NBER WORKING PAPER SERIES

ADMINISTRATIVE BURDENS AND CHILD MEDICAID ENROLLMENTS

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Working Paper 30580
http://www.nber.org/papers/w30580

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
October 2022

We would like to thank Tricia Brooks of the Georgetown University Center for Children and Families for helpful conversations about Medicaid policies. Anna Chorniy is grateful for support under NIH 1K01HL163457-01. The views expressed in this paper are those of the author(s) and do not necessarily reflect the views of the Federal Reserve System, the Board of Governors, the regional Federal Reserve Banks, or the National Bureau of Economic Research.

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NBER Working Paper No. 30580
October 2022
JEL No. I13

ABSTRACT

Following decades of increasing child access to public health insurance, enrollments fell in many states between 2016 and 2019 and the number of uninsured children increased. This study provides the first national, quantitative assessment of the role of several common types of administrative burdens in driving the pre-pandemic drop in child health insurance coverage. In addition, we undertake to identify the groups of children who were most affected by administrative burden. We show that regulations that increased administrative burdens placed on families reduced public health insurance coverage by a mean of 5.4 percent within the year following the implementation of these changes. Declines were largest for children without college educated parents, Hispanic families, and families with non-citizen parents. Declines in insurance coverage have been temporarily arrested by federal measures taken in response to the COVID-19 public health emergency. But unless policies increasing administrative burden are reconsidered, the decline in children's public health insurance enrollments is likely to resume when the emergency declaration is lifted.

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Administrative burdens, defined as the "learning, psychological, and compliance costs that citizens experience in their interactions with government" (Herd and Moynihan, 2018), can have a significant effect on the take-up of social benefits (Nichols and Zeckhauser, 1982; Currie, 2006). Administrative burdens are sometimes conceived of as a way to target benefits more effectively (Nichols and Zeckhauser, 1982) and/or reduce moral hazard (Brot-Goldberg, 2022). However, there is growing evidence that administrative burdens can screen out the neediest potential recipients, exacerbating social inequalities (Bertrand, Mullainathan and Shafir, 2004; Cherlin et al, 2002; Christensen et al., 2020; Currie, 2006; Currie and Gavhari, 2008; Currie and Grogger, 2001; Deshpande and Li, 2019; Finkelstein and Notowidigdo, 2019).

In 2016, the number of uninsured children in the U.S. started rising, erasing some of the gains due to expansions in eligibility for public health insurance under the Medicaid and the Child Health Insurance Program (CHIP) programs over the past 20 years. The number of children without health insurance rose from 4.7 percent in 2016 to 5.7 percent in 2019, while among Hispanic children, this number rose to 9.2 percent (Berchick et al., 2019). These losses were entirely accounted for by declines in public insurance since private health insurance coverage remained constant. The downswings in enrollment occurred in the absence of significant changes in eligibility for public health insurance or increases in CHIP premiums because states were forbidden from lowering income eligibility cutoffs or raising CHIP premiums by the "maintenance of effort" provisions included in the Affordable Care Act (Georgetown University Health Policy Institute, 2017) and coronavirus relief legislation (Dolan et al., 2020).

This study provides the first national, quantitative assessment of the role of several common types of administrative burdens in driving the pre-pandemic drop in child health

insurance coverage. In addition, we undertake to identify the groups of children who were most affected by administrative burden. Health insurance coverage in childhood has been shown to have significant benefits for children's short- and long-term health, educational attainment, labor supply, and earnings (Brown et al., 2020; Cohodes et al., 2016; Currie and Gruber, 1996; Miller and Wherry, 2019). Indeed, Hendren and Sprung-Kayser (2020) estimate that over the past 50 years, each $1.00 spent initially expanding public health insurance for children paid the government back $1.78 in future benefits. Hence, the downturns in child Medicaid enrollments that occurred in many states between 2016 and 2019 are disturbing and bear further investigation (Currie and Chorniy, 2021). Moreover, though pandemic era freezes on redeterminations of eligibility and the pandemic-induced recession have caused child Medicaid enrollments to climb during the COVID-19 public health emergency, enrollments are likely to revert to pre-pandemic trends once the emergency is over. Hence, the negative pre-pandemic trends in many states suggest that decades of progress increasing children's health insurance coverage are in danger of being at least partially reversed.

Previous case studies suggest that administrative barriers can prevent children from enrolling in Medicaid (Heinrich et al., 2022; Moynihan, Herd and Rigby, 2016, Wu and Meyer, 2022), so it is possible that these barriers played a role in the national reduction in public health insurance coverage for children from 2016 to 2019. To investigate this relationship, we assembled a new dataset of state policies that have affected such burdens. Some of these changes were in response to measures the federal government took to enhance Medicaid and CHIP program "integrity," including expanded audits of state beneficiary eligibility determinations, and requirements to submit "enhanced" data to the federal government.[1] We seek

[1] See for example: https://www.cms.gov/newsroom/press-releases/cms-announces-initiatives-strengthen-medicaid-program-integrity.

to provide a sense of the extent to which these burdens contributed to the declines in child Medicaid and CHIP enrollments and to identify the most affected populations.

We first investigate the impact of changes in administrative rules affecting the degree of burden facing families who seek to enroll or re-enroll in public health insurance. Our estimates show that conditional on other policy changes that affected Medicaid and CHIP enrollments, increases in administrative burden, which became especially prevalent in 2017 and 2018, were responsible for an initial overall enrollment decline of 1.8 percentage points (4.2 percent) when first adopted. The magnitude of these impacts tended to grow over time reaching a peak decline of 2.3 percentage points (5.4 percent) by six months after the policy change. An event study analysis suggests that these negative effects persisted for at least two years after the policy changes. Investigating the same issues using methods from Callaway and Sant'Anna (2021) yields even larger aggregate impacts of a 3.2 percentage point overall decline in enrollments, which persists and rises to 3.6 percentage points after 20 months.

The second part of the analysis turns to the American Community Survey (ACS) data to ask who is most affected by these burdens? We show that changes in overall Medicaid/CHIP enrollments are three times greater for children without a college educated parent. They are three times larger for Hispanic compared to non-Hispanic children, and four times greater for children with a non-citizen parent, suggesting that immigration concerns magnified the impacts of administrative burdens.

The rest of the paper proceeds as follows: Section 1 provides a discussion of the data on monthly and annual Medicaid and CHIP child enrollments, as well as the new measures of administrative burden and other relevant policies that we have collected. Section 2 gives an

overview of our methods, section 3 shows the results, and section 4 presents a discussion and conclusions.

1. Data and Characterization of Administrative Burden

The analysis is based on three main sources of data: state Medicaid/CHIP child enrollment counts, the annual American Community Survey, and a new database of changes in state regulatory policies that we characterize as either increasing or decreasing administrative burden.

Medicaid and CHIP Enrollment Data

The majority of the Medicaid enrollment data comes from the federally run Medicaid.gov database which includes Medicaid and CHIP enrollments collected from states.[2] We use monthly state-level Medicaid/CHIP data from 2014 to 2020. Due to changes in the way the data was collected and reported, comparable data on Medicaid enrollments is not available prior to 2014. The main variable used, Medicaid and CHIP child enrollment, represents the total number of children enrolled in Medicaid and separate CHIP programs as of the last day of each month.[3] Data for North Carolina, Tennessee and Arizona come from state-provided databases.[4] The

[2] These data are sometimes noisy. We drop and then linearly interpolate several observations that appeared to be reporting outliers from North Dakota (6/2016 and 7/2016), Illinois (3/2015), Nevada (6/2019, 11/2019 and 7/2020), Iowa (5/2014) and Michigan (5/2015). We treat as missing time periods 10/2016 to 5/2017 in Ohio and 6/2017 to 12/2017 in New Mexico. We flagged months are outliers if changes in enrollment were sharp and returned to the previous point immediately after the departure from the trend. Some states' data is unavailable in the beginning of the dataset. Data starts in 9/2014 in Arkansas, 2/2017 in California, 5/2014 in Connecticut, 2/2014 in Georgia, 4/2014 in Illinois, 4/2014 in Iowa, 4/2014 in Kansas, 6/2014 in Nevada, 6/2016 in New Mexico, 7/2014 in North Dakota, 5/2014 in Rhode Island and 9/2014 in Wisconsin. We also dropped the District of Columbia which showed a lot of volatility in monthly enrollments.

[3] See https://www.medicaid.gov/medicaid/national-medicaid-chip-program-information/medicaid-chip-enrollment-data/methodology-about-medicaid-chip-enrollment-report/index.html for further information about these data.

[4] Data for North Carolina is from the "Medicaid and Health Choice Enrollment Reports," available at: https://medicaid.ncdhhs.gov/medicaid-and-health-choice-enrollment-reports. The North Carolina Medicaid.gov data

Medicaid enrollment numbers are converted to rates by dividing by the total population of children ages 0 to 18 in that state and year from the American Community Survey, created using the standard ACS provided weights.

We also use an unduplicated count of the number of children enrolled in Medicaid and CHIP during the federal fiscal year to measure enrollment churn. We create the churn measure by subtracting the number of children enrolled in Medicaid and CHIP at the end of the federal fiscal year (September) from the annual unduplicated count and then dividing by the annual unduplicated count. A child who was enrolled in more than one program is only counted once. This annual data is sourced from the federally run Statistical Enrollment Data System.[5]

Data on Administrative Burden and Other Policy Changes

For each state, Table 1 lists changes in state regulations that were likely to increase (or in some cases to decrease) administrative burdens on families, along with the dates that these changes became effective. To compile data about these policy changes, we started with the changes described by Artiga and Pham (2019). We then created a list of search terms, including "Medicaid", "CHIP", "enrollment drop", "child", and "eligibility." For each state and year from 2014 – 2020, we used the state and year as google search terms in addition to those from the list above. Information gathered from these searches was used as a starting point for further searches including through local news sources, legislation, government documents, government meeting

had a large discontinuous drop in 2017 that was not present in the state-provided data. Data for Arizona was missing from Medicaid.gov so we use data from the Arizona Health Care Cost Containment System Document Archive Population Demographics documents available here: https://archive.azahcccs.gov. It is available for children ages 0 to 17 (i.e. not 18) on a quarterly basis, which we treat as monthly in our analysis. Data for Tennessee was only present on Medicaid.gov from 2019. We use data from the Division of TennCare, available here: https://www.tn.gov/tenncare/information-statistics/enrollment-data.html.

[5] See https://www.medicaid.gov/chip/reports-evaluations/index.html#:~:text=Each%20year%2C%20CMS%20collects%20data for further information.

minutes and class action lawsuits. More information about specific policy changes appears in Appendix Table 1.

