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Kabir Dasgupta, Keisha Solomon

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# The effect of ending the pandemic-related mandate of continuous Medicaid coverage on health insurance coverage and household economic well-being

Kabir Dasgupta<sup>1</sup> and Keisha Solomon<sup>2</sup>

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<sup>1</sup> Federal Reserve Board of Governors

<sup>2</sup> Department of Economics, Howard University

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## **Abstract**

The Medicaid continuous enrollment provision, which ensured uninterrupted coverage for beneficiaries during the COVID-19 pandemic, was ended in March 2023. This unwinding process has led to large-scale Medicaid disenrollments, as states resumed their standard renewal process to evaluate enrolled individuals' eligibility status. Our analysis investigates whether resumption of states' renewal process has led to an increase in the risk of becoming uninsured for adults aged under 65 and affected their household economic well-being. Using state-month variation in the timing of the first round of disenrollments, we first document a 6-12 percent decline in total Medicaid enrollments after states resumed their renewal process. Next, based on nationally representative samples of adults younger than age 65, we do not find statistically relevant effects on the probability of being without any health coverage. However, looking at different demographic groups, we see a one percentage point increase in the likelihood of becoming uninsured for adults who have a college education but do not have a bachelor's or higher degree.

**Keywords:** Continuous enrollment provision; COVID-19 pandemic; Medicaid; health insurance; policy analysis

**JEL Classification:** I13; I18; I31

## 1. Introduction

The Medicaid continuous enrollment provision of the Families First Coronavirus Response Act of 2020 (FFCRA) required states to suspend their Medicaid’s regular eligibility renewal and redetermination process during the COVID-19 pandemic so that enrolled beneficiaries could have healthcare coverage throughout the public health emergency (Corallo et al., 2021). While the public health emergency (PHE) came to an official conclusion in May 2023, the continuous enrollment provision was ended a little earlier in March 2023 (Ma et al., 2024; US Department of Health and Human Services, 2023).<sup>1</sup> The ending of the COVID-19 pandemic-related continuous Medicaid enrollment provision – also known as the unwinding of the continuous Medicaid enrollment provision – allowed states to resume their standard annual renewal and redetermination process to evaluate individuals’ eligibility for Medicaid coverage. This prompted large-scale Medicaid disenrollments across states beginning in April 2023 (KFF, 2024b).

In this study, we first investigate how the unwinding of the continuous Medicaid enrollment provision affected the changes in total state-level Medicaid enrollments. Additionally, using the Household Pulse Survey (HPS) – one of the US Census Bureau’s frequently fielded nationally representative surveys, we aim to explore whether the large-scale Medicaid disenrollments prompted by the states’ resumption of the renewal process were followed by a significant rise in the risk of being uninsured among the adult population.

According to the US Department of Health and Human Services, in a normal year around 17 million people lose Medicaid or Child Health Insurance Program (CHIP) coverage due to states’ renewal process (Centers for Medicare & Medicaid, 2023).<sup>2</sup> In comparison, the Kaiser Family Foundation’s (KFF) Medicaid Enrollment and Unwinding Tracker estimates that as of the end of July 2024, nearly 24 million people were disenrolled from Medicaid since states resumed their

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<sup>1</sup> The U.S. Department of Health Human Services, Fact Sheet: End of the COVID-19 Public Health Emergency. See <https://www.hhs.gov/about/news/2023/05/09/fact-sheet-end-of-the-covid-19-public-health-emergency.html#:~:text=That%20means%20with%20the%20COVID,the%20expiration%20of%20the%20PHE;> Accessed July 21, 2023. The Consolidated Appropriations Act, 2023, delinked the end of the FFCRA’s Medicaid continuous enrollment condition from the end of the COVID-19 Public Health Emergency

<sup>2</sup> See US Department of Health and Human Services Factsheet - All Hands-On-Deck: Keeping People Covered As States Restart Routine Medicaid Renewals, June 2023. <https://www.medicaid.gov/resources-for-states/downloads/renewals-all-hands-on-deck-fact-sheet.pdf>; Accessed on July 30<sup>th</sup>, 2024.

renewal process in early 2023 (KFF, 2024b).<sup>3</sup> This estimate could be an undercount of the actual number of disenrollments due to a lag in the availability of state-level information. Yet, the KFF's June 2024 estimate of total Medicaid disenrollments substantially exceeds prior projections made by the US Department of Health and Human Services (HHS) and the US Congressional Budget Office (CBO). Nonetheless, the earlier projections indicated that while many disenrolled individuals could transition into other forms of health coverage (such as private healthcare options through employers or the Marketplace), a notable share of the disenrolled group could become uninsured (Hanson et al., 2023).

In an issue brief, prior to the PHE expiry, the HHS (2022) projected that 15 million individuals would lose Medicaid coverage after the PHE expiration. Of the 15 million people with expected coverage loss, the HHS (2022) analysis predicted that around 8 million people would no longer be eligible for Medicaid, but the remaining 7 million individuals could lose due to procedural and administrative reasons. The HHS projections seem comparable to the estimates provided by the CBO. According to the CBO (Hanson et al., 2023), roughly 15.5 million adults aged under 65 were at risk of being disenrolled from Medicaid as the continuous eligibility provisions unwind in 2023 and 2024 (Hanson et al., 2023). Furthermore, the CBO analysis suggested that of those who could be disenrolled, as many as 6.2 million people are likely to become uninsured, while the remaining individuals were expected to transition to other healthcare coverages.

In this study, we first analyze monthly administrative data on Medicaid enrollments from the Centers for Medicare and Medicaid Services (CMS) to estimate the effects of unwinding the continuous enrollment provision on total Medicaid enrollments. Changes in total monthly Medicaid enrollments can be driven by new enrollments, reenrollments, and disenrollments. Therefore, this analysis will allow us to quantify and test whether recent monthly changes in the total Medicaid enrollments were driven by the large-scale disenrollments resulting from states' resumption of their Medicaid renewal process. We perform additional analysis to account for differences in relevant state-specific policies that could affect the disenrollments and related health coverage implications.

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<sup>3</sup> Kaiser Family Foundation Medicaid Enrollment and Unwinding Tracker (KFF tracker) - <https://www.kff.org/medicaid/issue-brief/medicaid-enrollment-and-unwinding-tracker/>; Accessed on July 19, 2024.

Next, using individual-level data from the HPS, we explore the effects of the termination of the continuous enrollment provision on the risk of being uninsured. Additionally, because lack of insurance can be linked to deterioration of economic conditions, we include a measure of economic hardship by using an indicator of experiencing difficulties meeting usual household expenses as an outcome. Our baseline empirical analysis relies on two-way fixed effect regressions (TWFE). We exploit variations in state-level disenrollment start dates to measure the effect of the Medicaid unwinding process on the outcomes of interest. Given the potential empirical concerns associated with TWFE estimators, as discussed in the recent empirical literature (Callaway & Sant'Anna, 2021; de Chaisemartin & D'Haultfoeuille, 2020; Goodman-Bacon, 2021; Sun & Abraham, 2021), we test the consistency in our baseline findings by applying Wooldridge's (2021) new two-way Mundlak regression analysis. Wooldridge's (2021) new difference-in-differences estimator (JW-DID) – often referred to as the extended-TWFE estimator – allows heterogeneity in the treatment effects that the TWFE specifications do not.

Our key findings indicate that the termination of continuous enrollment provision has led to a 6-12-percent decrease in the total Medicaid enrollments across states. Focusing on nationally representative cross-sectional samples of the adult population aged between 18 and 64 from the frequently fielded HPS, we observe a decrease in the likelihood of having Medicaid coverage, which is consistent with the effects observed in the CMS data. However, there is no statistically relevant evidence of an increase in the risk of being uninsured or in economic hardship among the overall adult population aged under 65.

