insurance; OOP, out of pocket.

further suggests that, as the ACA expansion evolves and more data become available, we will observe similar improvements in access to care, OOP spending, and mental health outcomes for parents under the ACA as those that resulted from past expansions.

However, the past eligibility changes differ from the ACA expansion on a number of dimensions. First, the ACA expansion has been highly publicized and is being implemented as part of a broader effort to insure more Americans and improve population health. This is particularly true when considering potential impacts of the ACA's Medicaid expansion on coverage. Outreach and enrollment efforts, the individual mandate combined with new subsidies for coverage, and expanded Medicaid coverage for both childless adults and parents are expected to increase take up of Medicaid coverage over historic levels. Thus, the effects of past expansions likely underestimate the effects of the ACA. On the other hand, the size of the ACA Medicaid expansions and the associated expansion of subsidized private coverage may place substantial pressure on provider capacity in ways that have not occurred in the past. This could limit access improvements and have implications for health outcomes.

Despite the challenges of predicting the effects of the ACA, our results clearly suggest several potential improvements in outcomes for parents in response to expanded eligibility. This focus on parents is important because an estimated 11.5 million parents were uninsured in 2010 (Heberlein et al. 2012) and more than half of all states still had eligibility thresholds below the poverty level. As a consequence, poor and near-poor parents may experience significant benefits in states that expand Medicaid under the ACA. But beyond the effects for parents themselves, the evidence suggests that when parents gain coverage, children are more likely to be covered as well (Dubay and Kenney 2003). In addition, our results suggest improvements in mental health outcomes for parents in response to expanded eligibility, which has the potential to benefit children who can suffer both physical and mental health problems when their parents are depressed (Shonkoff and Phillips 2000). Thus, while much of the attention surrounding the ACA Medicaid expansion has been centered on childless adults, it will be important to monitor the impacts on parents as well as any spillover effects on children.

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NOTES

1. HIUs include an adult, his/her spouse, and any dependent children in the household to better reflect the family definition used by most public and private insurers. Dependent children are those 18 and under and full-time students aged 19–22.
2. These thresholds were selected from options available on the NHIS: zero, less than $500, $500–$1,999, $2,000–$2,999, $3,000–$4,999, $5,000 or more.
3. We include two additional measures in the appendix indicating whether an individual reported any of the six feelings at least some of the time ("some psychological distress") and, if so, whether it interfered with his or her life "some" or "a lot" of the time.
4. We limit our analysis to adults who answered the NHIS Sample Adult Core questionnaire, which collects most access, service use, and mental health measures from one adult in each family in the NHIS. This results in a sample size of approximately 29,000 parents with HIU incomes below 138 percent of the FPL from 1998 to 2010.
5. For example, we attempt to capture eligibility for full Medicaid benefits or equivalent programs, but benefit generosity is not always well measured. We also do not account for periods where enrollment may have been capped or closed.
6. We also estimated logistic regression models with the necessary correction for multiple imputation of income on the NHIS. This approach required dropping observations from several small states, but the results were consistent and are available upon request.
7. Medicaid eligibility thresholds and county-level variables are attached to each NHIS observation using state and county identifiers available at the National Center for Health Statistics Research Data Center.
8. The survey design adjustment also incorporates an adjustment for heteroskedasticity.
9. Our study examines the overall effects of expanding eligibility on the outcomes of interest. We are not estimating the impact of having Medicaid on access and use, which would require an alternative approach.
10. We use the margins command in Stata, which uses the model to predict outcomes for each individual using his or her own characteristics and a fixed Medicaid eligibility threshold of 138 percent of the FPL in all years. It then summarizes the predictions for those in expanding versus nonexpanding states. We only report

predictions for individuals in states with an eligibility threshold below 138 percent FPL to focus on the effects of expanding coverage.

11. This excludes the 11 states that had already expanded Medicaid beyond the ACA threshold for parents, 9 of which are implementing the ACA expansion. Also, the predictions assume that eligibility is expanded to 138 percent of the FPL throughout the study period (1997–2009), so the average increase across all years would be higher in both sets of states.

12. The average change in the Medicaid eligibility threshold was about 30 percentage points from 1997 to 2009, but 12 states had an increase of at least 50 percentage points.

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