

By Pamela Herd, Eric R. Giannella, Jeremy Barofsky, Luke Farrell, and Donald Moynihan

DOI: 10.1377/hlthaff.2025.00316
 HEALTH AFFAIRS 44,
 NO. 11 (2025): 1336–1343
 This open access article is
 distributed in accordance with the
 terms of the Creative Commons
 Attribution (CC BY 4.0) license.

Interventions To Automate Medicaid Renewals Reduce Procedural Denials And Increase Coverage

Pamela Herd, University of Michigan, Ann Arbor, Michigan.

Eric R. Giannella (eric.giannella@georgetown.edu), Georgetown University, Washington, D.C.

Jeremy Barofsky, Georgetown University.

Luke Farrell, Cornell University, New York, New York.

Donald Moynihan, University of Michigan.

ABSTRACT Burdensome Medicaid renewal processes are a known source of coverage loss among eligible people. In spring 2023, the pause in Medicaid disenrollment resulting from the COVID-19 public health emergency ended, and states began redetermining eligibility for more than ninety million beneficiaries. In the early months of these redeterminations, a large majority of those disenrolled lost coverage for procedural reasons, such as missing paperwork. We examined an effort by the federal government to work with four states to increase automated ex parte Medicaid renewals with the goal of reducing procedural denials and coverage loss. Our analysis of state Medicaid enrollment data found that compared with other states, ex parte renewals in the four states increased by 21.6 percentage points, overall renewals increased by 7.7 points, and procedural denials decreased by 8.3 points. Reducing burdens by automating Medicaid renewals ensures that eligible beneficiaries remain in the program. Our results also highlight that policies and rules only work when states have the capacity to implement them.

The COVID-19 public health emergency produced a surge in health insurance coverage from 2020 to 2023 that rivaled the impact of the Affordable Care Act from 2013 to 2017.¹ The explanation was simple: The Families First Coronavirus Response Act of 2020 forbade Medicaid disenrollment, ensuring “continuous eligibility.”

Eliminating disenrollment addressed a long-standing problem: the administrative burdens that eligible beneficiaries experience renewing their Medicaid benefits each year.² They face a “time tax” and disenrollment risk because of onerous administrative processes, ranging from complicated forms to documentation of income and assets.^{2–4} Coverage loss estimates vary, but, for example, about half of the 20 percent of children losing coverage during redetermination in 2018 were likely eligible.^{5,6} These burdens will grow, given new legislation requiring semi-

annual rather than annual renewals and new work requirements for some beneficiaries.

When the public health emergency ended in the spring of 2023, marking the start of the continuous eligibility “unwinding,” more than ninety million beneficiaries faced large burdens.⁷ Many did not know that they needed to renew or were unfamiliar with the renewal process. By August 2023, one-third of beneficiaries had lost coverage, with about 70 percent classified as procedural denials due to incomplete paperwork.⁸

The federal government, alarmed by the possibility of mass procedural denials and coverage loss during the unwinding, pushed states to expand ex parte renewals, which is Medicaid’s technical term for automated renewals.⁹ By drawing on existing administrative data, such as wages from state labor agencies or income data from other benefit programs, fewer beneficiaries would need to document their eligibility to retain coverage.¹⁰ In some cases, this is completely

handled by software, and in others, it requires some work by agency staff; from the beneficiary perspective, the process is automated.

States, however, were not fully leveraging ex parte renewals, often because of limited policy and technical capacity. About half of states were violating federal rules because they had so few ex parte renewals.¹¹ Ex parte rates varied widely: In early 2023, rates ranged from less than 25 percent in eleven states to more than 50 percent in eighteen states.⁷

As a consequence, the federal government devised an intervention designed to help states increase ex parte rates, decrease procedural denials, and increase retention. The intervention was implemented by a team of five to six experts from the Centers for Medicare and Medicaid Services (CMS) and the US Digital Service (USDS), a federal agency tasked at the time with providing support to ensure the effective delivery of government benefits and services. The team worked with Medicaid officials in four states (California, New York, South Carolina, and Wisconsin) covering almost 30 percent of all Medicaid beneficiaries nationwide.¹² The team of CMS and USDS experts showed the states how to process more cases ex parte by identifying sources of administrative data and digital tools they could use and better understanding the rules dictating how they could use them.