Nevertheless, we find some policy-relevant evidence when looking at various demographic sub-populations. More specifically, across both TWFE and extended-TWFE specifications, we see statistically significant declines in Medicaid coverage among the White population, younger adults (aged 18-25), and adults with some college education but less than a bachelor's degree. People with some college education but less than a bachelor's degree are also more likely to be uninsured as seen in both the empirical specifications.

## 2. The Continuous Enrollment Provision and Policy Implications

Medicaid – a publicly sponsored health insurance program primarily designed for the low-income population – provides low-cost health coverage to about one in five Americans (KFF, 2024a). In the pre-COVID pandemic year of 2019, Medicaid covered about 80 percent of children living in poverty (i.e., living in households with income below the federal poverty line) and about 45 percent of adults living in poverty (Rudowitz et al., 2023). Medicaid is also the primary health insurance program for individuals below 65 years old with disabilities, with Medicaid covering about 40 percent of individuals in this group (Rudowitz et al., 2023).

Medicaid enrollments rose substantially during the pandemic. According to the CMS data, total Medicaid enrollment increased by approximately 23 million individuals between February 2020 (~64 million people enrolled) and March 2023 (~87 million people enrolled) (Centers for Medicare and Medicaid Services, 2023).<sup>4</sup> This increase can be partly attributed to a surge in the number families who gained Medicaid-eligibility due to pandemic-induced job loss and changes in family compositions (US Department of Health and Human Services, 2022). A part of this rise in Medicaid enrollments can also be attributed to the Families First Coronavirus Response Act (FFCRA) of March 2020. For instance, to help states manage the increased enrollment, the FFCRA temporarily expanded the federal government’s share of Medicaid costs (Solomon, 2020). The FFCRA also mandated continuous Medicaid enrollment throughout the PHE period to prevent enrolled individuals from losing coverage, thereby reducing the risk of becoming uninsured, particularly in an economically challenging time.

To maintain Medicaid coverage, states’ standard Medicaid redetermination or renewal processes generally require existing beneficiaries to verify their eligibility status at least once every 12 months. As a result of this renewal process, previously enrolled individuals may lose coverage because of changes in eligibility status that are largely determined by household income, disability status, parenthood, pregnancy status, or age. However, many beneficiaries may also lose Medicaid coverage due to procedural reasons such as lost paperwork, changes in phone numbers or addresses, missed mailings, failure to respond to notices, or processing errors (Corallo et al., 2021;

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<sup>4</sup> June 2023 Medicaid and CHIP Enrollment Trends Snapshot – Centers for Medicare & Medicaid Services. <https://www.medicaid.gov/medicaid/national-medicaid-chip-program-information/downloads/June-2023-medicaid-chip-enrollment-trend-snapshot.pdf>; Retrieved on July 23, 2024.

Nelson et al., 2024).<sup>5</sup> As such, Medicaid disenrollments because of the renewal process may elevate the risk of becoming uninsured for some beneficiaries who may still be eligible for Medicaid (Rudowitz et al., 2023). And this can lead to poorer health as well as lower economic outcomes for those individuals.

Prior studies have documented that Medicaid disenrollments can have important health and economic implications. Using 2016–2019 Medicaid Expenditure Panel Survey (MEPS) data, Corallo et al.'s (2021) analysis shows that roughly two-thirds of people who are disenrolled from Medicaid or Child Health Insurance Program (CHIP) experience short-term disruptions in their health insurance coverage in the year following their disenrollment. Seventeen percent remain uninsured for a full year post-disenrollment.

An earlier study by Tarazi et al. (2017) looks at the effect of a 2005 termination of Tennessee's Medicaid expansion program (TennCare) for over 170,000 beneficiaries. The authors find that the large-scale disenrollments in Tennessee were followed by a 5-percentage point decrease in the likelihood of having any health insurance and a 4-percentage point increase in the likelihood of reporting an inability to see a doctor due to cost-related barriers. Later studies by DeLeire (2019) and Tello-Trillo (2021) corroborate Tarazi et al.'s (2017) findings and provide additional evidence of a reduction in the use of preventative care and an increase in the likelihood of feeling unwell. Using TennCare's 2005 quasi-experimental design, several other studies have shown that Medicaid disenrollments could elevate health risks and add to the financial burden of previously enrolled beneficiaries, especially those who belong to the low-income population (Argys et al., 2017; Ghosh & Simon, 2015; Maclean et al., 2024).

Like Tennessee, there have been other states that introduced restrictions to Medicaid eligibility criteria, resulting in large-scale Medicaid disenrollments (Dague & Ukert, 2023). A few notable examples include disenrollments of around 150,000 beneficiaries in Missouri (2005), 44,000 individuals in Wisconsin (2014), and 17,000 people in Arkansas (2018). Additionally, in 2015,

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<sup>5</sup> Sources: <https://www.communityplans.net/coverage-you-can-count-on/stabilize-coverage-in-medicaid-and-chip/>; FamiliesUSA (2019). The Return of Churn: State Paperwork Barriers Caused More Than 1.5 Million Low-Income People to Lose Their Medicaid Coverage in 2018. [https://familiesusa.org/wpcontent/uploads/2019/09/Return\\_of\\_Churn\\_Analysis.pdf](https://familiesusa.org/wpcontent/uploads/2019/09/Return_of_Churn_Analysis.pdf); <https://www.kff.org/medicaid/issue-brief/medicaid-enrollment-churn-and-implications-for-continuous-coverage-policies/>



Hawaii excluded a substantial share of migrants from countries belonging to the Compact of Free Association from the state's Medicaid program (Akee & Halliday, 2020).

Unlike the previously studied Medicaid disenrollments triggered by state-level exclusions and restrictions imposed on eligibility conditions, the unwinding of the continuous enrollment provision or the subsequent resumption of the states' renewal process reflects the return to normal operations. As a result, starting from April 2023, states were able to terminate coverage for individuals who were no longer eligible for Medicaid. The disenrolled individuals are expected to transition to another form of health coverage such as employer-sponsored health care or private health coverage options including the Affordable Care Act Marketplace. Additionally, several states have implemented various policies and adopted several strategies to promote continued coverage and reduce the risk of becoming uninsured. These include increasing the share of automatic renewals, regular follow-ups with beneficiaries regarding the renewal process, adoption of Medicaid expansion, providing 12-month extension postpartum coverage and continued coverage for children (Brooks et al., 2023). These measures, however, varied across states. Due to the possibility of various administrative barriers possibly aggravated by a rise in residential relocations during the pandemic and information gaps, many states had also opted to delay procedural disenrollments for existing beneficiaries by one or more months to prevent loss of coverage for individuals who might still be eligible for Medicaid.<sup>6</sup>

Nevertheless, according to the KFF unwinding tracker, over two-thirds of the total Medicaid disenrollments that occurred until September 2024 since the unwinding process began were due to procedural terminations.<sup>7</sup> Therefore, it is important to assess whether the unwinding process triggered a conspicuous rise in the overall share of uninsured adults.