Over the sample period, fifteen states changed the process of determining eligibility for enrollment or re-enrollment in the Medicaid or CHIP programs in ways that made it harder for eligible children to get enrolled and stay enrolled. For example, in October 2014 Texas Medicaid increased the frequency of income eligibility verification. Texas now checks income for households with children on Medicaid in the 5th, 6th, 7th, and 8th months of their enrollment period each year. If the family's income appears to increase over the eligibility limit, they have 10 days to prove that this is an error, or they lose coverage. If multiple children in the family are enrolled in Medicaid at different times, the eligibility checks could be on different timelines creating even more burden (Luthra 2017; Texas Health and Human Services, 2015).

As a second example, in April 2017, Mississippi enacted the Medicaid and Human Services Transparency and Fraud Prevention Act which requires a private contractor (such as Equifax, which lobbied for the law) to check the eligibility of Medicaid enrollees (Fifield, 2017; Medicaid and Human Services Transparency and Fraud Prevention Act). Another important change was to switch from requiring reporting of income changes that cause income to exceed 130% of poverty (Mississippi Department of Human Services, 2017) to requiring recipients to report all changes in income of more than $100 (adjusted for inflation after fiscal year 2018), as well as any changes in the source of income, address, household composition, liquid resources, and child support -- all within 10 days of the change (7 CFR, 1978).

A third example is that in 2017, Missouri passed legislation to implement an automated eligibility checking process for Medicaid enrollees (Mo Rev Stat, 2018). Enrollees who could not be verified through cross-checking federal or state data were sent a letter via U.S. mail and

had 10 days to respond or lose coverage. Nearly eighty percent of those who lost coverage were children (Fentem, 2019). According to a survey of 37 health care providers collectively serving nearly every region of the state, 87% of patients who lost Medicaid coverage still met income eligibility requirements but lost coverage due to challenges with the renewal process. Eighty-four percent of these patients were unaware that they had lost coverage until attending or scheduling an appointment (Kids Win Missouri, Missouri Budget Project and Missouri Coalition of Children's Agencies, 2019).

These examples of what we call increased administrative burden have some common elements including increases in the frequency and scope of reporting requirements, increased frequency of income checks, short response windows, and reliance on the mailing of paper notices and forms to often unverified addresses. In many states where we found increases in administrative burden, we also found evidence that enrollees were terminated for reasons other than ineligibility. For example, in Arkansas in June 2018, only 11% of terminations were due to household's increased income while 60% were due to enrollees not returning paperwork or the state being unable to locate the enrollee (often due to incorrect addresses in the system) (Hardy, 2018). In Colorado, Louisiana, Tennessee, Missouri, Ohio and Texas, we document large numbers of enrollees losing Medicaid or CHIP coverage due to not responding to verification requests in time. Hence, it is not the case that these administrative requirements acted mainly by weeding out enrollees who were in fact ineligible. Further details about individual state policies appear in Appendix Table 1.

Two states implemented unique policies that limited enrollments. Data about child Medicaid and CHIP income eligibility cutoffs as a percent of the federal poverty level is taken from KFF (2022a). In the analysis, we use the highest income limit for separate CHIP programs

for uninsured children and the age groups 0 to 1, 1 to 5, and 6 to 18. As shown in Table 1, while most states had either no change, or small fluctuations in income limits, Kansas reduced the real income eligibility cutoff by a total of 7.2 percent over the period by fixing the cutoff at the 2008 poverty level (adjusted in 2014) rather than using the poverty level for each subsequent year (KFF, 2022a). Hence, Kansas was able to reduce real income cutoffs even though this was seemingly forbidden by federal regulation.

More drastically, Arkansas implemented a work requirement in June 2018 which led to a sharp reduction in the Medicaid rolls. Although the policy affected only adult Medicaid enrollees, we show below that it had spillovers onto child enrollments. Reports suggest that many of the thousands removed from the rolls were in fact employed and eligible, but unable to meet the work reporting requirements. These reporting requirements involved accessing computers and contacting the welfare office during regular work hours (Scott, 2020). In what follows we control for income cutoffs and work requirements in our main specification, and test the robustness of our results to excluding Kansas and Arkansas.

In addition to administrative changes that tended to reduce child Medicaid enrollments, there were two important policy changes associated with the 2010 Affordable Care Act that increased them. The first was Medicaid expansion. Many states took advantage of the option to expand their Medicaid programs when it became available on January 1, 2014, but other states adopted the expansion later or chose not to adopt so that the timing of adoption varied widely, as shown in Table 1.[6] Prior to 2021, 36 states had expanded their Medicaid programs. These expansions covered previously ineligible low-income adults and so did not apply directly to children. Nevertheless, although most low-income children were already eligible for Medicaid

[6] Data on the timing of adoption comes from KFF (2022b).

prior to the ACA expansions, states that expanded access to adults also saw increases in child enrollments (Hudson and Moriya, 2017). We control for whether the state had adopted the ACA Medicaid expansions as of the month of enrollment in all our models.

Pauses in redeterminations represent a second set of policy changes that tended to increase Medicaid enrollments. Pauses in redeterminations automatically increase caseloads by preventing children from being removed from the rolls either for paperwork reasons or because they are no longer truly eligible. Table 1 shows that when states transitioned to the ACA in 2014, 36 states obtained waivers from the federal government which allowed them to pause redeterminations for Medicaid and/or CHIP so that they could transition to new ACA-compliant processes for handling renewals. Data about these redetermination pauses comes from KFF (2022a).

The federal Coronavirus Aid, Relief, and Economic Security Act or CARES Act, signed into law on March 27th, 2020, suspended Medicaid redeterminations nationwide for the duration of the health emergency caused by COVID-19. This suspension led to sharp upswings in Medicaid enrollments since people stopped leaving the rolls. In what follows we capture the effect of these both of these pauses with an indicator equal to one if a redetermination pause was in effect and zero otherwise.

A third factor that may have affected access to Medicaid and CHIP were changes in the premiums associated with the programs.[7] In cases where there was no change in the premium over time, cross-state differences in the level of premiums are absorbed by state fixed effects that are included in all our models. However, as shown in Table 1, four states reduced premiums over this time period, and one (New Jersey) increased them very slightly. Although some states

[7] Data on premiums comes from KFF (2022a). We use premium data from 2015 for 2014 as premium data is unavailable in 2014.

have a schedule with different premiums for different income levels, we have chosen to represent the size of the premium by the premium and enrollment fees for children at 201% of the federal poverty line (or 200% if 200% is the upper limit).[8] Because changes in premiums were so small, they seem unlikely to be a major factor in explaining changes in enrollments over time.

Both premiums and income cutoffs are assumed to apply to fiscal years rather than calendar years using the fiscal year of each state. Premiums are coded in dollars at a monthly level – for example, if the premium is administered on an annual basis, its value is divided by 12.

Data on Medicaid Enrollments from the American Community Survey

The monthly Medicaid enrollment data from Medicaid.gov is not broken down by children's characteristics. Hence, in order to address the question of who is most affected by administrative barriers, we turn to data from the ACS. The ACS asks about each child's Medicaid/CHIP coverage and about the characteristics of their households. Aggregating the monthly Medicaid.gov data to the state-year level produces annual time series with similar movements in state-level Medicaid enrollments to the ACS data. The correlation coefficient for the two datasets from 2014 to 2019 is 0.82.

Aside from the fact that it is annual, a significant limitation of the ACS is that data collection for 2020 was disrupted by the COVID-19 pandemic and other factors, leading the Census Bureau to warn that the 2020 data may not be comparable to data for previous years. Pandemic disruptions were especially impactful for low-income respondents since they are typically surveyed using in-person methods. These respondents are also more likely to use

[8] Premium data is also available at 151%, 251%, 301% and 351% of the federal poverty limit from KFF (2022a). We use 201% because at 151% of the federal poverty line children don't pay premiums in most states and at 251% and above children aren't eligible for either Medicaid or CHIP in many states.

Medicaid or CHIP. The result is that the Medicaid coverage rates in the 2020 ACS are inconsistent with data cross-checks to the Medicaid.gov enrollment data (U.S. Census Bureau, 2021). We therefore focus on the period 2014 – 2019 for the ACS data, and report results including 2020 data in the appendix.

The ACS data is used to examine the impact of swings in Medicaid enrollments by race, ethnicity, gender, age, poverty level, and whether the parents are non-citizens, non-college graduates, or have limited English proficiency. Respondents are able to choose as many options for "race" as they desire. Respondents who checked only "white" are coded as white and those who checked only "Black" as Black. All others are coded as "other" including those who check both white and Black. Hispanic ethnicity is coded as a separate variable in the ACS, and we treat anyone who did not self-identify as Hispanic as non-Hispanic. Respondents are asked about whether they are not able to speak English or whether they do speak English but "not well." Information about the parents (i.e. English proficiency, citizenship, and education) is missing if the child does not live with at least one parent. Seven percent of the sample children do not live with a parent and so are excluded when we look at differences in enrollment by parental characteristics.[9]

Table 2 shows that there was significant variation in changes in child Medicaid plus CHIP enrollments between groups over the sample period.[10] The overall decline in Medicaid plus CHIP from 2016 to 2019 was one percentage point. Losses were negligible among children with a college educated parent, or parents who self-reported that they spoke English well. Children of parents with self-reported weak English experienced a 3.7 percentage point decline. There were only small losses among white children, and larger losses among Black children and

[9] These children are disproportionately older: 35% are 18 compared to 6.4% in the sample of 0-18 year old children.
[10] Appendix Table 6 presents the same information using medians rather than means.

children of other race. Enrollments among Hispanic children fell from 57.0 percent to 53.0 percent, a decline of 4.0 percentage points. Turning to breakdowns by household income, there were declines in enrollment among children in households with incomes less than 100 percent of the federal poverty line but increases in enrollment in other income groups. These differences suggest that changes in Medicaid regulations may have had different impacts on children from different types of families.