Whether the intervention would succeed and, critically, be a template for future reforms was unclear. There was no evidence that improving state capacity would increase ex parte rates and, relatedly, reduce procedural denials and disenrollments.^{13,14} For example, if ex parte processes were applied only to people whose eligibility was uncomplicated and easy to document, it may have had little impact on procedural denials and disenrollment. In this study, we used difference-in-differences and event study methods to examine whether the intervention (specifically, the federal CMS and USDS team's assistance to state agencies with their ex parte processes) increased ex parte rates and reduced procedural denials and disenrollment.

Study Data And Methods

DATA CMS mandated that states report monthly data during the Medicaid unwinding. The data, available on Medicaid.gov, were from the period March 2023–March 2024. We relied on data submitted by states three months after the close of each unwinding month. Study data began with May 2023 because only eighteen states had any data reported in April 2023.¹⁵ Monthly data for each state included the number of beneficiaries due for renewal, the number of cases renewed via

ex parte processes, the number of cases processed manually (meaning that they could not be renewed ex parte and required the client to submit paperwork), and among the latter, the number of cases that were either renewed or denied. Finally, these data included the number of cases classified as "procedural denials." These cases were not completed because, for example, people did not return renewal forms to the state. De facto, procedurally denied cases were processed manually. These reports also included the number of pending cases at the end of the month, which primarily reflects cases that states could not renew ex parte and that shifted to the manual process. We also excluded state-months if a state had completed unwinding, which applied to March 2024 for only five nonintervention states.¹⁶

ADMINISTRATIVE INTERVENTION The CMS and USDS intervention evaluated in this study ran from August through December 2023.^{17,18} The goal was to reduce administrative burden for beneficiaries by increasing ex parte rates, with the aim of reducing procedural denials and preventing coverage loss for eligible people. The team worked closely with states to develop recommendations and detailed implementation plans. Recommendations were ranked by the greatest potential to increase ex parte renewals. Each state project took about two months.

The team provided two types of help. The first was policy expertise, drawing from CMS and state Medicaid policy staff guidance. This allowed states to accurately identify and remove unnecessary constraints blocking ex parte renewals. For example, the team determined that California could automate renewals for cases for which no information on income was found in administrative data if beneficiaries' previous documented income was below 100 percent of the poverty level.¹⁹ In another example, the team determined that Wisconsin was erroneously excluding beneficiaries from ex parte renewals because of tax deductions that would not affect their eligibility.

The team also provided technical capacity. First, to automate renewals, the team helped states expand their use of administrative data sources to verify eligibility criteria such as income. For example, they helped New York use its Supplemental Nutrition Assistance Program enrollment data to satisfy income requirements. Second, they worked with states to improve the software that processed automated renewals. For example, the team helped New York officials with software changes that allowed them to better match administrative data to beneficiaries.

INTERVENTION AND NONINTERVENTION STATES

We classified states as either receiving or not

receiving the intervention. The sample consisted of forty-six states. California, New York, South Carolina, and Wisconsin were the four intervention states.²⁰ The state-specific interventions were implemented in September 2023 in South Carolina and December 2023 in California, New York, and Wisconsin. The intervention began to affect renewals due in September and December, respectively. Although the team did work with an additional two states for which we had unwinding data, we excluded them from the analysis: Michigan lacked preintervention data, and Hawaii paused disenrollment for several months because of the Maui wildfires.²¹ The intervention effects became confounded with the pause and resulting backlog of applications and renewals.

Forty-two states, including Washington, D.C., were classified as nonintervention states (hereafter referred to as “states”). An additional two states, Idaho and Texas, also did not receive the intervention but were excluded from the analysis because they employed different processes than other states or their reporting was inconsistent (see the limitations discussion below). Kansas received the intervention after unwinding and the study period, but it had extensive missing outcomes data so was also excluded. Last, a large share of Pennsylvania ex parte renewals were counted as manual renewals requiring client action, so we excluded Pennsylvania in estimating ex parte rates (see online appendix section 1).²²

OUTCOMES There were three renewal outcome variables for each month: ex parte renewal rate, overall renewal rate, and procedural denial rate. The ex parte rate was defined as the percentage of all renewal cases completed via the ex parte process. The overall renewal rate was the percentage of all renewal cases that were successfully renewed. Finally, the procedural denial rate was the percentage of all renewal cases denied for procedural reasons.