Based on a representative sample of low-income adults (aged 19-64) in four southern states (Arkansas, Kentucky, Louisiana, and Texas), McIntyre et al., (2024) show that 6 months into

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<sup>6</sup> Information retrieved from online information released by Medicaid.gov on August 2, 2024. See "State Option to Delay Procedural Disenrollments"; <https://www.medicaid.gov/resources-for-states/coronavirus-disease-2019-covid-19/unwinding-and-returning-regular-operations-after-covid-19/state-option-to-delay-procedural-disenrollments/index.html#:~:text=One%20of%20the%20key%20strategies,state%20conducts%20targeted%20renewal%20outreach.>

<sup>7</sup> Kaiser Family Foundation Medicaid Enrollment and Unwinding Tracker (KFF tracker) - <https://www.kff.org/medicaid/issue-brief/medicaid-enrollment-and-unwinding-tracker/>; Accessed on September 14, 2024.

unwinding, around 12.5 percent of adults reported exiting the Medicaid program and roughly half of those who exited the program were uninsured. In a separate analysis, Bensken et al. (2024) use electronic health record information from a nationwide network of community health organizations to analyze the implications of the unwinding process for a cohort of adult Medicaid beneficiaries with an ambulatory or telehealth visit. The authors find that around 17 percent of the adult sample (575,170 individuals) were disenrolled from Medicaid. Furthermore, disenrollment rates were higher among younger adults, African American patients, lower-income individuals, and those with higher healthcare utilization and poorer health conditions.

However, these aforementioned studies that examine the effect of Medicaid disenrollment provisions may not represent the aggregate effects observed across the adult population as a whole. While it may not be surprising that the large-scale Medicaid disenrollments may affect coverage for a share of previously enrolled beneficiaries, it is important to analyze whether the affected population represents a notable share of the US adult population. To that end, an earlier analysis published in 2023 and conducted by CBO staff projected a 1 percentage point increase in the uninsurance rate between 2023 (8.3 percent) and 2024 (9.3 percent) among adults younger than 65 (Hanson et al., 2023). In comparison, to our knowledge, our analysis is the first to present an analysis using actual survey data to test those projections.

### **3. Data**

To study how the overall Medicaid enrollments varied before and after the first round of disenrollments took place after states resumed their renewal and redetermination process, we rely on the CMS data on Medicaid enrollments that are available at the monthly level for each state. To be consistent with our individual-level analysis using the Household Pulse Survey, we focus on a period from August 2020 to March 2024.

The Household Pulse Survey is one of the US Census Bureau's ongoing experimental data products that was designed to measure relevant socio-economic issues facing US households. The Household Pulse Survey (HPS) is a 20-minute online interview that started collecting information in April 2020 after the onset of the COVID-19 pandemic. While at the beginning, the HPS was conducted on a weekly basis, the survey period was extended gradually over time. As of 2024, the HPS is conducted monthly.

Apart from several key socio-economic and demographic characteristics, the HPS documents a wide range of information to identify relevant challenges experienced by US households and their response to the broader economic conditions. More specifically, the survey documents pandemic-induced health and labor market outcomes, usage and enrollment in pandemic-related benefits as well as in other social welfare programs such as the Supplemental Nutrition Assistance Program and Social Security benefits, households' consumption and expenditure behavior, housing arrangements, health insurance coverage, etc.

To our knowledge, the HPS is one of the few sources that provide high-frequency data on US adults' health insurance coverage along with information on their state of residence. This allows us to analyze the direct and spillover effects of the large-scale Medicaid disenrollments associated with the unwinding of the continuous enrollment mandate. In particular, the HPS series of healthcare coverage variables include information on having insurance through employer or union, purchased insurance (including marketplace), Medicare, Medicaid, military and veterans' health care programs (known as the TRICARE and VA insurance), Indian health service, and other health coverage. Based on these variables, we create several binary indicators that are used as outcome variables in our analysis. First, we construct an indicator of having Medicaid insurance. To study the likelihood of not having any health coverage (or being uninsured), we create an indicator that equals 1 if a person responds "no" to all the HPS-based health insurance options, otherwise 0.

To see if the large-scale disenrollments also led to the transition into other private healthcare options, we create two additional indicators. The first indicator is derived from the question that asks respondents whether they have purchased insurance. The other binary indicator is a composite measure intended to represent whether a person has private health insurance. Specifically, the indicator equals 1 if a survey participant responds "yes" to at least one of the three questions related to insurance coverage through employer or union, purchased insurance, or TRICARE. Finally, one of the objectives of our analysis is to investigate whether the unwinding process had a significant effect on the adult population's experiences of economic hardship. To that end, we create a dichotomous indicator using the HPS information on whether a person's household had difficulty in paying usual household expenses including but not limited to food, rent or mortgage, car payments, medical expenses, student loans, and so on. In particular, the

binary indicator equals 1 if a respondent reported their experience of meeting with their usual household expenses in the week prior to the survey was “somewhat” or “very” difficult. It is important to note, that for all our outcome variables, we exclude missing information from our analysis.

A major concern with the HPS data is that the surveys generally have a low response rate. For instance, while the response rates for the first two surveys conducted in the year 2020 were around 4 percent, the rates observed in more recent surveys in 2024 hovered around 6-7 percent.<sup>8</sup> This may cast doubt on the reliability of empirical estimates derived from the HPS data. Therefore, it is important to use the survey’s person-level weights for individual-level analysis, which are constructed to address some of the concerns related to non-response and under-coverage bias.

In Table 1, we report summary statistics (using person-level weights) of the overall adult population as well as for individuals who report being Medicaid beneficiaries and those who are not covered by the Medicaid program. The estimates are provided based on surveys prior to the first round of disenrollments. Looking at the individual-level information including demographic characteristics, employment, Medicaid coverage status, and family income, the weighted shares from the HPS do not seem to substantially vary from measures generated by other well-established representative surveys such as the Census Bureau’s Current Population Survey or the American Community Survey (ACS). For instance, according to the ACS data, the share of individuals with Medicaid in 2020-2022 averaged 18.5 percent. In comparison, the same share observed in the HPS data was around 18 percent. When classifying the HPS sample by whether or not individuals have Medicaid insurance, we see that the shares of individuals belonging to the African American population, Hispanic population, populations with lower family income, and lower educational attainment are visibly higher among the Medicaid beneficiaries than among the non-beneficiaries. Medicaid beneficiaries also seem to have lower shares of married and employed adults.

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<sup>8</sup> See Household Pulse Survey Technical Documentation, Source and Accuracy Statements. <https://www.census.gov/programs-surveys/household-pulse-survey/technical-documentation/source-accuracy.2024.html#list-tab-1670696597>; Accessed on August 20, 2024.

We further test the quality of the HPS data by performing separate dynamic difference-in-differences analyses using both the CMS as well as the HPS data on Medicaid coverage to test if the trends observed before and after the first round of disenrollments are qualitatively similar across the two data sources. In other words, comparing the HPS data to the CMS' population-level estimates of Medicaid enrollments may help us examine the validity of the HPS-based findings in the subsequent analysis given the possibility of gaps in information about Medicaid coverage between self-reported data and administrative records (Ding et al., 2024). Finally, to ascertain the validity of our key empirical findings derived from the HPS data, we present additional descriptive evidence using the Federal Reserve Board's Survey of Household Economics and Decisionmaking (SHED) (Board of Governors of the Federal Reserve System, 2024). The annual SHED measures the economic well-being of US households and identifies potential risks to their finances based on a nationally representative sample of adults. Like the HPS, the annual SHED incorporates detailed health insurance coverage information including various private and public healthcare options.

Finally, we perform a comprehensive online search to determine the dates when the first round of disenrollments took place in each state. While the CMS had released information on the months when each state was expected to start its renewal process and the anticipated dates of the first round of terminations, we performed a further comprehensive review of state-level online resources to identify the exact dates when the first round of disenrollments took place. This is because, for each survey wave, the HPS provides the dates when their surveys are fielded. As such, having the knowledge of the precise dates when the first round of disenrollments occurred allows us to construct our pre- and post-treatment indicator more precisely.