2. Methods

In order to focus attention on the potential role of administrative burdens, we first present standard event study graphs showing the progress of Medicaid enrollments after these requirements are increased. The event study specification is written as follows:[11]

$$(1)\ EnrollRate_{st}$$
$$= \beta_0 + \sum_{j=2}^{J} \gamma_j (Lag\ j)_{st} + \sum_{k=1}^{K} \delta_k (Lead\ k)_{st} + \beta_1 WorkReqs_{st}$$
$$+ \beta_2 Premiums_{st} + \beta_3 RedeterminationPause_{st}$$
$$+ \beta_4 MedicaidExpansion_{st} + \beta_5 IncomeElig_{st} + \boldsymbol{X}_{st}\theta + \tau_t + \tau_s + \varepsilon_{st}$$

where for state *s* in month *t*, $EnrollRate_{st}$ indicates the monthly child Medicaid and CHIP enrollment level divided by the estimated total population of children ages 0 - 18 in that state and year from the ACS. $AdminBurdenEvent_s$ is a variable recording the time period *t* in which an

[11] Lags and leads are defined as:
$(Lag\ j)_{st} = 1[t = AdminBurdenEvent_s - j]$ for $j \in \{1, \dots, J-1\}$,
$(Lag\ J)_{st} = 1[t \leq AdminBurdenEvent_s - J]$,
$(Lead\ k)_{st} = 1[t = AdminBurdenEvent_s + k]$ for $k \in \{1, \dots, K-1\}$,
$(Lead\ K)_{st} = 1[t \geq AdminBurdenEvent_s + K]$.

increase in administrative burden is adopted in state *s*. The variables $WorkReqs_{st}$, $RedeterminationPause_{st}$, and $MedicaidExpansion_{st}$ take a value of 1 after a state implements the given policy change. $Premiums_{st}$ represents premium levels for one child and $IncomeElig_{st}$ represents maximum income eligibility cutoffs at a given state and time. $\boldsymbol{X}_{st}$ is a vector of state-level, time-varying controls for maximum income eligibility cutoffs for Medicaid and CHIP, the unemployment rate, child poverty rate, and gross state product.[12] The unemployment rate varies on a monthly basis while the child poverty rate and gross state product vary on an annual basis. We use state (τ_s) and time (τ_t) fixed effects to control for all fixed state and time-level determinants of child Medicaid and CHIP enrollment rates and cluster standard errors by state. There is a unique indicator for each year and month combination in the data.

We estimate event studies using three different balanced panels with data from 2014 to 2020. In the first, we keep all 15 states that experienced administrative burden increases and focus on 9 leads and 16 lags. In the second, we keep only states that had sufficient data to include 13 leads and 19 lags, which means that we drop Arkansas, Texas, Montana, and Oklahoma. And in the third sample, we keep only states with 34 leads and 21 lags which leaves us with nine states: Colorado, Florida, Hawaii, Idaho, Illinois, Louisiana, Mississippi, Missouri, and Tennessee.[13]

We then turn to a regression analysis of the relationship between all the policy changes and monthly Medicaid plus CHIP enrollment rates estimated using the following equation:

[12] The unemployment rate control is seasonally adjusted monthly unemployment rates from the Bureau of Labor Statistics. The gross state product per capita control is the annual all industry real gross domestic product in billions of chained 2012 dollars from the Bureau of Economic Analysis divided by the total population in each state calculated using the ACS. The poverty rate is calculated as the weighted proportion of children under 19 in the ACS that live in a family with income below the federal poverty line.

[13] Although in our dataset the administrative burden change has an end date in Tennessee, we treat the policy change as irreversible in this specification.

$$(2)\ EnrollRate_{st}$$
$$= \beta_0 + \beta_1 AdminBurden_{st} + \beta_2 WorkReqs_{st} + \beta_3 Premiums_{st}$$
$$+ \beta_4 RedeterminationPause_{st} + \beta_5 MedicaidExpansion_{st}$$
$$+ \beta_6 IncomeElig_{st} + \boldsymbol{X}_{st}\theta + \tau_t + \tau_s + \varepsilon_{st}$$

This specification replaces the lag and lead variables from equation (1) with the variable $AdminBurden_{st}$ which takes a value of 1 after an administrative burden increase was implemented in a state. We again cluster standard errors by state. We use a similar specification to estimate the impact of policy changes on enrollment churn. Each variable is aggregated to the annual level and enrollment churn is treated as the dependent variable but otherwise the model is the same as (2) with a different dependent variable.

Recently the econometrics literature has described challenges in drawing inferences from difference-in-difference or event study estimates in the presence of variations in the timing of treatments and/or heterogeneity in treatment effects (Callaway and Sant'Anna, 2021; Sun and Abraham, 2021; Goodman-Bacon, 2021). In order to address these challenges and investigate the robustness of our estimates, we repeat the analysis of the impact of administrative burden on Medicaid enrollment rates using the procedures from Callaway and Sant'Anna (2020). The first step is to generate average treatment effect estimates for each group of states where an increase in administrative burden took effect at the same time. We are unable to include covariates in this specification due to the small size of each of these groups. We again cluster standard errors by state. Since these procedures do not work well with missing data, we start the sample in

September 2014 and drop data for two "control" states (New Mexico and California) and one treatment state (Ohio).

These group-year estimates can be presented in three different ways: as a simple weighted average, as group-specific time averaged effects, and as dynamic effects. The first two can be compared to the standard difference-in-difference estimates, while the third can be used to generate figures analogous to the event studies. The simple aggregation is the average of all the group-time average treatment effect estimates, weighted by group size. The group-specific effect is the effect for all states where administrative burdens were implemented in the same month, averaged over all time periods after treatment. The dynamic effects give the effect relative to the policy implementation time. We use three different panels to examine dynamic effects, balancing each panel across different lengths of exposure to the treatment. The first uses 16 lags and 47 states. The second uses 21 lags and drops Montana and Oklahoma. The third uses 33 lags and drops Montana, Oklahoma, Idaho and Louisiana.

One limitation of the Medicaid enrollment files is that they do not include any information about the children who are enrolled. In order to examine the impact of changes in Medicaid enrollment on specific groups of children, we turn to the annual ACS data. In the annual data, we have fewer observations and cannot use month-to-month variation to identify the effects of specific policy changes. Therefore, we use the ACS data to examine the relationship between overall Medicaid and CHIP enrollment rates and enrollment rates for each demographic group. These models take the following form:

$$(3)\ DemographicGroupEnrollRate_{st} = \beta_0 + \beta_1 EnrollRate_{st} + \boldsymbol{X}_{st}\theta + \tau_t + \tau_s + \varepsilon_{st}$$

where *s* refers to state and *t* refers to year. $DemographicGroupEnrollRate_{st}$ measures ACS child Medicaid and CHIP enrollment divided by the total number of children in a particular demographic group, state, and year. $EnrollRate_{st}$ represents the state's mean monthly enrollment over the year from Medicaid.gov divided by the total children in that state and year from the ACS. The controls included in $\boldsymbol{X}_{st}$ in equation (3) are the same as in equation (1) but measured at an annual level. Standard errors are clustered by state.

3. Results

Event studies

Figure 1 shows the three standard event study graphs discussed above. These graphs tell a consistent story even though they are based on slightly different samples of states. In each case, enrollments are flat prior to the change, and then start to trend downwards immediately after the increases in administrative burden. The differences become statistically significant by two months after the change. The graphs suggest that post-treatment enrollments remain significantly lower than in the period before the policy changes.

Figure 2 shows "event study" estimates based on the Callaway and Sant'Anna (2021) method described above. These figures show a similar pattern. Enrollment is flat for up to 5 years prior to the policy change and then begins to trend downwards immediately after administrative burdens are implemented. The estimates become statistically significant by about two months after implementation and remain significantly lower (for almost three years in the graph with 33 lags).

Estimated effects of policies on monthly enrollments

Table 3 shows estimates of equation (2). The first column shows the baseline regression, estimated using monthly data from 2014-2020. The estimates suggest that increases in administrative burden reduce Medicaid plus CHIP enrollments by 1.8 percentage points. Not surprisingly, higher income cutoffs increase enrollments, while higher premiums and work requirements decrease them.

The child poverty rate, unemployment rate, and gross state product per capita are also not statistically significant. Column 2 of Table 3 shows that the estimated coefficients on the policy variables are very similar with or without these indicators of aggregate state macroeconomic conditions which may not be surprising given the state and year indicators included in the regressions. Column 3 shows models estimated over the period 2014-2019. It is reassuring to see that the point estimates without data affected by the COVID-19 pandemic are qualitatively similar to those estimated for the 2014-2020 period.

Column 4 shows the impact of each variable on enrollment churn. Administrative burden increases enrollment churn by 4.6 percentage points and work requirements increase enrollment churn by 6.1 percentage points. This suggests that these policies not only decreased overall enrollment rates, but also increased the percentage of enrollees cycling in and out of Medicaid or CHIP coverage.

The event study graphs suggest that it took some time for the full impact of the Medicaid policy changes to be felt. Table 4 explores this issue by using policy variables measured using 3, 6, 9, and 12 month lags. Table 4 suggests that the impact of some policy changes grows in subsequent months. For example, increases in administrative burden that occurred six months ago are associated with an enrollment reduction of 2.3 percentage points compared to 1.8

percentage points for the instantaneous policy change. The impact of Medicaid expansion is increasing and becomes statistically significant after 12 months, consistent with the idea that it may take time for broader adult eligibility to translate into greater child enrollment.

Table 5 presents aggregated estimation results using the Callaway and Sant'Anna (2021) methodology. The first row shows the simple weighted average of all group-time average treatment effects. It is significantly negative and larger than our baseline estimates. The rows below show the average treatment effect for each group of states whose policies began at the same time. The results are negative in ten out of eleven groups, and are statistically significant and negative in eight groups. The point estimates for the individual groups of states suggest that policies implemented in Arkansas, Kansas, Idaho, and Tennessee may have had the largest effects.

Estimated effects of aggregate Medicaid enrollments on individual enrollment by group

Ideally, we would like to know which children were most impacted by the policy changes discussed above. However, Medicaid enrollment data from Medicaid.gov does not have any information about the characteristics of the enrollees. For example, enrollment data are not available by sex and age. Hence, in this section of the paper, we turn to ACS data from the U.S. Census to ask how children from different types of families are impacted when aggregate Medicaid enrollments change in their state and year. The first column of Panel A shows that when the administrative mean monthly child enrollments rise by one unit, the probability that a child is reported to be enrolled in the ACS rises by 0.2.

There are a number of possible reasons that the response is less than one. First, there is known to be substantial under-reporting of Medicaid and CHIP enrollment in the ACS

(Boudreaux et al, 2013). Second, in a year that experienced a substantial change in monthly enrollments, a child could have been surveyed either before or after the change, leading to a mismatch between mean annual enrollments and the point-in-time ACS survey measure.

In any case, Table 6 indicates that ACS survey responses move with the administrative Medicaid plus CHIP enrollment data allowing us to ask whether some groups are more responsive to caseload movements than others. Panel A shows that children of other race show the strongest responses, followed by Black and then white children. Panel B shows that Hispanic children and children with at least one non-citizen parent also show much stronger responses. In households with a non-citizen parent, the response is four times greater than in households with only citizen parents. Similarly, children with non-college educated parents show larger responses than children with college-educated parents.