COVARIATES Covariates captured how states handled unwinding. First, some states front-loaded cases deemed likely to be ineligible.²³ A state-month indicator reflected when states planned to handle likely ineligible cases. Second, some states paused procedural denials in some months, typically requested for administrative problems. For example, many states had mistakenly evaluated eligibility at the household instead of the individual level, causing many eligible children to lose benefits.²⁴ The month-by-month requests to pause procedural denials were drawn from CMS documentation from June 2024²⁵ and were coded as an indicator for each state-month. Variables capturing state-month level waivers on renewal flexibilities neither improved our models in terms of Akaike or Bayesian Information Criterion nor changed

The speed and size of the intervention’s impact offer important lessons that go beyond the “unwinding.”

the results, so we omitted them. Finally, we controlled for the percentage of renewals that remained pending three months after the close of the renewal month.

STATISTICAL METHODS We used a difference-in-differences model to estimate the causal effect of the USDS intervention on these outcomes: proportion of Medicaid renewals in a given state-month performed ex parte, proportion of successful renewals overall, and proportion of renewals that were procedurally denied. Because outcomes were continuous proportions, we modeled ex parte renewals, overall renewals, and procedural denials using a beta regression functional form, which provided more power. Beta regressions are ideally suited to modeling continuous outcomes between 0 and 1 and provide reliable estimates of effect sizes.²⁶

To test the timing of treatment effects, as well as the parallel trends assumption (a requirement for a causal interpretation of difference-in-differences models), we also employed an event study model, using an ordinary least squares functional form for ease of exposition and consistency with other robustness checks.²⁷ Appendix section 2 contains details on the difference-in-differences and event study equations.²²

SENSITIVITY ANALYSES We conducted several robustness checks. First, difference-in-differences models can be biased if the study units (states, in this case) vary in the timing of treatment receipt.^{27,28} To examine potential bias caused by this variation in treatment rollout, we implemented both Callaway and Sant’Anna’s adjustment and Gardner’s two-stage estimator.^{28,29} Further checks included a placebo test to investigate whether results for overall renewal rates were robust to varying the intervention indicator variable around the actual intervention month and to the inclusion of a control for each state’s months since unwinding began, which could matter if more experience processing renewals affected outcomes. Additional analyses included

adding Idaho and Texas back to the set of non-intervention states and employing 2023 state-population weights.³⁰

LIMITATIONS This study had some limitations. First, as is common in policy analysis, intervention states were not randomly selected. CMS and the USDS identified states that wanted assistance and had below-average ex parte rates. Intervention states were motivated to change. To partly address nonrandom assignment, we employed a quasi-experimental difference-in-differences framework with state- and month-specific fixed effects. Moreover, models included a rich set of covariates to address potential confounders, especially state policy choices regarding the unwinding. The tightly timed intervention window and monthly outcome data that allowed the identification of the intervention's impact on outcomes coincident with its implementation helped strengthen the inference.

A second limitation was the representativeness of the findings. As noted, some states, which represented about 7 percent of the Medicaid population, were excluded from the analysis, given data quality issues. Because these states vary on dimensions such as demographics, this could affect generalizability.

A third limitation was that the Medicaid unwinding period was unique, given the sheer scale. But although the volume of redeterminations was unprecedented, churn and coverage loss during renewals were not a new phenomenon. The analysis can provide insights into how states might operate to reduce coverage loss amid national mandates that make services more burdensome to access.

Study Results

Exhibit 1 illustrates raw pre- and postintervention ex parte renewal rates, overall renewal rates, and procedural denial rates for the four states receiving the CMS and USDS intervention. Descriptively, ex parte renewals increased by 28 percentage points, overall renewals rose by 12 percentage points, and procedural denials decreased by 9 percentage points from the pre to the post periods. Appendix section 3 shows descriptive outcomes for all states by month (appendix exhibit A1), pre- and postintervention outcomes for intervention states (appendix exhibit A2), and descriptive statistics for key variables for all states (appendix exhibit A3).²²