In Appendix Table A.1, we provide the list of dates when the renewal process was resumed and the dates when the first round of terminations occurred in each state.<sup>9</sup>

#### **4. Identification Strategy**

To investigate the health coverage implications of the large-scale Medicaid disenrollments that occurred due to states' resumption of the renewal process, our baseline analysis relies on two-way

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<sup>9</sup> A detailed list of our online information sources the information provided is available upon request.

fixed effects (TWFE) regressions. We first look at the state-level monthly data from the Centers for Medicare and Medicaid Services (CMS) to track variations in total Medicaid enrollments before and after the first round of disenrollments started in each state.

Next, we use the individual-level data from the HPS to test if the adult population aged under 65 is exposed to a greater risk of being uninsured and economic hardships since the large-scale Medicaid disenrollments commenced in each state. For the individual-level analyses, our baseline model is:

$$Y_{ist} = \beta_0 + FirstDisenrollments'_{st} \beta_1 + X_{st} \beta_3 + Z_{ist} \beta_4 + \tau_t + \gamma_s + \varepsilon_{ist} \quad (1)$$

where  $Y_{ist}$  is a binary indicator of whether an individual  $i$  from state  $s$  has any health insurance coverage at time  $t$ . As noted in the Data section, we further explore some underlying mechanisms by looking at indicators of other health insurance coverage, including private health insurance coverage and purchased health insurance coverage. To study the economic implications of the unwinding process, we consider our binary indicator of economic hardship (see previous section). Depending on the availability of all our outcome variables, the HPS data used in our analysis is comprised of 66 survey waves from August 2020 and March 2024. The main explanatory variable is represented by a dichotomous indicator that equals 1 from the month when state  $s$  had its first round of disenrollments.

We also control for various state-specific characteristics in our regressions (denoted by  $X_{st}$ ). In general, the first round of disenrollments did not start immediately after states resumed their renewal process. This is due to the time provided to enrollees to respond to the states' requests for information used to assess individuals' eligibility after receiving their renewal notices. However, we include a binary indicator that equals 1 from the first month when each state initiated its renewal process. This is to account for possibilities of changes in enrollments prior to a state's Medicaid agency's decision to renew individuals' coverage. For instance, some Medicaid beneficiaries (e.g., those who believe that they are no longer eligible to be covered under Medicaid) may decide to leave the program upon receiving renewal notices from their corresponding state's Medicaid agency if they think they are going to eventually lose their coverage.

Many states paused procedural terminations in different months since March 2023, to avoid disenrolling individuals who could have lost Medicaid coverage due to failure to complete their

renewal process or other procedural reasons despite being eligible for the public health insurance program.<sup>10</sup> Among the state-level controls in equation (1), we also include a binary indicator for months when a state paused some or all of its procedural terminations. Additionally, because states' decisions to resume the renewal process after the PHE expiration may also be correlated with other pandemic-related policies, we control for state-specific indicators of termination of the Supplemental Nutrition Assistance Program (SNAP) Emergency Allotments that are provided to SNAP beneficiaries to address food-related challenges during the pandemic (Dasgupta & Plum, 2023). Finally, using state-level monthly data from Local Area Unemployment Statistics, the Bureau of Labor Statistics' (BLS), we control for state-level monthly unemployment rates to account for states' economic conditions.

Additionally, for further precision of our regression estimates, we control for several individual-level characteristics (denoted by the vector  $Z_{ist}$ ) including indicators of sex, race, ethnicity, educational attainment, marital status, and employment. We also include continuous measures of number of children in the household, the number of adults in the household, and age (in years). Finally, we include state ( $\gamma_s$ ) and time in month ( $\tau_t$ ) fixed effects.

For the baseline analysis of total state-level Medicaid enrollments, we estimate a model similar to equation (1) using the CMS's monthly data collected from all states and the District of Columbia. The main outcome variable is a continuous measure of total Medicaid enrollments in each state per month within the study period. As discussed in section 3, we run a similar analysis using the individual-level indicator of public health insurance coverage in Pulse surveys to verify if the overall trends in Medicaid enrollments before and after the first round of disenrollments took place were qualitatively consistent with each other.

In all models, standard errors are clustered at the state level. We use 51 clusters to consistently estimate the standard errors (Cameron & Miller, 2015).

Recent econometrics studies show that the TWFE estimates can be biased when there is staggered treatment adoption and treatment effects are heterogeneous over time and across treated groups (Callaway & Sant'Anna, 2021; de Chaisemartin & D'Haultfoeuille, 2020;

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<sup>10</sup> See CMS "Medicaid and CHIP National Summary of Renewal Outcomes – March 2024 and National Summary to Date", June 2024. Slide 6. Retrieved from <https://www.medicaid.gov/resources-for-states/downloads/march-2024-national-summary-renewal-outcomes.pdf>, on July 7, 2024.

Goodman-Bacon, 2021; Sun & Abraham, 2021). Thus, we also estimate an “extended” two-way fixed effects model proposed by Wooldridge (2021) that circumvents the empirical issues associated with TWFE regressions by allowing for heterogeneous treatment effects over time and across the timing group. Specifically, Wooldridge (2021) proposes estimating ordinary least square regressions that include individual (or cohort) and time fixed effects, along with interaction terms for all combinations of individual and time fixed effects.<sup>11</sup> The extended-TWFE regression eliminates confounding due to staggered treatment adoption and heterogeneous treatment effects by omitting problematic comparisons between later treated states and earlier treated states.<sup>12</sup>

## **5. Results**

To investigate the aggregate effect of the effect of states’ resumption of their Medicaid renewal processes, we examine the effect of resuming these processes on state-level Medicaid enrollment, and then we study the effect of these processes on individuals’ health insurance coverage and expense-related difficulties.

### **5.1 Regression Analysis of State-level Medicaid Enrollments**

Table 2 reports the results of the TWFE and extended-TWFE regression analyses estimating the effect of states’ resumption of their Medicaid renewal process on monthly state-level Medicaid enrollments using the CMS data. Using the TWFE specification, we find that states’ resumption of their Medicaid renewal process reduces Medicaid enrollment by an average of approximately 100,500 individuals. On average, this decline in the Medicaid enrollments is equivalent to 6.4 percent of the average Medicaid enrollment per state (~1.6 million individuals) observed prior to the disenrollments.<sup>13</sup> The coefficient estimate is statistically significantly different from zero at the 5 percent level. The magnitude of the coefficient estimate using Wooldridge's (2021) extended-TWFE is larger than our main TWFE results, i.e., approximately 188,000, which is close to 12 percent of the average Medicaid enrollment per state before the disenrollments

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<sup>11</sup> For additional details, please see Wooldridge (2021).

<sup>12</sup> We use Rios-Avilla et al.’s (2024) user-written Stata program “JWDID” to estimate the extended-TWFE specifications.

<sup>13</sup> Our main findings do not vary qualitatively when we consider the CMS data on state-month Medicaid enrollments as share of annual state population estimates.



began. Additional state-level Medicaid policies could contribute to differential effects of states' resumption of their Medicaid renewal process across states with and without these policies. Particularly, the Affordable Care Act expansion of the eligibility criteria for Medicaid coverage, including increases in income threshold and removal of parental status, in some states could reduce the likelihood of individuals in such states being disenrolled from Medicaid during the renewal process (Congressional Research Service, 2023). We explore whether there is heterogeneity in the effect of states resuming their Medicaid renewal process by states' Medicaid expansion status and by the number of procedural waivers allowed by states to reduce large-scale disenrollments. To examine these effects in our regression models, we add controls for interactions between states' Medicaid resumption of renewal process status and their additional Medicaid policies. Table 2 reports the results. The interaction term in each model is positive. These findings suggest that the negative effect of states' resumption of their Medicaid renewal process is larger among states without waivers and those that did not expand their Medicaid eligibility.