Panel D shows estimated effects by household income level. The estimates indicate that there was some response in all households with income less than 400 percent of the federal poverty line, with the largest point estimates for households with incomes below 100 percent and those between 100 and 200 percent of poverty. States' income eligibility limits from 2014 – 2020 ranged from 138 percent to 405 percent of the poverty line. Thus, all children under 100 percent of the poverty line and many under 200 percent of poverty who lost coverage would have done so despite being eligible for the programs. Panel E shows that there are slightly larger effects on children less than five, but the differences between older and younger children and between boys and girls are not statistically significant.

Robustness checks

Appendix Table 1 shows estimates of the effects of the policy variables on monthly Medicaid enrollments estimated on a sample that excludes Kansas and Arkansas, as discussed above. The estimates are very similar to those in Table 3. We also show estimates excluding Idaho, because the exact date when it adopted stricter paperwork requirements that increased administrative burden is not completely clear (see the Appendix for more details). Again, this has relatively little effect on the estimates.

Models similar to those in Table 6 but including the ACS data for 2020 are shown in Appendix Table 2. The estimates are qualitatively very similar to those in Table 6, although the point estimates are generally smaller than in Table 6. These weaker effects are consistent with greater measurement error in the 2020 data relative to previous years.

We have also experimented with using the minimum monthly Medicaid enrollment over the course of the year, as well as the maximum enrollment rate over the course of the year as alternatives to the mean monthly enrollment. The results are shown in Appendix Tables 3 and 4. Estimates using the minimum enrollment rate over the year are qualitatively similar to those shown in Table 6, though slightly smaller. Estimates using the maximum enrollment rates show a similar pattern, though the estimates are generally smaller and sometimes not statistically significant. We still however find that the largest impacts are on Hispanic children, those with non-citizen parents, and those without college-educated parents.

Appendix Table 5 shows models similar to Table 6 but using whether the child has any health insurance as the dependent variable rather than whether they have public health insurance coverage. Qualitatively the estimates follow the same pattern as in Table 6, although the magnitudes are uniformly smaller suggesting that some of the loss in public health insurance is made up by gains in private health insurance coverage. Overall, the probability of having any

health insurance coverage falls when Medicaid/CHIP enrollments fall, and again we find that the losses are greatest for Hispanic children, those with non-citizen parents, and those without college educated parents.

Appendix Table 6 shows a final robustness check in which we examine the effects of declines in Medicaid and CHIP caseloads on the Medicaid coverage of infants. Here, we do not expect to find an effect. In most states, when the mother's delivery is covered by Medicaid, the infant is enrolled shortly after birth and has coverage for up to a year. Hence, the enrollment of infants should not be greatly affected by administrative burdens that make re-enrollment more difficult. Only the point estimate for infants with parents that don't speak English well is statistically significant, and the magnitude is only 8% of the equivalent Table 6 estimate. These results confirm that it is indeed re-enrollment hurdles that are driving the declines in Medicaid enrollments.

4. Discussion and Conclusions

Our work is subject to several limitations. First, it would be desirable to directly examine the impact of state policy changes on the monthly Medicaid and CHIP enrollments of individual children, or at least on the enrollments of demographically defined groups of children. However, this is not feasible nationally using publicly available data sources.[14]

Second, our measures capture only *official* changes in administrative burdens. Unofficial burdens such as losing people's paperwork, requiring them to come back with

[14] It is not possible to do this analysis using the confidential individual-level claims files from the Center for Medicare and Medicaid Services (which researchers can apply to have access to) because the format of these files changed over time. Up to 2015, the files available are the Medicaid Analytic eXtract or MAX files. After 2015, CMS switched to The Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF). In addition to different data elements, the TAF files for the first several years were incomplete.

documents that are not actually required, giving misinformation, or making it impossible to contact officials are more difficult to quantify, though we know that they happen (Heinrich et al. 2022).

Third, the larger effects of increases in reporting requirements and administrative burden on children in Hispanic and non-citizen households may be in part due to the interaction of these new requirements with fears about immigration issues. KFF documented that in a recent survey of health centers, 28 percent reported that immigrant parents have been disenrolling their children from Medicaid (Tolbert et al., 2019). The Urban Institute found that in 2018 one in five Hispanic families with immigrant members reported that they avoided using public benefits and 42 percent of these respondents said that someone in their household was avoiding using Medicaid or CHIP (Bernstein et al., 2019).

Immigration policy changes are difficult to analyze at the state level as they often reflect national changes. However, Barofsky et al. (2020) study the effects of a national announcement in September 2018 that Medicaid use could affect a family's immigration status using data from 5 states. They find that counties with higher non-citizen shares experienced larger post-announcement declines in child Medicaid enrollments. Attempts to analyze the impact of immigration fear on enrollments nationally using state-level data led us to conclude that there was not enough variation at the state level to capture this effect.

Our estimates suggest that conditional on other policy changes that affected Medicaid and CHIP enrollments, increases in administrative burden, which became especially prevalent in 2017 and 2018, were responsible for an initial overall enrollment decline of 1.8 percentage points, or 4.2 percent nationally. The magnitude of these impacts tended to grow over time reaching a peak decline of 2.3 percentage points or 5.4 percent in the year after the policy

change. Event study analyses suggests that these negative effects were sustained for at least two years after the policy changes. Using newer difference-in-difference and event study methods suggest that these estimates are conservative and that the true magnitudes could be even greater.

While the ACS data on Medicaid and CHIP enrollments is imperfect in that it understates enrollments, estimates using the ACS suggest that the impact of increased administrative burden was very unevenly distributed. The estimated effects are three times greater for Hispanic compared to non-Hispanic children, and four times greater for children with a non-citizen parent, suggesting that immigration concerns magnify the impacts of administrative burdens. This impact is particularly concerning given that the vast majority of U.S. children with a non-citizen parent are U.S. citizens, and therefore entitled to services.[15] The effects are also three times as large in families without a college-educated parent suggesting that administrative burdens are a particular hardship for these families.

These results provide new evidence about the importance of recent changes in administrative burdens that have reduced enrollments in Medicaid and CHIP. These reductions occurred over a period in which eligibility requirements, income cutoffs, and CHIP premiums remained largely unchanged due to maintenance of effort requirements imposed on states by the federal government under the Affordable Care Act. Moreover, other factors such as the expansion of Medicaid to low-income adults tended to increase child enrollments and so may have offset the negative impact of the increases in administrative burdens to some extent.

Renewed attention to the impacts of administrative burdens on enrollments in public health insurance is particularly timely now that we are nearing the end of the public health emergency declared at the start of the COVID-19 pandemic. Since March 2020, states have been

[15] In families with an unauthorized non-citizen parent, 80 percent of the children are U.S. citizens (Capp et al., 2016).

required to suspend disenrollment from Medicaid for the duration of the public health emergency, with the result that the caseload has grown by over 20 percent (Carallo and Moreno, 2022). When the state of emergency ends, eligibility will need to be re-determined for almost all of these people, with the result that the administrative changes implemented prior to the pandemic will have even more bite. The huge backlog of redetermination cases may have its own negative consequences on the timeliness and accuracy of re-enrollments. Given the demonstrated importance and cost-effectiveness of public health insurance coverage for children, the federal government may wish to take steps to address the negative consequences of administrative burdens on children's enrollment in public health insurance.

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Figure 1: Event Study of the Effect of New Administrative Burden on Child Medicaid Enrollment

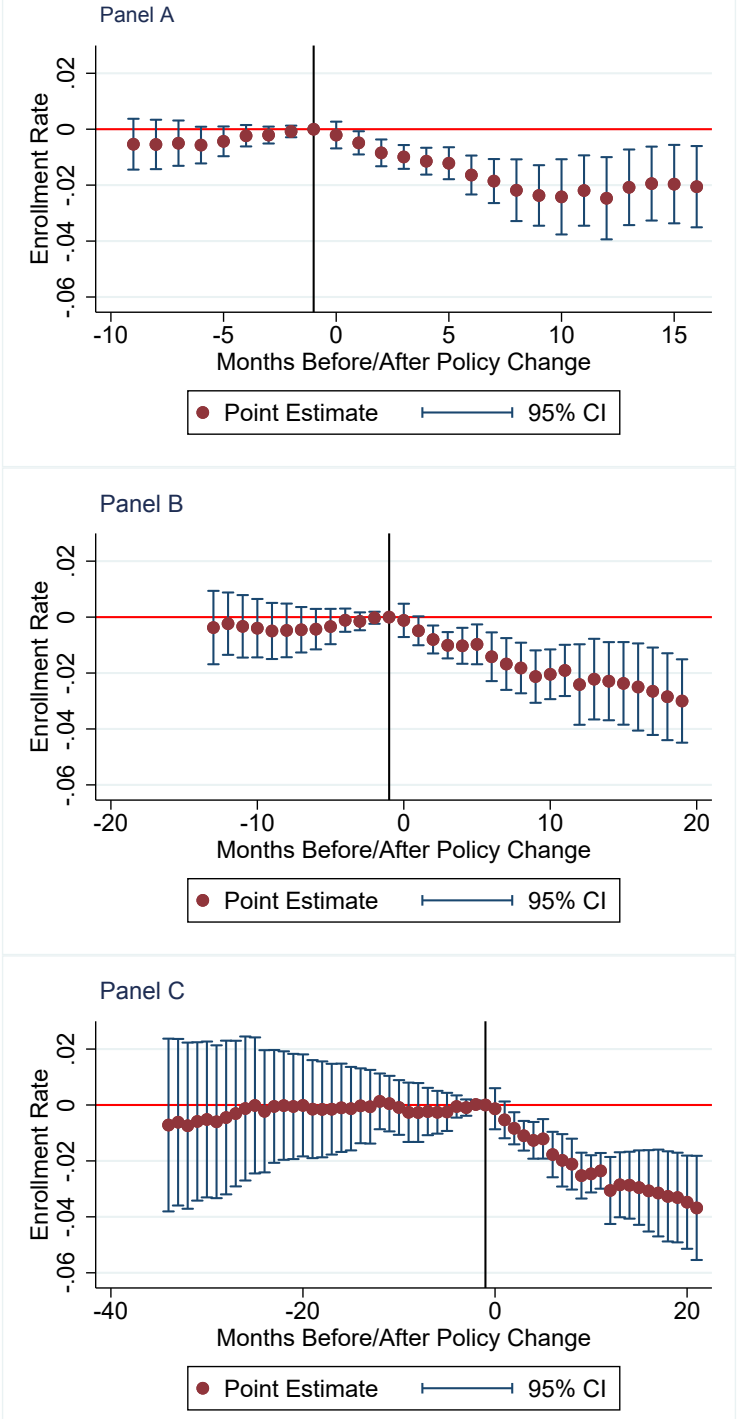

Figure 2: Event Study following Callaway and Sant'Anna (2021)