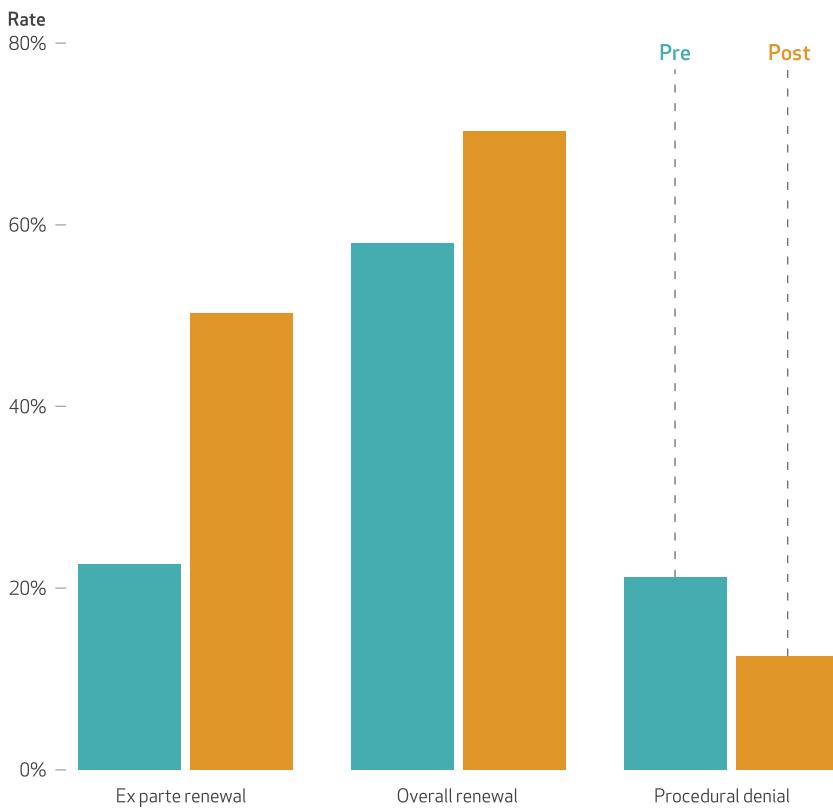
Exhibit 2 illustrates unadjusted differences in ex parte renewal rates between intervention and nonintervention (“other”) states. Intervention states were selected in part because they lagged behind other states. The exhibit shows that pre-intervention trends (before month 0) were simi-

lar between intervention and nonintervention states and that, if anything, although intervention states may have been more motivated, the gap in ex parte renewals was widening pre-intervention, not narrowing, meaning that extra motivation did not translate into improved outcomes preintervention, which could have biased the results. The exhibit also shows that the intervention brought those states to parity with nonintervention states three months post-intervention.

Exhibit 3 presents modeled estimates of the intervention effects for all outcomes, with key covariates included. We found an increase of 21.6 percentage points in ex parte renewal rates in intervention states compared with non-intervention states. We also found an increase in overall renewal rates of 7.7 percentage points and a decrease in procedural denials of 8.3 percentage points. Detailed regression results for these three outcomes are in appendix exhibits A4–A6.²²

EXHIBIT 1

Medicaid ex parte renewal rates, overall renewal rates, and procedural denial rates before and after states received Centers for Medicare and Medicaid Services (CMS) and US Digital Service (USDS) assistance, for the 4 states that received assistance, 2023–24



SOURCE Authors' analysis of CMS unwinding monthly data reports, May 2023–March 2024. **NOTES** Intervention states were California, New York, South Carolina, and Wisconsin. Interventions became active in September 2023 in South Carolina and December 2023 in California, New York, and Wisconsin. The categories of renewals and denial are defined in the text.

EXHIBIT 2

Unadjusted Medicaid ex parte renewal rates for 4 states that received Centers for Medicare and Medicaid Services (CMS) and US Digital Service (USDS) assistance compared with states that did not, 2023–24



SOURCE Authors' analysis of CMS unwinding monthly data reports, May 2023–March 2024. **NOTES** "Intervention states" are the 4 states that received support, and "other states" are those that did not. Ex parte rates are plotted relative to the timing of the intervention, which took effect in September 2023 for South Carolina and December 2023 for California, New York, and Wisconsin. Model excludes Hawaii, Idaho, Kansas, Michigan, Pennsylvania, and Texas.

Exhibit 4 shows event study results for ex parte rates. First, there were no statistically significant differences between intervention and nonintervention states preintervention, again confirming parallel trends. We also found an abrupt increase in ex parte renewal rates in intervention states compared with nonintervention states that is coincident with treatment timing, as expected if CMS and USDS assistance caused the observed increase. Event study results with overall renewals as an outcome show a similar pattern in preintervention parallel trends and an increase in renewals just as the intervention begins (appendix exhibit A7).²²

All sensitivity tests produced results consistent with our main findings. Robustness checks using ordinary least squares models instead of beta regressions for ex parte and overall renewals showed largely similar results: The ordinary least squares estimates were 0.4 points higher than the beta regression estimates for overall outcomes and 3.1 points lower than the beta regression estimates for ex parte rates (appendix

exhibits A4, A5, A8, and A9).²²

Our adjustment to check for bias on the basis of staggered treatment timing, using both Callaway and Sant'Anna's method and Gardner's two-stage estimator, generated similar results, as found in our main event study specification (appendix exhibits A10–A13).²² The placebo test, which varied the treatment month, showed statistically significant results for the actual intervention month alone (appendix exhibit A14).²² We ensured that the results were robust to controlling for the amount of experience states had in processing renewals, and we found identical treatment effects to our primary model (appendix exhibit A15).²² Last, to address potential selection bias, we added Idaho and Texas back as nonintervention states and included 2023 population weights,³¹ both of which showed minimal differences with our main results (appendix exhibits A16 and A17).²²