## **5.2 Regression Analysis of Individual-level Insurance Coverage and Experiences of Economic Hardship**

We first use the HPS sample to estimate dynamic trends in individuals' Medicaid coverage before and after the unwinding process to evaluate if the HPS data generate qualitatively similar population-level trends observed in the CMS data. We graphically present the dynamic trends obtained from both the data sources in Figure 1. Considering the month prior to the first round of any disenrollments ("treatment") as the reference period, we do not see any statistically significant differences in the Medicaid coverage trends in either of the two surveys. In the post-treatment period, both datasets reveal a noticeable decline in overall Medicaid coverage.

Table 3 reports the average treatment effects obtained from the estimation of the TWFE and extended-TWFE regression analyses estimating the effect of states' resumption of their Medicaid renewal process on individual-level health insurance coverage and expense difficulties. Using TWFE regression analysis, we find that states' resumption of their Medicaid renewal process reduces the probability of having Medicaid by 1.4 percentage points, which is equivalent to 7.8 percent of the sample mean. The coefficient estimate is statistically distinguishable from zero at the 10-percent level. While the magnitude of the coefficient estimate using Wooldridge's (2021)

extended TWFE is very similar to our main TWFE results, i.e., 1.3 percentage points, the coefficient estimate is not statistically distinguishable from zero.

Based on the extended-TWFE specification, we also provide the average treatment effects on the likelihood of having Medicaid coverage in each group of states that started their first round of disenrollments on the same date in Appendix Table A.1. Consistent with our overall results, the coefficient estimates are negative across most groups and are strongly statistically significant (at the 1 percent level) for states that initiated their disenrollments at the beginning of April and June and at the end of May.

In Table 3, we find no statistically significant evidence that states' resumption of their Medicaid renewal process is associated with a significant uptick in the propensity to have any other forms of health insurance, private insurance, or purchased health insurance. These findings are consistent across both the TWFE and extended-TWFE specifications. For the likelihood of experiencing expenditure difficulties, the coefficient estimate on state-level Medicaid resumption is not statistically distinguishable from zero and is very small (i.e., 0.001). The corresponding point estimate from the extended-TWFE specification also shows no statistically significant evidence regarding expense related difficulties.

While our results in Table 3 indicate that the resumption of the states' renewal process may not have significantly increased the share of uninsured individuals in the overall adult population, the repeated cross-sectional HPS samples are unable to capture coverage implications for the smaller population of disenrolled adults who were previously covered under the Medicaid program. Such analysis can in fact be facilitated by longitudinal data that tracks an individual's health insurance coverage status over time. It is likely that while the overall adult uninsurance rate may not have increased after states resumed their renewal process, there might be a significant uptick in the share of uninsured individuals among those who were previously enrolled in Medicaid (e.g., see Bensken et al., 2024).

We use the health insurance coverage information in the annual SHED data from the years 2021-2023 for additional confirmation, which is graphically presented in Appendix Figure A.1. It is important to note that the SHED is conducted during the fall of each year. As such, the 2023 SHED should be able to incorporate the survey participants' health insurance coverage

information after the continuous enrollment provision was ended. Comparing the shares of adults (aged under 65) with Medicaid insurance, we find that while the share increased by 1 percentage point from 2021 to 2022 (17.3 percent to 18.3 percent), the overall share declined marginally by 0.3 percentage points between 2022 and 2023. However, consistent with our Pulse survey findings, we do not see any change in uninsurance rates between the 2022 and 2023 surveys. However, based on the respondents who were surveyed in consecutive years and reported having Medicaid insurance in the previous survey, we see that the share of individuals with no Medicaid rose from 15 percent to 20 percent between 2022 and 2023. Additionally, the share of individuals with no insurance also increased from 6 percent to 9 percent.<sup>14</sup> To this end, it might be the case that the increase in the share of uninsured individuals among the disenrolled Medicaid beneficiaries might not be a notable share of the overall US adult population.

There are differences in Medicaid coverage by sociodemographic groups (Rudowitz et al., 2023). As such, we also estimate whether there is heterogeneity in the effect of the resumption of Medicaid renewal processes across educational attainment, age group, and race/ethnicity. To explore these effects, we stratify our sample into subgroups for educational attainment (high school or less, some college, and bachelor's degree or higher), age group (ages 18-25, ages 26-35, ages 36-54, and ages 55-64), and race/ethnicity (non-Hispanic White, non-Hispanic African American, and Hispanic). We report the regression coefficient estimates derived from TWFE and extended-TWFE specifications along with their corresponding 95 percent confidence intervals in Table 4.

We find evidence of heterogeneous effects across sociodemographic characteristics. In terms of education, there is no statistically significant evidence that states' resumption of their Medicaid renewal processes affects changes in insurance coverage and expense difficulties among individuals with high school or less educational attainment. Among individuals with a bachelor's degree or higher, results from the extended-TWFE regression analyses indicate that states' resumption of their Medicaid renewal processes reduces the likelihood of having Medicaid by 0.7 percentage points. However, the coefficient estimate is weakly significant at the 10 percent

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<sup>14</sup> Since the dates of states' resumption of the renewal process and the renewal dates for enrolled individuals can vary across months, some Medicaid-enrolled participants in the 2023 SHED may not have undergone the renewal process during the time of the survey. As such, the shares portrayed in Figure A.1 may not accurately represent the coverage implications of the end of the continuous enrollment mandate.

level. For individuals with some college education, TWFE and extended-TWFE regression results indicate that states' resumption of their Medicaid renewal processes reduces the likelihood of having Medicaid by 2.2-3.0 percentage points. Additionally, among this subgroup, according to our TWFE and extended-TWFE models, the likelihood of being uninsured increases by 0.1-0.7 percentage points (significant at the 10 percent level).

In analyses looking at different age groups, we find no evidence to indicate that states' resumption of their Medicaid renewal processes affects changes in insurance coverage and expense difficulties among individuals ages 26-35 and 36-55. Results from TWFE and extended-TWFE models show that states' resumption of their Medicaid renewal processes reduces the likelihood of having Medicaid coverage by 8.5-10.1 percentage points among individuals ages 18-25. The coefficient estimate is statistically significant at the 1 percent level. The magnitude of the coefficient estimate using Wooldridge's (2021) extended TWFE is very similar to our main TWFE results. However, for the younger adults (ages 18-25), there is no statistically significant evidence to indicate that states' resumption of their Medicaid renewal processes affects changes in the probability of being uninsured or experiencing expense difficulties. Interestingly, for older adults of ages 55-64, TWFE and extended-TWFE results indicate an increase in the likelihood of experiencing expenditure difficulties by 19-20 percentage points.

Following the first round of disenrollments in states, the likelihood of having Medicaid coverage decreases by 1.1 and 4.0 percentage points among White and African American individuals, respectively. Among individuals in these two racial/ethnic groups, we find no evidence that states' resumption of their Medicaid renewal process changes the propensity to lack health insurance coverage or experience expenditure difficulties. Among Hispanic Americans, while the TWFE regression estimate indicate a reduction in the likelihood of lacking health insurance coverage by 3 percentage points, we do not find any statistically relevant evidence in the extended-TWFE specification.