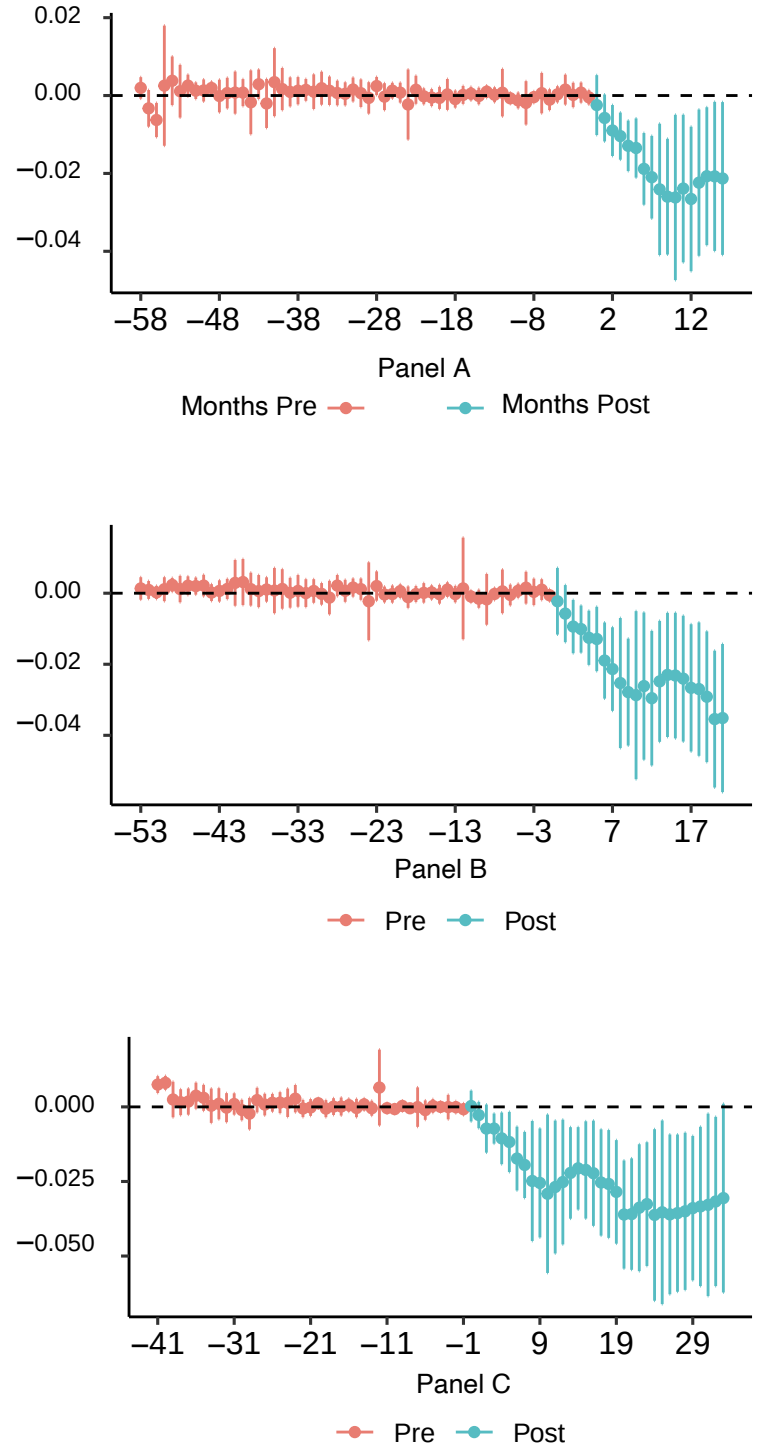

Table 1: Policy Changes Impacting Child Medicaid and CHIP Enrollment

State	Increase in Administrative Burden	Re-determination Pause in 2014	Medicaid Expansion	Child Premium % Change at 201% FPL	Child Income Cutoff % Change, % FPL	Work Require-ments
Alabama		No				
Alaska		No	9/15			
Arizona		No	1/14		7/14 (-2.4%), 7/16 (+2.5%)	
Arkansas	6/15	Yes	1/14			6/18 - 3/19
California		Yes	1/14			
Colorado	3/17	No	1/14			
Connecticut		Yes	1/14			
Delaware		Yes	1/14			
Florida	7/17	Yes				
Georgia		No				
Hawaii	3/18	Yes	1/14			
Idaho	1/19	Yes	1/20			
Illinois	1/18	Yes	1/14			
Indiana		No	2/15		7/15 (+2.8%), 7/20 (-2.7%)	
Iowa		No	1/14			
Kansas	6/15	Yes			7/14,15,16,17,18,19,20 (changes total -7.2%)	
Kentucky		Yes	1/14			
Louisiana	3/19	Yes	7/16			
Maine		No	1/19			
Maryland		Yes	1/14			
Massachusetts		Yes	1/14			
Michigan		Yes	4/14			
Minnesota		Yes	1/14			
Mississippi	1/18	Yes				
Missouri	1/18	Yes	10/21	7/15, 7/17, 7/18 (changes total -17.1%)		
Montana	7/19	Yes	1/16			
Nebraska		No	10/20			
Nevada		Yes	1/14			
New Hampshire		No	8/14			
New Jersey		Yes	1/14	7/18 (+4.7%)		
New Mexico		No	1/14			
New York		No	1/14			
North Carolina		No				
North Dakota		Yes	1/14			
Ohio	2/15	Yes	1/14			
Oklahoma	8/19	Yes	7/21			
Oregon		Yes	1/14			
Pennsylvania		Yes	1/15	7/15 (-100%)		
Rhode Island		Yes	1/14			
South Carolina		No				
South Dakota		No				
Tennessee	11/16 - 03/19	Yes				
Texas	10/14	No				
Utah		No	1/20			
Vermont		Yes	1/14		7/14 (-0.3%)	
Virginia		No	1/19			
Washington		Yes	1/14	7/15 (-100%)	7/14 (+3.9%)	
West Virginia		Yes	1/14	7/15 (-100%)		
Wisconsin		No				
Wyoming		No				

Notes: See the data appendix for policy change details and sources. We use 02/19 as an end date for the increase in administrative burden for Tennessee in our regressions, as our enrollment data counts enrollees on the last day of the month and the policy ended on March 19th, 2019. Similarly, we use 2/19 as an end date in regressions for work requirements in Arkansas because the policy ended on March 27th, 2019. Columns 5 and 6 report the percent change from January 2014 to December 2020 along with the dates of changes.

Table 2: Mean State ACS Percent Medicaid Enrollments and Changes, by Demographic

Groups with a greater than a 1.5 percentage point change shown in bold

Demographic group	2016	2019	Enrollment change	Observations
All	0.376 (0.077)	0.366 (0.077)	-0.010 (0.021)	4014318
White	0.315 (0.080)	0.306 (0.078)	-0.009 (0.020)	2887611
Black	**0.573 (0.122)**	**0.557 (0.114)**	**-0.016 (0.071)**	**440029**
Other or Mixed Race	**0.476 (0.090)**	**0.449 (0.086)**	**-0.027 (0.055)**	**686678**
Hispanic	**0.570 (0.115)**	**0.530 (0.117)**	**-0.040 (0.114)**	**512129**
Not Hispanic	0.336 (0.080)	0.330 (0.084)	-0.006 (0.018)	3235378
Citizen Parents	0.343 (0.079)	0.335 (0.078)	-0.008 (0.018)	3263135
Noncitizen Parent	**0.514 (0.133)**	**0.495 (0.106)**	**-0.019 (0.121)**	**468411**
Parent with College Education	0.330 (0.074)	0.320 (0.075)	-0.010 (0.021)	3065725
Parents without College Education	0.539 (0.098)	0.527 (0.098)	-0.012 (0.059)	665821
Parent with Weak English	**0.661 (0.122)**	**0.624 (0.103)**	**-0.037 (0.113)**	**255530**
Parents without Weak English	0.346 (0.078)	0.338 (0.078)	-0.009 (0.018)	3476016
<100% FPL	**0.800 (0.070)**	**0.784 (0.074)**	**-0.016 (0.039)**	**664526**
100-200% FPL	0.615 (0.092)	0.621 (0.101)	0.006 (0.050)	783389
200-400% FPL	**0.249 (0.071)**	**0.273 (0.083)**	**0.024 (0.026)**	**1176751**
>400% FPL	0.073 (0.025)	0.079 (0.024)	0.006 (0.020)	1260022
Age <1	**0.428 (0.087)**	**0.406 (0.087)**	**-0.023 (0.022)**	**176592**
Age <5	0.358 (0.075)	0.353 (0.075)	-0.005 (0.023)	931339
Age 5+	**0.439 (0.102)**	**0.405 (0.093)**	**-0.035 (0.068)**	**3082979**
Female	0.375 (0.081)	0.364 (0.079)	-0.012 (0.025)	1956239
Male	0.376 (0.075)	0.368 (0.077)	-0.008 (0.025)	2058079

Notes: The table shows the mean over all states of the child Medicaid and CHIP enrollment for each group as reported in the ACS divided by total children in that state in the ACS. Citizenship, College and Weak English variables refer to the child's parents. States in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. Observation counts are child totals for the sample across states and years 2014 - 2019.

Table 3: Impact of Policy Changes on Medicaid Enrollments for Children

	(1)	(2)	(3)	(4)
Dependent Variable:	Medicaid Enrollments			Churn
	Benchmark 2014-2020	Without Controls	With controls, 2014-2019	Benchmark 2014-2020
Increase in Administrative Burden	-0.0176**	-0.0175**	-0.0156**	0.0457*
	(0.0066)	(0.0066)	(0.0058)	(0.0190)
Redetermination Pause	0.0076	0.0059	0.0067	-0.0309
	(0.0100)	(0.0097)	(0.0096)	(0.0206)
Medicaid Expansion	0.0115	0.0124	0.0195	0.0248
	(0.0118)	(0.0122)	(0.0137)	(0.0220)
Maximum Income Cutoff as % Federal Poverty Line (FPL)	0.0014**	0.0013**	0.0022**	-0.0013
	(0.0005)	(0.0005)	(0.0006)	(0.0017)
Premiums ($) at 201% FPL 1 child	-0.0008**	-0.0007*	-0.0007*	0.0019
	(0.0003)	(0.0003)	(0.0003)	(0.0011)
Work Requirements	-0.0330**	-0.0316**	-0.0396**	0.0608**
	(0.0029)	(0.0021)	(0.0030)	(0.0172)
Child Poverty Rate	0.0002		0.0011	-0.0027
	(0.0013)		(0.0011)	(0.0036)
Unemployment Rate	-0.0007		-0.0064	-0.0041
	(0.0011)		(0.0043)	(0.0074)
Gross State Product Per Capita	-0.0021		-0.0016	0.0090
	(0.0019)		(0.0016)	(0.0073)
Constant	0.1665	0.1124	-0.0847	0.3469
	(0.1983)	(0.1405)	(0.2142)	(0.5584)
Observations	4086	4086	3486	341
Within R2	0.2688	0.2575	0.2174	0.2042

Notes: The dependent variable for columns 1 through 3 is aggregate monthly state child Medicaid and CHIP enrollments divided by the child population from the American Community Survey. The dependent variable for the fourth column is enrollment churn, measured as the difference between the annual number of children ever enrolled in Medicaid or CHIP and the number of children enrolled at the end of the year divided by annual children ever enrolled. In addition to the variables shown in the table the regressions include state and year fixed effects. Standard errors are clustered by state and shown in parentheses. *p<0.05, ** p<.01. Medicaid enrollment for children averaged across states and years 2014 - 2019 is 44.2%, while enrollment averaged across years 2014 - 2020 is 44.5%. Mean Medicaid enrollment for children was 42.6% in 2014 and 44.6% in 2016.