Discussion

The CMS and USDS intervention, deployed in the space of months, proved remarkably effective, increasing Medicaid ex parte renewals by 21.6 percentage points and overall renewals by 7.7 percentage points, while reducing procedural denials by 8.3 percentage points. The speed and size of the intervention's impact offer important lessons that go beyond the "unwinding."

Problems with Medicaid renewals are not new. Renewals are a known source of both "churn" and coverage loss among eligible people.^{32–34} People frequently lose coverage because they did not receive the renewal form, were confused about how to complete it, or struggled to find the information and documentation they needed to complete it. Failing to renew Medicaid for procedural reasons is costly to people losing coverage, in terms of lost access to care and out-of-pocket expenses. It is also costly to the state because eligible people disenrolled from the program frequently re-enroll, which is more expensive than renewing coverage.

Although automating renewal processes seems like an intuitive fix, the existing evidence is limited and unclear as to its impacts.¹⁴ Increases in ex parte renewals might not have translated to reduced procedural denials or increased retention, for example, if those cases were straightforward and easy for beneficiaries to complete or if these burdens did not impede access. Our analysis clearly shows, however, that the intervention—specifically, the federal CMS and USDS team's assistance to state agencies with their ex parte processes—increased ex parte renewal rates and reduced procedural denials and disenrollment.

EXHIBIT 3

Regression-adjusted effect of Centers for Medicare and Medicaid Services (CMS) and US Digital Service (USDS) assistance on Medicaid ex parte renewal rates, overall renewal rates, and procedural denial rates for the 4 states that received assistance compared with states that did not, 2023–24

Intervention and key covariates	Ex parte renewals	Overall renewals	Procedural denials
CMS and USDS assistance (intervention)	21.6****	7.7***	-8.3****
Month-specific prioritization of less eligible cases	-0.37****	-0.45****	0.45****
Month-specific request to pause procedural denials	— ^a	0.23****	-0.39****
No. of observations (state-months)	475	486	486
Degrees of freedom	417	425	425

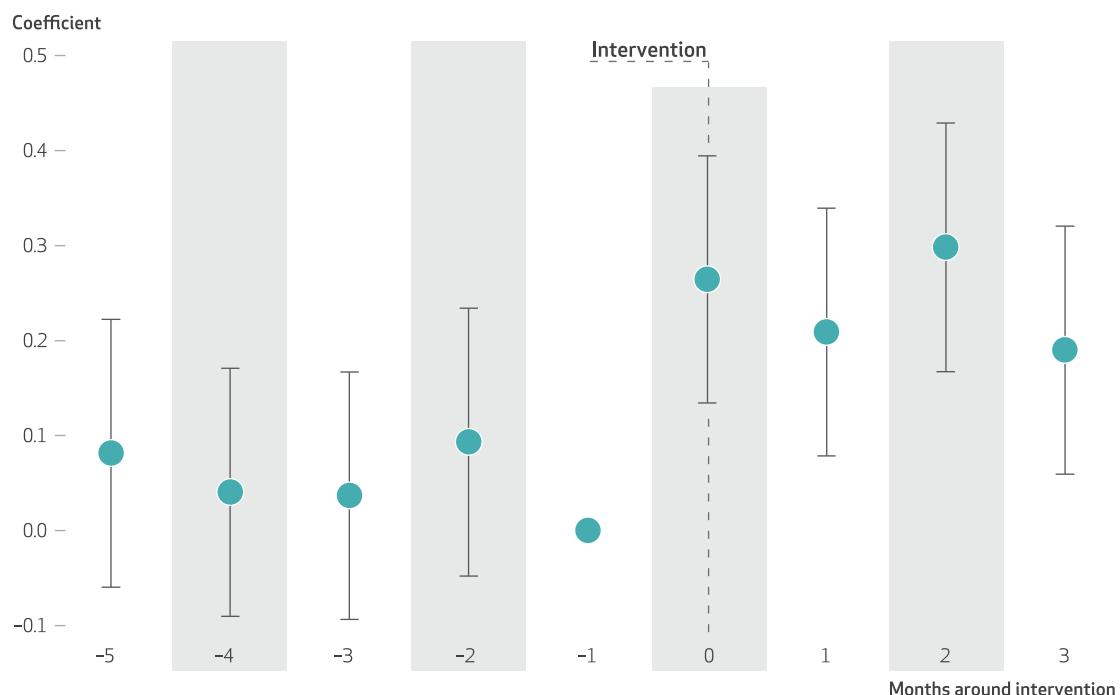
SOURCE Authors' analysis of CMS unwinding monthly data reports, May 2023–March 2024. **NOTES** Table shows beta regression model results, where state and month fixed effects are not shown. All states and Washington, D.C., are included except for Hawaii, Idaho, Kansas, Michigan, and Texas. Pennsylvania also is excluded for ex parte renewal as the outcome. All outcomes are regression coefficients except for the intervention variable (CMS and USDS assistance), which reports estimates of the percentage-point change. Coefficients for the intervention are 0.88 for ex parte renewals, 0.35 for overall renewals, and 0.64 for procedural denials. ^aNot applicable. *** $p < 0.01$ **** $p < 0.001$