## **6. Conclusion**

This study contributes to a growing literature that examines the effect of the Medicaid program's disenrollment policies that could cause Medicaid beneficiaries to abruptly lose their coverage. Previous studies find that when a state implements Medicaid disenrollment policies there is a

reduction in individuals having Medicaid coverage and any health insurance (Corallo et al., 2021; Tarazi et al., 2017). However, these studies investigate the effect of Medicaid occurring in states separately, e.g., Tennessee and Missouri. Thus, it is unclear how national-level Medicaid disenrollment provisions resulting from the ending of the COVID-19 pandemic-related mandate of continuous Medicaid enrollment – often referred to as Medicaid unwinding – could affect both Medicaid coverage and overall health insurance coverage.

In this paper, we investigate the effect of Medicaid unwinding on Medicaid and other forms of health insurance coverage and economic security. First, we utilize data from the Centers for Medicare and Medicaid Services to examine the effect of Medicaid unwinding on state-level Medicaid enrollment. Second, we use nationally representative data from the U.S. Census Bureau's Household Pulse Survey to gain a deeper understanding of the effects of the termination of the continuous enrollment provision on the risk of losing Medicaid coverage and being uninsured.

Our results indicate that the Medicaid unwinding process reduced the number of monthly state-level Medicaid enrollees and individuals' likelihood of having Medicaid coverage. Our finding of a negative effect of states' resumption of Medicaid renewal processes on Medicaid coverage among the overall sample appears to be more pronounced among White as well as African American people and individuals with some college education and younger adults of ages 18-25. However, we do not find statistically significant evidence that the Medicaid unwinding process affected uninsurance, private insurance, and economic security for the overall adult population. In this context, it is also important to note that our analysis relies on self-reported survey data. Ding et al. (2024) discuss that a substantial share of Medicaid beneficiaries may not be aware that they have health insurance coverage. The authors in fact find evidence that the gap between administrative records and self-reported survey data on Medicaid coverage (known as "Medicaid undercount") likely increased during the pandemic. As such, the effect of ending the continuous coverage provision on uninsurance rate based on survey data may be smaller than anticipated. To that end, our analysis motivates an important scope for future research to complement and verify our findings using more accurate administrative data and address some of the data-related concerns associated with self-reported surveys. Additionally, while our study looks at the

shorter-term effects, further analysis could examine the lagged effect of Medicaid unwinding on uninsurance and other measures of economic challenges.

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## Table and Figures

Table 1. Summary statistics of the overall population and populations classified by Medicaid coverage prior to the Medicaid disenrollment

	Overall	Not under Medicaid coverage	Has Medicaid
Male	0.49	0.51	0.36
White	0.74	0.77	0.66
African American	0.13	0.11	0.20
Hispanic	0.19	0.17	0.23
Education - High school or less	0.37	0.31	0.54
Education - Some college	0.31	0.31	0.34
Education - Bachelor's degree or higher	0.32	0.38	0.13
Married	0.53	0.58	0.36
Employed	0.66	0.74	0.42
Family income <= \$50K	0.38	0.30	0.78
Family income \$50-100K	0.30	0.33	0.17
Family income \$100-200K	0.24	0.27	0.04
Family income >= \$200K	0.09	0.10	0.01
Medicaid insurance	0.18	-	-
Has multiple insurance coverages	0.25	0.21	0.49
Number of household members	3.32	3.22	3.59
Number of children in household	0.80	0.72	1.09
Age in years	42.06	42.29	41.88
Observations	3591552	2114388	338815

*Note:* The above table reports the sample means and proportions of various socio-economic and demographic characteristics. The estimates are calculated using person-level weights. The differences between the means and the proportions for those covered by Medicaid and those who are not covered by Medicaid are statistically significant across all the variables considered in the above table.

Table 2 – Changes in Medicaid Enrollment Levels After Continuous Enrollment Provision Ended in States

Variables	(1) State & Time FE	(2) FEs + Controls	(3) CP End × Expansion	(4) CP End × Waivers	(5) ETWFE
End of continuous enrollment provision	-105131.638** (49282.285)	-100538.216** (43139.253)	-145495.268** (63712.329)	-126832.159** (52244.431)	-188046.208** (78378.558)
Group 1 (April 2023)					-176003.653** (68158.581)
Group 2 (May 2023)					-156586.025** (76843.299)
Group 3 (June 2023)					-263009.127** (110141.707)
CP End × Waivers (7-10)				46792.346 (28131.089)	
CP End × Waivers (>10)				79901.969 (54121.089)	
CP End × Medicaid Expansion			55573.960 (36078.573)		
Observations	2,091	2,091	2,091	2,091	1795
State FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Controls	-	Yes	Yes	Yes	-
Sample mean (Enrollments per state)	1570891	1570891	1570891	1570891	1570891

*Note:* The binary indicator of the end of continuous enrollment provision equals 1 when the first round of disenrollments started in each state. Controls include state-level monthly unemployment rates, indicators of the first date at which the renewal processing began, state-level pauses on procedural terminations, and end-of-emergency allotments for SNAP. Robust standard errors are clustered on the state level and reported in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 3 – Changes in the Likelihood of Being Enrolled in Medicaid After Continuous Enrollment Provision Ended in States

	Has Medicaid		Has purchased insurance		Has private insurance		Has no insurance		Expense difficulties	
	FEs + Controls	ETWFE	FEs + Controls	ETWFE	FEs + Controls	ETWFE	FEs + Controls	ETWFE	FEs + Controls	ETWFE
End of continuous enrollment	-0.014* (0.008)	-0.013 (0.008)	0.011 (0.009)	-0.001 (0.005)	0.013 (0.009)	0.002 (0.005)	-0.004 (0.004)	0.001 (0.005)	0.001 (0.008)	0.005 (0.005)
Observations	2,126,677	2754	2,154,636	2754	2,773,533	2754	2,326,703	2754	2,596,609	2754
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic characteristics	Yes	-	Yes	-	Yes	-	Yes	-	Yes	-
Other controls	Yes	-	Yes	-	Yes	-	Yes	-	Yes	-
Sample Mean (pre-treatment)	0.183	0.183	0.208	0.208	0.594	0.594	0.105	0.105	0.366	0.366

*Note:* FE denotes fixed effect. All regressions are weighted using the person-level weight from the Household Pulse Survey. Demographic variables include state-survey proportions of different age groups, male, racial and ethnic groups, different levels of educational attainment, being married, employment and average household size. Other controls include indicators of the first date at which the renewal processing began, state-level pauses on procedural terminations, and end of emergency allotments for SNAP. Robust standard errors are clustered on the state-level and reported in parentheses. For the ETWFE regressions, we consider weighted sample means the outcome variables for adults aged 18-64, calculated by each survey wave and state. While the ETWFE regressions based on the individual-level data generate similar findings, the condensed sample is a more efficient approach. Robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Figure 1: Event Analysis using CMS and HPS Measures of Medicaid Enrollment