Table 4: Impact of Policy Changes on Medicaid Enrollment for Children, with Lagged Policy Changes

	(1) Benchmark	(2) 3 mo lags	(3) 6 mo lags	(4) 9 mo lags	(5) 12 mo lags
Increase in Administrative Burden	-0.0176**	-0.0207**	-0.0226**	-0.0225**	-0.0208**
	(0.0066)	(0.0063)	(0.0063)	(0.0058)	(0.0053)
Redetermination Pause	0.0076	0.0096	0.0105	0.0119	0.0107
	(0.0100)	(0.0099)	(0.0096)	(0.0089)	(0.0083)
Medicaid Expansion	0.0115	0.0154	0.0192	0.0235	0.0269*
	(0.0118)	(0.0121)	(0.0123)	(0.0129)	(0.0135)
Maximum Income Cutoff as % FPL	0.0014**	0.0013*	0.0013*	0.0006	0.0001
	(0.0005)	(0.0005)	(0.0006)	(0.0007)	(0.0008)
Premiums at 201% FPL 1 child	-0.0008**	-0.0007*	-0.0007*	-0.0006*	-0.0005
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Work Requirements	-0.0330**	-0.0341**	-0.0311**	-0.0238**	-0.0174**
	(0.0029)	(0.0029)	(0.0030)	(0.0030)	(0.0031)
Child Poverty Rate	0.0002	0.0005	0.0006	0.0009	0.0008
	(0.0013)	(0.0012)	(0.0013)	(0.0013)	(0.0013)
Unemployment Rate	-0.0007	-0.0009	-0.0015	-0.0061	-0.0049
	(0.0011)	(0.0010)	(0.0011)	(0.0034)	(0.0035)
Gross State Product Per Capita	-0.0021	-0.0021	-0.0020	-0.0021	-0.0018
	(0.0019)	(0.0018)	(0.0016)	(0.0014)	(0.0013)
Constant	0.1665	0.1916	0.2000	0.4395	0.5913*
	(0.1983)	(0.2062)	(0.2208)	(0.2522)	(0.2758)
Observations	4086	3930	3774	3621	3471
Within R2	0.2688	0.2815	0.2979	0.3147	0.3162

Notes: The independent variables in columns 2 to 5 are lagged by 3, 6, 9, and 12 months respectively. The dependent variable is aggregate monthly state child Medicaid and CHIP enrollments divided by child population from the ACS. In addition to the variables shown, the regressions include state and year fixed effects. Standard errors are clustered by state and shown in parentheses. *p<0.05, ** p<.01.
Medicaid enrollment for children averaged across states and years 2014-2020 is 44.5%.
Mean Medicaid enrollment for children was 42.6% in 2014 and 44.6% in 2016.

Table 5: Callaway and Sant'Anna Method Estimations

Simple Aggregation (All)	-0.0317**
	(0.0083)
Group Aggregation	
Arkansas, Kansas	-0.0511*
	(0.0185)
Colorado	-0.0323**
	(0.0030)
Florida	-0.0308**
	(0.0026)
Hawaii	-0.0045
	(0.0025)
Idaho	-0.0451**
	(0.0025)
Illinois, Missouri, Mississippi	-0.0192
	(0.0101)
Louisiana	-0.0145**
	(0.0018)
Montana	-0.0322**
	(0.0020)
Oklahoma	0.0100**
	(0.0019)
Tennessee	-0.0436**
	(0.0033)
Texas	-0.0296**
	(0.0069)
Observations	3572

Notes: The dependent variable is aggregate monthly state child Medicaid and CHIP enrollments divided by the child population from the American Community Survey. The first row reports the weighted average (by group size) of all group-time average treatment effects. The rows below give the treatment effects averaged by group, where states are grouped by policy implementation month. Standard errors are clustered by state and shown in parentheses. *p<0.05, ** p<.01.

Table 6: Demographic Regressions for Mean Child Enrollment Rates, 2014-19

	(1)	(2)	(3)	(4)
Panel A:	**All**	**White**	**Black**	**Other Race**
Mean Enrollment	0.216**	0.214**	0.318	0.367*
	(0.071)	(0.059)	(0.232)	(0.173)
Constant	0.206**	0.131*	0.467	0.106
	(0.064)	(0.067)	(0.318)	(0.178)
Observations	296	296	266	296
Panel B:	**Hispanic**	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Mean Enrollment	0.511**	0.159*	0.168**	0.688**
	(0.138)	(0.068)	(0.062)	(0.215)
Constant	0.365	0.237**	0.187**	0.090
	(0.249)	(0.063)	(0.058)	(0.309)
Observations	284	296	296	296
Panel C:	**College Parent**	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Mean Enrollment	0.140	0.437**	0.447	0.192**
	(0.083)	(0.155)	(0.282)	(0.063)
Constant	0.192**	0.182	0.206	0.219**
	(0.065)	(0.124)	(0.303)	(0.060)
Observations	296	296	260	296
Panel D:	**<100% FPL**	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Mean Enrollment	0.280**	0.334*	0.241**	0.069
	(0.089)	(0.150)	(0.093)	(0.049)
Constant	0.655**	0.437**	0.095	-0.006
	(0.168)	(0.163)	(0.125)	(0.041)
Observations	296	296	296	296
Panel E:	**Age <5**	**Age 5+**	**Female**	**Male**
Mean Enrollment	0.239**	0.205*	0.220**	0.213*
	(0.073)	(0.080)	(0.066)	(0.087)
Constant	0.240	0.200**	0.185*	0.223**
	(0.134)	(0.067)	(0.075)	(0.064)
Observations	296	296	296	296

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with Medicaid in the American Community Survey. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: mean state child enrollment during the year from CMS divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States cells in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix Table 1: Impact of Policy Changes on Medicaid Enrollment for Children, 2014-19
Alternative Specifications

	(1) Benchmark	(2) Drop Idaho	(3) Drop Kansas and Arkansas
Increase in Administrative Burden	-0.0176**	-0.0138*	-0.0173*
	(0.0066)	(0.0058)	(0.0069)
Redetermination Pause	0.0076	0.0065	0.0075
	(0.0100)	(0.0099)	(0.0102)
Medicaid Expansion	0.0115	0.0172	0.0106
	(0.0118)	(0.0111)	(0.0117)
Maximum Income Cutoff as % Federal Poverty Line (FPL)	0.0014**	0.0014**	0.0018**
	(0.0005)	(0.0004)	(0.0006)
Premiums at 201% FPL 1 child	-0.0008**	-0.0007*	-0.0007**
	(0.0003)	(0.0003)	(0.0003)
Work Requirements	-0.0330**	-0.0331**	
	(0.0029)	(0.0029)	
Child Poverty Rate	0.0002	0.0000	0.0002
	(0.0013)	(0.0012)	(0.0013)
Unemployment Rate	-0.0007	-0.0008	-0.0008
	(0.0011)	(0.0011)	(0.0011)
Gross State Product Per Capita	-0.0021	-0.0019	-0.0023
	(0.0019)	(0.0019)	(0.0020)
Constant	0.1665	0.1637	0.0589
	(0.1983)	(0.1868)	(0.2139)
Observations	4086	4002	3929
Within R2	0.2688	0.2803	0.2803

Notes: The dependent variable is aggregate monthly state child Medicaid and CHIP enrollments divided by child population from the American Community Survey. In addition to the variables shown, the regressions include state and year fixed effects. Standard errors are clustered by state and shown in parentheses. * indicates $p<0.05$, ** indicates $p<0.01$. Medicaid enrollment for children average across states and years for 2014-2020 is 44.5%. Mean Medicaid enrollment for children was 42.6% in 2014 and 44.6% in 2016.

Appendix Table 2: Demographic Regressions for Mean Child Enrollment Rates, 2014-20

	(1)	(2)	(3)	(4)
	All	**White**	**Black**	**Other Race**
Mean Enrollment	0.183**	0.161**	0.441*	0.337*
	(0.058)	(0.059)	(0.223)	(0.144)
Constant	0.256**	0.205**	0.445	0.108
	(0.050)	(0.054)	(0.311)	(0.157)
Observations	346	346	311	346
	Hispanic	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Mean Enrollment	0.427**	0.132*	0.124*	0.762**
	(0.107)	(0.055)	(0.055)	(0.221)
Constant	0.309	0.269**	0.231**	0.073
	(0.195)	(0.050)	(0.047)	(0.280)
Observations	332	346	346	346
	College Parent	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Mean Enrollment	0.129*	0.320**	0.362	0.156**
	(0.063)	(0.107)	(0.259)	(0.054)
Constant	0.238**	0.232*	0.382	0.254**
	(0.056)	(0.105)	(0.236)	(0.048)
Observations	346	346	304	346
	<100% FPL	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Mean Enrollment	0.211**	0.318*	0.191*	0.047
	(0.076)	(0.126)	(0.093)	(0.041)
Constant	0.766**	0.435**	0.128	0.011
	(0.151)	(0.128)	(0.105)	(0.039)
Observations	346	346	346	346
	Age <5	**Age 5+**	**Female**	**Male**
Mean Enrollment	0.208**	0.172**	0.171**	0.196**
	(0.070)	(0.064)	(0.056)	(0.068)
Constant	0.292*	0.252**	0.243**	0.267**
	(0.127)	(0.044)	(0.061)	(0.049)
Observations	346	346	346	346

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with Medicaid in the American Community Survey. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: mean state child enrollment during the year divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix Table 3: ACS Regressions using Minimum Child Enrollment Rates, 2014-19