This analysis also emphasizes that states need sufficient capacity to implement burden reduction, which here entailed the policy and technological expertise to reduce compliance burdens on Medicaid enrollees by maximizing automated

ex parte renewals. Some states, such as Washington and Oregon, had this expertise and leveraged that capacity to quickly make changes that would increase their ex parte rates. Other states, however, lacked these resources,

EXHIBIT 4

Event study results showing the effect of Centers for Medicare and Medicaid Services (CMS) and US Digital Service (USDS) assistance, by month, on Medicaid ex parte renewal rates for the 4 states that received assistance compared with those that did not, 2023–24



SOURCE Authors' analysis of CMS unwinding monthly data reports, May 2023–March 2024. **NOTE** Interaction coefficient estimate and confidence intervals (indicated by whiskers) are plotted relative to the timing of the intervention, which took effect in September 2023 for South Carolina and December 2023 for California, New York, and Wisconsin. Model excludes Hawaii, Idaho, Kansas, Michigan, Pennsylvania, and Texas.

resulting in ex parte rates that were much lower than the median rate across states. For those states, the CMS and USDS team filled that gap by providing practical policy knowledge, such as assuring states that they could use particular kinds of administrative data to automate eligibility, and information technology expertise, such as how to actually use administrative data to complete ex parte recertifications. Alongside CMS staff, USDS engineers, user researchers, and product managers could credibly provide expertise about process changes, suggest more feasible technical approaches, and provide concrete examples of policy and implementation choices made by other states and federal agencies.

These findings also have implications moving forward. External support could help mitigate the long-standing problem of coverage loss among eligible Medicaid beneficiaries during renewal processes, especially as states implement new renewal processes and work requirements. That said, it is important to note that at the federal level, the USDS no longer exists—it has been replaced by the US DOGE Service, which has focused on fraud reduction rather than expanding access.

The findings ultimately demonstrate that changes in administrative burdens are policy choices. Through policy implementation, states

The findings ultimately demonstrate that changes in administrative burdens are policy choices.

can influence how much the new Medicaid requirements lead to eligible beneficiaries losing coverage for administrative reasons. In the case under study, it was not enough to require states to automate renewal processes for beneficiaries or for states themselves to want to do so. States needed both the capacity and the policy and technical expertise to effectively implement automation and ensure that those eligible for critical benefits such as Medicaid can actually access them. ■

The authors acknowledge support from the Gates Foundation and the Walmart Foundation. They acknowledge the US Digital Service team that developed the state interventions analyzed here and whose insights significantly enhanced this work, including Megan Cage, Navin Eluthesen, Alyssa Kropp, Emily Mann, Max Mazzocchi, Greg Novick, Heather Myers, Alicia Rouault, Christopher Wren, and Izzie Zahorian. Before becoming a public interest technology visiting fellow at Cornell, Luke Farrell was product lead at the US Digital Service, serving on the

team that delivered the interventions described in the article. In that capacity, he provided insights on several matters, such as beneficiary inclusion in and exclusion from renewals, technical support provided to states, identification of intervention states, and timing of interventions. The authors are grateful for Jen Wagner's guidance on policy adoption and state variations. The authors are solely responsible for the accuracy of the information presented in this article. Any views or opinions expressed in this article are solely those

of the authors, and no endorsement of these views or opinions by funders or government employers is expressed or implied. This is an open access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) license, which permits others to distribute this work provided the original work is properly cited, not altered, and not used for commercial purposes. See <https://creativecommons.org/licenses/by/4.0/>. To access the authors' disclosures, click on the Details tab of the article online.