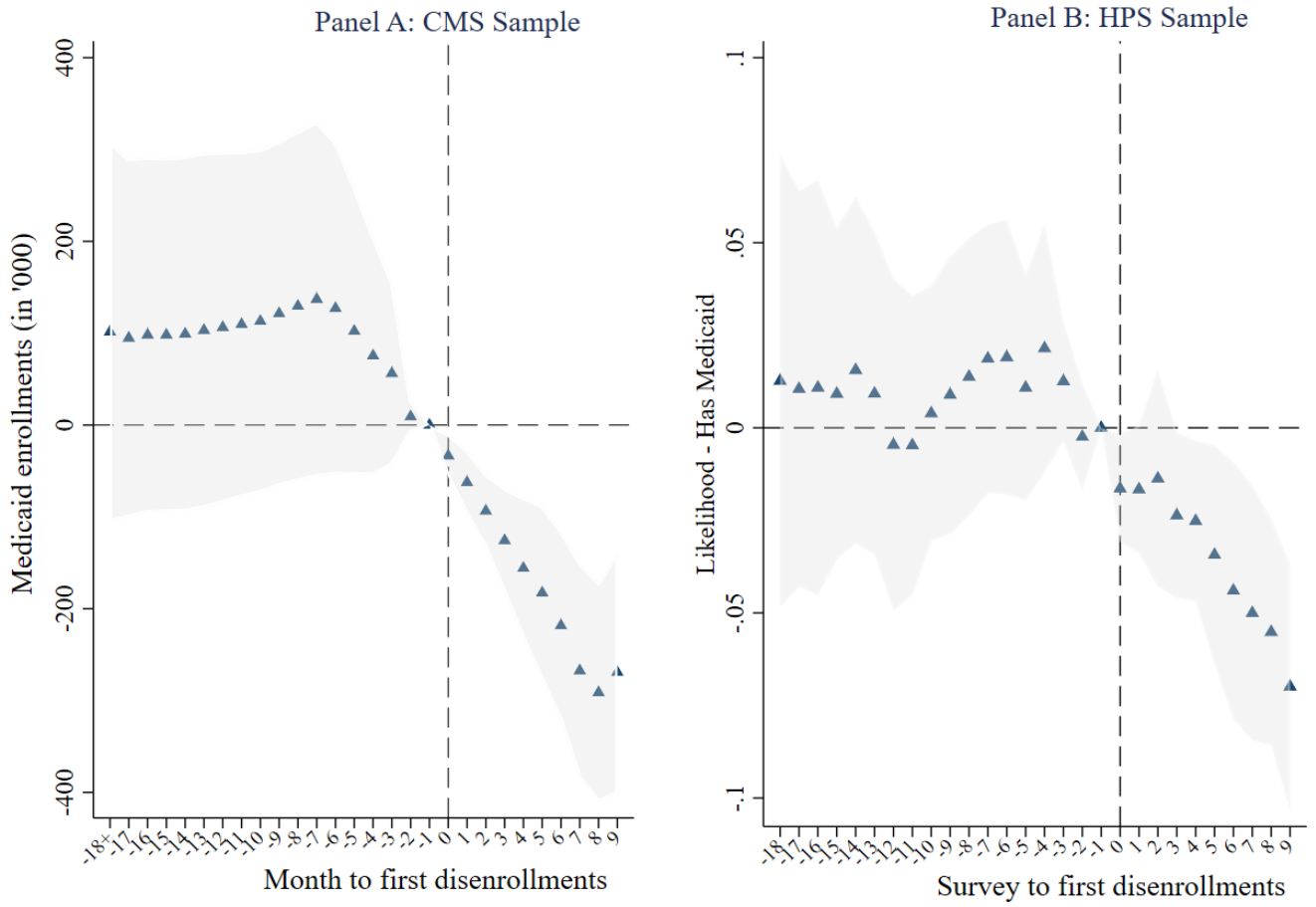


Table 4– Point estimates of the effects of Medicaid disenrollments on insurance coverage and economic hardship by demographic groups

	Two-way fixed effects			JWDID		
	Medicaid	No insurance	Expense difficulties	Medicaid	No insurance	Expense difficulties
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Educational attainment</i>						
HS or less	-0.013 [-0.038 - 0.012]	-0.013 [-0.028 - 0.003]	0.001 [-0.024 - 0.025]	-0.009 [-0.061 - 0.043]	-0.007 [-0.031 - 0.016]	0.012 [-0.013 - 0.037]
<i>N</i>	382265	421208	489013	2754	2754	2754
Some college	-0.022*** [-0.034 - -0.010]	0.007* [-0.001 - 0.014]	0.012 [-0.007 - 0.030]	-0.030*** [-0.049 - -0.011]	0.010* [0.000 - 0.021]	0.000 [-0.018 - 0.019]
<i>N</i>	918124	1015132	1138130	2754	2754	2754
Bachelor's or higher	-0.004 [-0.009 - 0.001]	-0.002 [-0.007 - 0.003]	-0.004 [-0.011 - 0.003]	-0.007* [-0.014 - 0.000]	0.001 [-0.004 - 0.006]	0.007 [-0.003 - 0.018]
<i>N</i>	1605019	1818347	1974404	2754	2754	2754
<i>Age groups</i>						
18-25 years	-0.101*** [-0.148 - -0.054]	0.019 [-0.021 - 0.059]	-0.042 [-0.100 - 0.015]	-0.085*** [-0.127 - -0.044]	0.007 [-0.047 - 0.061]	-0.013 [-0.067 - 0.041]
<i>N</i>	94885	99325	125737	2754	2754	2754
26-35 years	-0.007 [-0.033 - 0.019]	-0.007 [-0.024 - 0.010]	0.014 [-0.012 - 0.039]	-0.002 [-0.032 - 0.028]	0.003 [-0.017 - 0.024]	0.013 [-0.013 - 0.038]
<i>N</i>	400,574	420818	477299	2754	2754	2754
36-54 years	-0.001 [-0.021 - 0.018]	-0.011** [-0.021 - -0.001]	-0.005 [-0.028 - 0.018]	0.003 [-0.012 - 0.018]	-0.001 [-0.010 - 0.007]	0.000 [-0.017 - 0.018]
<i>N</i>	1059286	1151576	1274655	2754	2754	2754
55-64 years	-0.012 [-0.034 - 0.009]	0.003 [-0.011 - 0.016]	0.019** [0.004 - 0.034]	-0.016* [-0.034 - 0.002]	0.005 [-0.005 - 0.015]	0.020** [0.003 - 0.037]
<i>N</i>	571932	654984	718918	2754	2754	2754
<i>Racial or ethnic groups</i>						
White	-0.011** [-0.020 - -0.002]	0.002 [-0.003 - 0.008]	0.010 [-0.007 - 0.027]	-0.016* [-0.032 - 0.001]	0.001 [-0.007 - 0.010]	0.010 [-0.002 - 0.022]
<i>N</i>	2203551	2481763	2716612	2754	2754	2754
African American	-0.040*** [-0.064 - -0.015]	-0.000 [-0.023 - 0.023]	-0.031 [-0.068 - 0.007]	-0.044 [-0.166 - 0.077]	0.005 [-0.052 - 0.062]	0.103** [0.018 - 0.189]
<i>N</i>	205110	224547	261045	2754	2754	2754
Hispanic	-0.016 [-0.068 - 0.037]	-0.030* [-0.064 - 0.005]	-0.007 [-0.027 - 0.012]	0.027 [-0.015 - 0.070]	0.017 [-0.011 - 0.045]	-0.070** [-0.132 - -0.009]
<i>N</i>	252240	277027	319179	2754	2754	2754

Note: The estimates reported in the above table are based on similar specifications used in Table 2. The 95% confidence intervals are reported in the squared brackets. While the columns (1)-(3) are estimated using linear two-way fixed effects regressions, estimates reported in columns (4)-(6) are based on JWDID regressions. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Appendix