	(1)	(2)	(3)	(4)
Panel A:	**All**	**White**	**Black**	**Other Race**
Min Enrollment	0.191**	0.199**	0.317	0.285*
	(0.062)	(0.050)	(0.211)	(0.140)
Constant	0.224**	0.143*	0.472	0.160
	(0.064)	(0.069)	(0.308)	(0.169)
Observations	296	296	266	296
Panel B:	**Hispanic**	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Min Enrollment	0.513**	0.137*	0.151**	0.661**
	(0.130)	(0.060)	(0.056)	(0.198)
Constant	0.369	0.253**	0.200**	0.116
	(0.252)	(0.063)	(0.057)	(0.297)
Observations	284	296	296	296
Panel C:	**College Parent**	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Min Enrollment	0.133	0.374**	0.548*	0.169**
	(0.074)	(0.129)	(0.238)	(0.056)
Constant	0.198**	0.225	0.144	0.235**
	(0.065)	(0.118)	(0.294)	(0.059)
Observations	296	296	260	296
Panel D:	**<100% FPL**	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Min Enrollment	0.214*	0.329**	0.226**	0.064
	(0.085)	(0.127)	(0.080)	(0.041)
Constant	0.697**	0.445**	0.107	-0.003
	(0.171)	(0.161)	(0.122)	(0.039)
Observations	296	296	296	296
Panel E:	**Age <5**	**Age 5+**	**Female**	**Male**
Min Enrollment	0.220**	0.178**	0.217**	0.167*
	(0.068)	(0.067)	(0.059)	(0.075)
Constant	0.254	0.219**	0.190*	0.254**
	(0.133)	(0.068)	(0.074)	(0.064)
Observations	296	296	296	296

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with Medicaid in the American Community Survey. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: minimum state child enrollment from CMS during the year divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States cells in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix Table 4: ACS Regressions with Maximum Child Enrollment Rates, 2014-19

	(1)	(2)	(3)	(4)
Panel A:	**All**	**White**	**Black**	**Other Race**
Max Enrollment	0.194**	0.182**	0.209	0.356*
	(0.066)	(0.058)	(0.198)	(0.165)
Constant	0.215**	0.146*	0.522	0.107
	(0.062)	(0.066)	(0.308)	(0.178)
Observations	296	296	266	296
Panel B:	**Hispanic**	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Max Enrollment	0.398**	0.147*	0.145**	0.614**
	(0.124)	(0.062)	(0.056)	(0.195)
Constant	0.427	0.242**	0.198**	0.122
	(0.242)	(0.059)	(0.055)	(0.313)
Observations	284	296	296	296
Panel C:	**College Parent**	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Max Enrollment	0.122	0.379*	0.267	0.174**
	(0.075)	(0.151)	(0.250)	(0.058)
Constant	0.200**	0.209	0.312	0.226**
	(0.062)	(0.124)	(0.303)	(0.056)
Observations	296	296	260	296
Panel D:	**<100% FPL**	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Max Enrollment	0.293**	0.263	0.205*	0.066
	(0.082)	(0.136)	(0.089)	(0.047)
Constant	0.642**	0.474**	0.113	-0.006
	(0.160)	(0.161)	(0.124)	(0.042)
Observations	296	296	296	296
Panel E:	**Age <5**	**Age 5+**	**Female**	**Male**
Max Enrollment	0.218**	0.184*	0.184**	0.205*
	(0.077)	(0.074)	(0.062)	(0.081)
Constant	0.248	0.209**	0.203**	0.224**
	(0.133)	(0.065)	(0.073)	(0.064)
Observations	296	296	296	296

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with Medicaid in the American Community Survey. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: maximum state child enrollment from CMS during the year divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States cells in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix Table 5: Demographic Regressions for Mean Child Insurance Rates, 2014-19

	(1)	(2)	(3)	(4)
Panel A:	**All**	**White**	**Black**	**Other Race**
Mean Enrollment	0.118**	0.090**	0.232	0.249**
	(0.019)	(0.019)	(0.142)	(0.061)
Constant	0.880**	0.889**	0.961**	0.796**
	(0.022)	(0.022)	(0.144)	(0.070)
Observations	296	296	257	293
Panel B:	**Hispanic**	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Mean Enrollment	0.337**	0.082**	0.101**	0.254*
	(0.083)	(0.019)	(0.019)	(0.101)
Constant	0.726**	0.910**	0.907**	0.642**
	(0.096)	(0.022)	(0.021)	(0.116)
Observations	283	296	296	292
Panel C:	**College Parent**	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Mean Enrollment	0.098**	0.189**	0.095	0.104**
	(0.018)	(0.061)	(0.142)	(0.019)
Constant	0.897**	0.882**	0.758**	0.891**
	(0.021)	(0.070)	(0.165)	(0.022)
Observations	296	295	260	296
Panel D:	**<100% FPL**	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Mean Enrollment	0.155**	0.157**	0.123**	0.072**
	(0.053)	(0.050)	(0.036)	(0.023)
Constant	0.769**	0.820**	0.907**	0.933**
	(0.061)	(0.058)	(0.041)	(0.026)
Observations	296	296	296	296
Panel E:	**Age <5**	**Age 5+**	**Female**	**Male**
Mean Enrollment	0.109**	0.118**	0.113**	0.122**
	(0.029)	(0.021)	(0.022)	(0.024)
Constant	0.863**	0.888**	0.918**	0.845**
	(0.033)	(0.024)	(0.025)	(0.027)
Observations	296	296	296	296

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with health insurance in the American Community Survey. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: mean state child enrollment during the year from CMS divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States cells in a particular demographic group with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix Table 6: Regressions for Mean Infant Medicaid Enrollment Rates, 2014-19

	(1)	(2)	(3)	(4)
Panel A:	**All**	**White**	**Black**	**Other Race**
Mean Enrollment	-0.000	-0.002	0.004	0.003
	(0.003)	(0.004)	(0.012)	(0.012)
Constant	0.376	0.186	1.111*	0.259
	(0.196)	(0.206)	(0.468)	(0.354)
Observations	296	295	238	294
Panel B:	**Hispanic**	**Not Hispanic**	**Citizen Parents**	**Non-Citizen Parent**
Mean Enrollment	-0.006	0.000	-0.001	0.005
	(0.011)	(0.003)	(0.004)	(0.019)
Constant	0.383	0.412	0.422*	0.087
	(0.512)	(0.239)	(0.193)	(0.827)
Observations	274	296	296	273
Panel C:	**College Parent**	**Without College Parents**	**Weak English Parent**	**Without Weak English Parents**
Mean Enrollment	-0.002	-0.001	0.037*	-0.001
	(0.004)	(0.013)	(0.018)	(0.004)
Constant	0.266	0.698	-0.386	0.467**
	(0.206)	(0.389)	(0.656)	(0.181)
Observations	296	294	220	296
Panel D:	**<100% FPL**	**100-200% FPL**	**200-400% FPL**	**>400% FPL**
Mean Enrollment	-0.004	0.006	-0.001	-0.003
	(0.007)	(0.008)	(0.006)	(0.005)
Constant	0.516	0.467	0.153	0.104
	(0.401)	(0.322)	(0.263)	(0.228)
Observations	286	292	296	287
Panel E:	**Female**	**Male**		
Mean Enrollment	0.004	-0.003		
	(0.005)	(0.004)		
Constant	0.584*	0.175		
	(0.293)	(0.249)		
Observations	296	296		

Notes: Standard errors in parentheses. Dependent variable is percentage of demographic group with health insurance in the American Community Survey for children less than 1 years old. Citizenship, College and Weak English variables refer to the child's parents. Independent variables are: mean state child enrollment during the year from CMS divided by total children in that state in the ACS, the child poverty rate, unemployment rate, gross state product and state and year fixed effects. Standard errors are clustered by state and shown in parentheses. States cells in a particular demographic group for children ages 0 - 18 with fewer than 150 observations from 2014 - 2019 were dropped. * $p<0.05$,** $p<0.01$

Appendix: Descriptions of State Laws and Regulations that Increased Administrative Burden with References

State	Start Date	Description
Arkansas	6/1/2015 (Income Verification) 6/1/2018 - 3/27/2019 (Work Requirements)	In June 2015, Medicaid enrollees were sent letters requiring them to verify income eligibility for Medicaid within 10 days. Because of a legislative restriction on Medicaid promotion, there was no governmental outreach to enrollees about this process (Evans, 2015). Data from insurance companies suggested that 25% of the addresses that the Department of Human Services (DHS) had on file were not accurate - 6,000 pieces of mail were returned as undeliverable in just one of the state's seven coverage regions. Furthermore, the envelopes were nondescript and did not indicate that they contained an important document with a time limit (Peacock, Ramsey, & Hardy, 2015). In August, Arkansas increased the response window from 10 to 30 days under pressure from CMS (Brantley, 2015). In March 2017, enrollment for 21,280 children and adults was terminated as a result of eligibility checks. Although an Arkansas Department of Human Services spokesperson said that some of these terminations were legitimate, almost half of them (9,000) were due to enrollees failing to respond to notices requesting information needed to verify their eligibility (Davis, 2017). According to DHS, in June 2018, 39% of closed cases were due to inability to locate the client or the client moving out of state, 21% were due to failure to return requested information, 20% were other causes, 11% were due to household's increased income, 5% were enrollee requested closure, and 4% were due to incarceration (Hardy, 2018). The first state to fully implement work requirements for Medicaid was Arkansas. The program was implemented in June 2018 and required adult enrollees ages 30 - 49 to record their employment or other activities on a monthly basis to maintain coverage. Those who did not report 80 hours or work per month (or other qualifying activities) for three months would lose coverage. Adults over 49 and with children were exempted (Brantley & Ku, 2018). The only reporting system available was a computer web-based system. The program was halted in March 2019. A survey of Arkansan Medicaid beneficiaries and other low-income adults found that only 6% were aware that the program had been put on hold (Sommers et al., 2020).