NOTES

- 1** Dague L, Ukert B. Pandemic-era changes to Medicaid enrollment and funding: implications for future policy and research. *J Policy Anal Manage.* 2024;43(4):1229–59.
- 2** Herd P, Moynihan DP. Administrative burden: policymaking by other means. New York (NY): Russell Sage Foundation; 2019.
- 3** Lowrey A. The time tax. *Atlantic* [serial on the Internet]. 2021 Jul 27 [cited 2025 Sep 10]. Available from: <https://www.theatlantic.com/politics/archive/2021/07/how-government-learned-waste-your-time-tax/619568/>
- 4** Executive Office of the President. Executive order 14058, Transforming federal customer experience and service delivery to rebuild trust in government. *Fed Regist.* 2021; 86(239):71357–66.
- 5** Medicare and CHIP Payment and Access Commission. An updated look at rates of churn and continuous coverage in Medicaid and CHIP [Internet]. Washington (DC): MACPAC; 2021 Oct [cited 2025 Sep 25]. (Issue Brief). Available from: <https://www.macpac.gov/wp-content/uploads/2021/10/An-Updated-Look-at-Rates-of-Churn-and-Continuous-Coverage-in-Medicaid-and-CHIP.pdf>
- 6** Arbogast I, Chorniy A, Currie J. Administrative burdens and child Medicaid and CHIP enrollments. *Am J Health Econ.* 2024;10(2):237–71.
- 7** Tolbert J, Ammula M. 10 things to know about the unwinding of the Medicaid continuous enrollment provision [Internet]. San Francisco (CA): KFF; 2023 Jun 9 [cited 2025 Sep 10]. Available from: <https://www.kff.org/medicaid/10-things-to-know-about-the-unwinding-of-the-medicaid-continuous-enrollment-provision/>