Table A.1. Dates when the first round of terminations occurred in each state

<b>State</b>	<b>Date of first disenrollment</b>
Alabama	June 1, 2023
Alaska	June 1, 2023
Arizona	April 1, 2023
Arkansas	April 1, 2023
California	July 1, 2023
Colorado	May 31, 2023
Connecticut	May 1, 2023
Delaware	June 1, 2023
District of Columbia	June 1, 2023
Florida	May 1, 2023
Georgia	May 1, 2023
Hawaii	June 1, 2023
Idaho	April 1, 2023
Illinois	July 1, 2023
Indiana	May 1, 2023
Iowa	May 1, 2023
Kansas	May 1, 2023
Kentucky	June 1, 2023
Louisiana	July 1, 2023
Maine	June 30, 2023
Maryland	June 1, 2023
Massachusetts	June 1, 2023
Michigan	July 1, 2023
Minnesota	July 1, 2023
Mississippi	June 30, 2023
Missouri	July 1, 2023
Montana	June 1, 2023
Nebraska	May 1, 2023
Nevada	June 1, 2023
New Hampshire	April 1, 2023
New Jersey	May 31, 2023
New Mexico	May 1, 2023
New York	July 1, 2023
North Carolina	July 1, 2023
North Dakota	June 1, 2023
Ohio	May 1, 2023
Oklahoma	April 30, 2023
Oregon	June 30, 2023
Pennsylvania	May 1, 2023
Rhode Island	June 1, 2023
South Carolina	June 1, 2023
South Dakota	April 1, 2023

<b>State</b>	<b>Date of first disenrollment</b>
Tennessee	May 31, 2023
Texas	June 1, 2023
Utah	May 1, 2023
Vermont	May 31, 2023
Virginia	May 1, 2023
Washington	June 1, 2023
West Virginia	May 1, 2023
Wisconsin	July 1, 2023
Wyoming	May 1, 2023

Note: The primary source of information regarding the dates when states had their first round of disenrollments after the continuous enrollment mandate was withdrawn is retrieved from Medicaid.gov. See <https://www.medicaid.gov/resources-for-states/downloads/ant-2023-time-init-unwin-reldt-ren-06292023.pdf> - Accessed on November 23, 2023. However, we also perform a comprehensive state-specific online search to further confirm and identify the exact dates when the first round of disenrollment occurred (or expected to occur). The links to the state-specific information resources are available upon request.

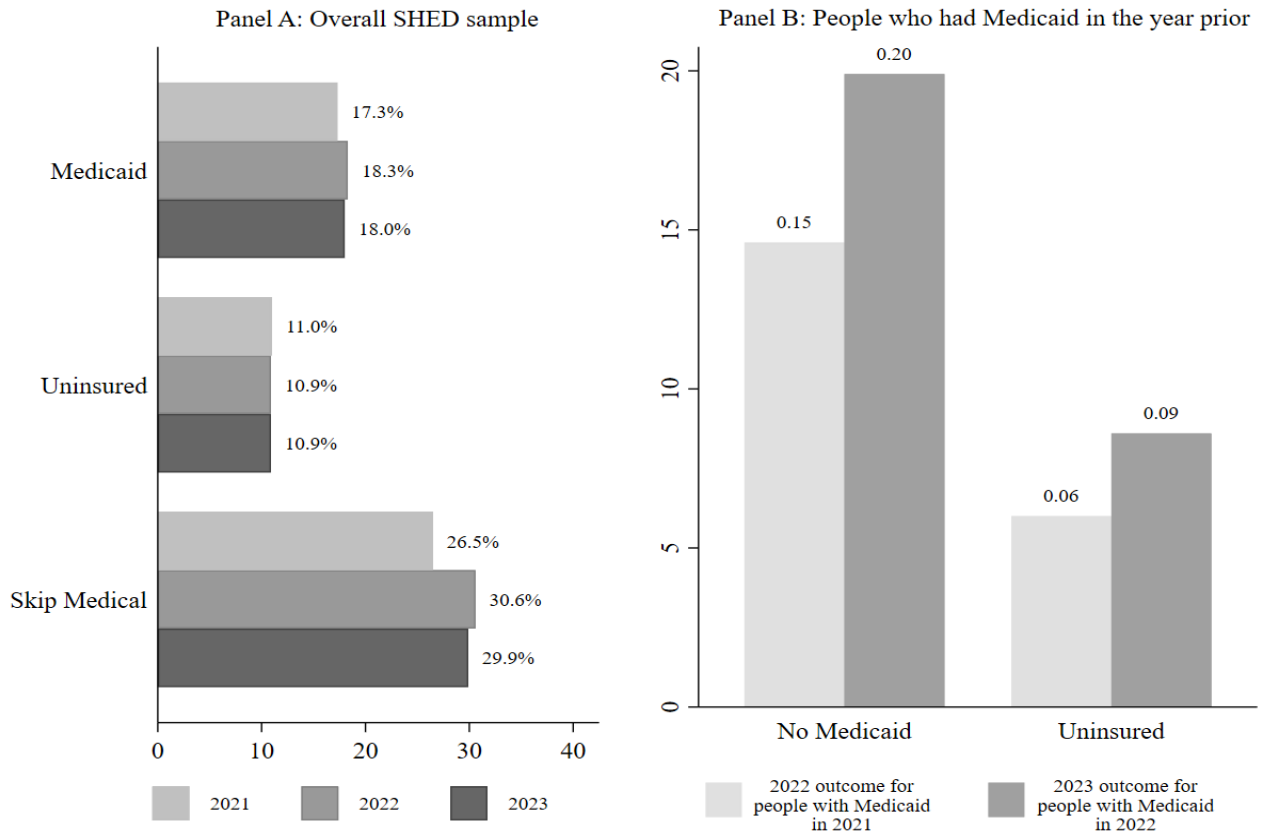


Table A.2- Estimates of the effect of Medicaid disenrollments by group

	Medicaid	Market	Private	No insurance	Expense difficulties
	(1)	(2)	(3)	(4)	(5)
G1 – April 1, 2023	-0.016*** (0.007)	0.005 (0.006)	0.001 (0.005)	0.002 (0.005)	0.016** (0.006)
G2 – April 30, 2023	0.010 (0.007)	-0.005 (0.006)	-0.011** (0.005)	0.000 (0.005)	-0.004 (0.005)
G3 – May 1, 2023	-0.005 (0.009)	-0.004 (0.006)	0.003 (0.007)	-0.002 (0.006)	0.016** (0.008)
G4 – May 31, 2023	-0.022*** (0.009)	-0.009** (0.005)	-0.010** (0.005)	0.000 (0.005)	0.015 (0.010)
G5 – June 1, 2023	-0.017** (0.010)	0.001 (0.009)	0.005 (0.007)	0.005 (0.006)	-0.012 (0.008)
Observations	2754	2754	2754	2754	2754
Sample Mean	0.183	0.201	0.610	0.094	0.354

*Note:* The group estimates are derived from the ETWFE regressions performed to generate the point estimates reported in Table 2. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Figure A.1 –Medicaid coverage and uninsurance rates in 2021-2023 based on SHED samples



*Notes:* The above findings are based on the SHED’s adult population aged under 65. The overall sample sizes in Panel A are 8495, 8312, 8174 for the survey years 2021, 2022, and 2023, respectively. The Medicaid coverage rate is calculated based on the survey question that asks whether the respondent is covered by Medicare or Medicaid, among other possible health insurance and coverage options. We code an individual to be uninsured if they responded “no” to all different types of health coverage plans asked in the survey. The indicator “Skip Medical” is a binary indicator that equals 1 if a respondent reports to have gone without medical care in the recent past. The shares reported in Panel B are based on a subset of overlapping respondents who are surveyed in two successive years and had Medicaid coverage in the earlier of the two years. In total, there were 2773 individuals (and among them 439 had Medicaid coverage in 2021) who were in both the 2021 and 2022 surveys. And there were 2956 individuals (and among them 439 had Medicaid coverage in 2021) who were in both the 2022 and 2023 surveys.