Colorado	3/1/17	In March 2017, Colorado implemented updates to the eligibility system for Medicaid (Colorado Department of Health Care Policy and Financing, 2017). These updates required verification of income and assets on a quarterly basis and increased the paperwork necessary for self-employed enrollees and those with inconsistent incomes (Pray, Neswood, & Brennan, 2019). Letters notifying enrollees that they had income discrepancies were written in complex language which "drives a lot of phone calls, a lot of confusion, [and] a lot of rework because the client just doesn't understand.... and oftentimes county staff for instance don't even understand" (State Health Access Data Assistance Center, 2018). According to the Colorado Department of Health Care Policy and Financing, approximately 37,000 people were dropped from Medicaid enrollment during October and November 2017 as a result of these changes, primarily due to enrollees not responding to the verification requests. An additional policy implemented in April 2018 closes a Medicaid case after one piece of returned mail (Colorado Center on Law & Policy, 2019).
Florida	7/1/17	In 2017, the Department of Children and Families in Florida hired Equifax Workforce Solutions, a contractor that maintains the largest employment data bank in the US, to increase upfront salary and other eligibility information on Medicaid applications. Agency for Health Care Administration Assistant Deputy Secretary Tom Wallace attributed the enrollment decline in Florida to this increase in verification (Haughey, 2018). We use the date that the state budget funding the fraud prevention program took effect as the date of the policy change (Fla. Legis, 2017). Enrollment churn in Florida increased by approximately 1 percentage point in 2017 and 4 percentage points in 2018 relative to 2016 based on our calculations using monthly CMS Medicaid enrollment data and Statistical Enrollment Data System (SEDS) Combined CHIP Enrollment Total Report data.
Hawaii	3/1/18	In March 2018, Hawaii started crosschecking eligibility data across other state agencies. According to the administrator of Hawaii Med-Quest, “we made some improvements in matching with the Department of Labor’s wage data as well as the Department of Health’s vital records.” Health Center Medicaid eligibility worker Hue Nettrour reported that the department is stricter now and that most of the patients she assisted had their cases terminated because they failed to submit documents on time. Executive director of the Lānaʻi Community Health Center added that Med-QUEST has been cutting off benefits without prior notice, with patients saying that they did not receive the request for further information from the Department of Health Services (Avendano, 2019).

Idaho	1/1/19	In early 2019, CMS reviewed Idaho's eligibility procedures and notified the state that they needed to re-verify enrollees' coverage annually rather than allowing automatic renewals of people who were known to be eligible from other state data bases (Lori Wolff, the Deputy Director of Idaho's Department of Health and Welfare, cited in Brown, 2019). These changes led to an increase in the number of enrollees who need to resubmit paperwork annually to prove their eligibility (Churchill, 2019). We are unable to time-stamp this change with more specificity than "early 2019," so we use January 1, 2019 as the start date for the policy.
Illinois	1/1/18	In October 2013, Illinois adopted a new application portal for Medicaid, SNAP and TANF called an Integrated Eligibility System (IES). Phase 2 of IES began on October 24, 2017. The first set of redetermination forms generated by IES were due in January 2018, which is the date that we use as it is the first date during our period of analysis that enrollment would have been affected by the change. If enrollees did not respond, their coverage was terminated (Illinois Department of Human Services, n.d.; Illinois Department of Healthcare and Family Services, n.d). In 2018, a group of over 50 advocates and community organizations signed a letter detailing the problems IES and requesting that the "auto-cancellation" feature be suspended while the problems were resolved. According to the letter, "the volume of apparently inappropriate terminations by IES of eligible individuals and families is wreaking havoc on their access to care" (Illinois Department of Healthcare and Family Services, 2018).
Kansas	6/29/15	The Kansas Eligibility Enforcement System (KEES) was implemented on June 29, 2015. According to a letter from James G. Scott, CMS Associate Regional Manager to KDHE Secretary Susan Mosier in 2017, the CMS Kansas City Regional office received numerous reports of inaccurate and delayed Medicaid application processing in 2015 and 2016. In June 2016, the state reported a backlog of almost 11,000 applications that had been processing for longer than the federal limit (45 days) (Scott, 2017).
Louisiana	3/29/19	In February 2019, Louisiana implemented new eligibility control strategies. The primary change was implementing quarterly income data matches with the Louisiana Workforce Commission. Adults who appeared to be over the 138% FPL income cutoff were mailed a notice with a 60-day response period and were notified that if they did not demonstrate that they met program requirements by March 29 they would lose insurance coverage (Department of Health and Human Services Center for Program Integrity, 2020). Not all enrollees who lost coverage were adults who had gained coverage during Medicaid expansion (Deslatte, 2019). The majority of enrollees lost coverage because they failed to respond to the letters (Karlin, 2019). The state reported being unable to handle call volumes and the quantity of information being submitted to DHS.

Mississippi	1/1/18	In April 2017, Mississippi enacted the Medicaid and Human Services Transparency and Fraud Prevention Act. Equifax lobbied for the law, which requires a private contractor to check the eligibility of Medicaid enrollees (Fifield, 2017; Medicaid and Human Services Transparency and Fraud Prevention Act). The changes required by this legislation began in January of 2018. New applications and renewals changed from requiring reporting of income changes that caused gross income to exceed 130% of the poverty line (Mississippi Department of Human Services, 2017) to requiring households to report all changes in income of more than $100 (adjusted for inflation after FY 2018), as well as any changes in the source of income, residence, household composition, liquid resources and child support, all within 10 days (7 CFR, 1978). The Mississippi Department of Human Services also implemented policies to verify all expenses for all programs for welfare applicants and household composition when questionable (Mississippi Department of Human Services, 2017).
Missouri	1/1/18	In 2017, Missouri passed legislation to implement an automated eligibility check process for Medicaid enrollees (Mo Rev Stat, 2018). The program was launched in 2018. Enrollees who could not be verified through cross-checking federal or state data were sent a letter and had 10 days to respond. Call centers were overwhelmed; in June of 2018, the call center dropped or did not answer 75% of calls it received compared to 30% in June 2017 (Kids Win Missouri, Missouri Budget Project & Missouri Coalition of Children's Agencies, 2019). About 60% of the 70,000 enrollees who lost coverage did so because they did not return the form. 80% of those who lost coverage were children. About 30% were dropped because the state could not locate them, potentially because of transient living situations (Fentem, 2019). According to a survey of 37 health care providers collectively serving nearly every region of the state, 87% of patients who lost Medicaid coverage still met income eligibility requirements but lost coverage due to challenges with the renewal process. 84% of these patients were unaware that they had lost coverage until attending or scheduling an appointment (Kids Win Missouri, Missouri Budget Project & Missouri Coalition of Children's Agencies, 2019).
Montana	7/1/19	Medicaid expansion in Montana was renewed for July 2019 - 2025 with new conditions that made it more difficult for people to apply and stay enrolled in Medicaid (HB0658, 2019). One such policy change was requiring applicants to submit documents proving that they are Montana residents (Katch, 2019).

Ohio		2/1/15	In December 2014, Ohio restarted its annual Medicaid redetermination process. The state mailed out 170,000 12-page paper renewal packets. In the past, renewal packets were mailed out with a stamped return envelope and caseworkers terminated benefits on an individual basis, often after reaching out to the clients. Now packets do not include pre-addressed envelopes or postage and benefits are terminated automatically. More than 1/3 of recipients did not return the packets and had their benefits terminated in February 2015 (Health Policy Institute of Ohio, 2015; Candisky, 2015). A court order reinstated coverage for recipients who lost benefits in early 2015 and required the state to use more specific notices of enrollment termination, use more information to process redetermination, and to create a telephone renewal option (Homewood et. al vs Mccarthy, 2015). However, enrollment numbers continued to drop. Another complication with Medicaid enrollment in Ohio was the Ohio Benefits system, implemented in 2013. By August 2016, all Medicaid and CHIP eligibility determinations were made using this system. In early 2015, Ohio identified 300 defects associated with Ohio Benefits. In July 2018, SNAP and TANF programs were added to the Ohio Benefits system making it much more complicated (Faber, 2020). Hold times to speak to a caseworker reached 2-3 hours (Hancock, 2019). By 2019, there were 1,100 system defects and 1,765 related workarounds, requiring staff to use time-consuming manual steps for routine tasks. System defects included applications that disappeared, incorrect linkage of applicants (e.g. a newborn and an 11-year old child), and inadequate access for enrollees that speak English as a second language (Corcoran, 2020). At the peak of backlogs, in January 2018, there were 68,894 applications that had been processing for longer than the federal limit of 45 days (Faber, 2020).
Oklahoma		8/1/19	In early 2018, Oklahoma passed the HOPE Act, which changed the process for income verification for Oklahoma's Medicaid program. The changes included requiring quarterly verification of income, employment status, residency status, immigration status, financial resources, and enrollment status in other programs. Responses to eligibility requests were to be completed within 10 days. The law required that an independent vendor be hired and that the cost savings from the contract exceed its cost (the Hope Act, 2018). Implementation began on August 1, 2019. Later, another rule was signed that drops enrollees if they fail to keep their address current with the Oklahoma Health Care Authority (Oklahoma Health Care Authority).
Tennessee	11/1/2016 - 3/19/2019		Before 2014, Tennesseans who applied for Medicaid got assistance from local county offices with the help of trained case managers. Tennessee transferred these functions to an all-online, mail, or phone format in January of 2014. The state originally planned to use a new computer system to process eligibility and enrollment, but the system was not operational in 2016 when the state started a 3-phase process to redetermine eligibility for enrollees. The process started

		with Phase 1, which processed renewals that could be completed using SNAP eligibility records. Phase 2 processed renewals for Modified Adjusted Gross Income (MAGI) households based on self-attestation of eligibility. In Phase 3, implemented in November 2016 (Kent and Walton, 2017), over 400,000 enrollees who had not been processed in the first two phases were sent a 49-page paper packet in the mail which they were required to complete in order to maintain enrollment. These paper packets did not conform to federal regulations requiring information to be pre-filled and in-person assistance with forms was not available as required (Coleman, 2019). According to state data, nearly 250,000 children lost coverage -- 84.2% of the children who were sent manual packets. 67.1% of these children were terminated because their guardians did not respond to requests for information. Anecdotally, many of these guardians did not receive the requests or the state failed to process their responses. Even if the state had documents available that confirmed eligibility (e.g. proof of disability), enrollment was terminated if the state did not receive a response. According to a class action lawsuit filed by Medicaid enrollees who lost coverage against the Director of the Division of TennCare (Tennessee's Medicaid program), Tenncare failed to use information already on file to redetermine eligibility, required enrollees to provide irrelevant information (e.g. utility bills and telephone bills), did not reliably maintain address information even when enrollees report change of address to Tenncare, failed to send pre-termination notices, failed to process appeals in a timely manner and improperly refused appeal requests.
Texas	10/1/14	Since October 2014, Texas has checked income eligibility for children more frequently than other states. Texas now checks income for households with children on Medicaid in the 5th, 6th, 7th and 8th months of their enrollment period each year. If the family's income increases over the eligibility limit, they have 10 days to prove that this is a mistake or they lose coverage. If multiple children in the family are enrolled in Medicaid at different times, the eligibility checks could be on completely different timelines (Luthra, 2017; Texas Health and Human Services, 2015). One in three children who lost coverage in 2017 re-enrolled within a year, suggesting that their loss of coverage was due to paperwork issues and not changes in eligibility. About 50,000 Texas children lose Medicaid coverage each year because their families do not submit income verification proof in time (Bureau & Morris, 2019).

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