- 8** Georgetown University, McCourt School of Public Policy, Center for Children and Families. What is happening with Medicaid renewals in each state? [Internet]. Washington (DC): Georgetown University; c 2025 [cited 2025 Sep 10]. Available from: <https://ccf.georgetown.edu/2023/07/14/whats-happening-with-medicaid-renewals/>
- 9** Bedoya M, Sharfstein JM. Unwinding Medicaid eligibility: lessons for health policy. *JAMA Health Forum.* 2024;5(10):e244487.
- 10** Regularly scheduled renewals of Medicaid eligibility, 42 C.F.R. Sect. 435.916(b)(1) (2024).
- 11** Corallo B, Tolbert J. Understanding Medicaid ex parte renewals during the unwinding [Internet]. San Francisco (CA): KFF; 2023 Oct 2 [cited 2025 Sep 10]. Available from: <https://www.kff.org/medicaid/understanding-medicaid-ex-parte-renewals-during-the-unwinding/>
- 12** KFF. Total monthly Medicaid & CHIP enrollment and pre-ACA enrollment [Internet]. San Francisco (CA): KFF; [cited 2025 Sep 10]. (Time frame: May 2025). Available from: <https://www.kff.org/affordable-care-act/state-indicator/total-monthly-medicaid-and-chip-enrollment/>
- 13** Centers for Medicare and Medicaid Services. All hands-on-deck: keeping people covered as states restart routine Medicaid renewals [Internet]. Baltimore (MD): CMS; 2023 Jun [cited 2025 Sep 10]. Available from: <https://www.medicaid.gov/resources-for-states/downloads/renewals-all-hands-on-deck-fact-sheet.pdf>
- 14** Ku L, Platt I. Duration and continuity of Medicaid enrollment before the COVID-19 pandemic. *JAMA Health Forum.* 2022;3(12):e224732.
- 15** Centers for Medicare and Medicaid Services. Monthly data reports [Internet]. Baltimore (MD): CMS; [cited 2025 Sep 10]. Available from: <https://www.medicaid.gov/resources-for-states/coronavirus-disease-2019-covid-19/unwinding-and-returning-regular-operations-after-covid-19/data-reporting/monthly-data-reports/index.html>
- 16** Centers for Medicare and Medicaid Services. Scheduled state timelines for completing unwinding-related renewals [Internet]. Baltimore (MD): CMS; 2024 May [cited 2025 Sep 10]. Available from: <https://www.medicaid.gov/resources-for-states/downloads/scheduled-state-timelines-completing-unwinding-related-renewals.pdf>
- 17** US Digital Service. US Digital Service—Medicaid renewals playbook [Internet]. Washington (DC): USDS; 2023 [cited 2025 Sep 10]. Available from: <https://usds.github.io/medicaid-renewals-playbook/>
- 18** White House, Office of Information and Regulatory Affairs. Tackling the time tax: making important government benefits and programs easier to access [Internet]. Washington (DC): White House; 2024 Jul [cited 2025 Sep 10]. Available from: <https://bidenwhitehouse.archives.gov/wp-content/uploads/2024/07/OIRA-2024-Burden-Reduction-Report.pdf>
- 19** California Health and Human Services Agency. California's journey with Medi-Cal redeterminations [Internet]. Sacramento (CA): CalHHS; 2024 Mar [cited 2025 Sep 10]. (Issue Brief). Available from: <https://www.chhs.ca.gov/wp-content/uploads/2024/03/California-USDS-Issue-Brief-March-2024.pdf>
- 20** US Digital Service. 2024 impact report: cutting red tape for Americans renewing health coverage and government workers [Internet]. Washington (DC): USDS; 2024 [cited 2025 Sep 10]. Available from: <https://www.usds.gov/impact-report/2024/medicaid-renewals/>
- 21** State of Hawaii, Department of Human Services. DHS Med-Quest paused Medicaid disenrollments for 2023 [Internet]. Honolulu (HI): DHS; 2023 Sep 10 [cited 2025 Sep 10]. Available from: <https://human-services.hawaii.gov/dhs-med-quest-paused-medicaid-disenrollments-for-2023/>
- 22** To access the appendix, click on the Details tab of the article online.
- 23** Centers for Medicare and Medicaid Services. 2023 state timelines for initiating unwinding-related renewals as of June 29, 2023 [Internet]. Baltimore (MD): CMS; 2023 Jun 29 [cited 2025 Sep 10]. Available from: <https://www.medicaid.gov/resources-for-states/downloads/ant-2023-time-init-unwin-reltd-ren-06292023.pdf>
- 24** Centers for Medicare and Medicaid Services [Internet]. Baltimore (MD): CMS. Press release, Coverage for half a million children and families will be reinstated thanks to HHS' swift action; 2023 Sep 21 [cited 2025 Sep 10]. Available from: <https://www.cms.gov/newsroom/press-releases/coverage-half-million-children-and-families-will-be-reinstated-thanks-hhs-swift-action>
- 25** Centers for Medicare and Medicaid Services. Medicaid and CHIP national summary of renewal outcomes—March 2024 and national summary to date [Internet]. Baltimore (MD): CMS; 2024 Jun. Slide number 6, Context and data notes: holding procedural terminations; [cited 2025 Sep 10]. Available from: <https://www.medicaid.gov/resources-for-states/downloads/march-2024-national-summary-renewal-outcomes.pdf#page=6>
- 26** Geissinger EA, Khoo CL, Richmond IC, Faulkner SJ, Schneider DC. A case for beta regression in the natural sciences. *Ecosphere.* 2022; 13(2):e3940.
- 27** Miller DL. An introductory guide to event study models. *J Econ Perspect.* 2023;37(2):203–30.
- 28** Goodman-Bacon A. Difference-in-differences with variation in treatment timing. *J Econom.* 2021; 225(2):254–77.
- 29** Callaway B, Sant'Anna PHC. Difference-in-differences with multiple time periods. *J Econom.* 2021;225(2):200–30.
- 30** Gardner J. Two-stage differences in differences. arXiv [preprint on the Internet]. 2022 Jul 13 [cited 2025 Sep 10]. Available from: <https://arxiv.org/pdf/2207.05943>
- 31** KFF. State health facts [Internet]. San Francisco (CA): KFF; [cited 2025 Sep 10]. Available from: <https://www.kff.org/state-health-facts/>
- 32** Swartz K, Short PF, Graefe DR, Uberoi N. Reducing Medicaid churning: extending eligibility for twelve months or to end of calendar year is most effective. *Health Aff (Millwood).* 2015;34(7):1180–7.
- 33** Roberts ET, Pollack CE. Does churning in Medicaid affect health care use? *Med Care.* 2016;54(5): 483–9.
- 34** Ndumele CD, Lollo A, Krumholz HM, Schlesinger M, Wallace J. Long-term stability of coverage among Michigan Medicaid beneficiaries: a cohort study. *Ann Intern Med.* 2023; 176(1):22–8.