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ABSTRACT

We study the effect of the Affordable Care Act's Medicaid expansion on coverage dynamics following the sudden loss of coverage from an employer plan. This analysis leverages novel administrative data capturing monthly health insurance coverage for the U.S. population. Using these data, we develop several stylized facts describing the post-separation coverage dynamics. In addition, we use a difference-in-differences model to estimate the causal effect of Medicaid expansion on the duration of uninsurance following a separation from an employer plan. We find that Medicaid expansion increases the likelihood of finding coverage by 16% and reduces the duration of uninsurance by 12%.

Keywords : Health Insurance Dynamics, Unemployment, Medicaid Expansion

JEL Classification : J65, I13, I18, I38

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1. Introduction

Insurance coverage in the United States is a complicated, dynamic process fraught with frequent transitions across public coverage, private coverage, and periods of uninsurance. These transitions, sometimes called churn, reduce health care consumption, compromise individual health, and elevate the risk of financial setbacks (see, for example, Cutler and Gelber, 2009; Guevara et al., 2014; Gai and Jones, 2020). Coverage transitions are strongly connected to labor market fluctuations given that most Americans access health insurance through their employer (Lurie and Pearce, 2021). In the past, those seeking insurance outside of an employer-sponsored plan had limited options: standalone policies were often prohibitively expensive, and most working age adults, especially the unmarried, did not qualify for public coverage through Medicaid. The 2010 passage of the Affordable Care Act (ACA) marked a significant shift in the American health insurance landscape. By promoting voluntary Medicaid expansion at the state level, the ACA made it possible for a larger segment of the population to access public insurance, offering a safety net for those facing coverage disruptions due to unemployment. Yet, the extent to which the broad population benefits from access to Medicaid remains an open question.

In this paper, we study the effect of expanded Medicaid access on coverage dynamics following an involuntary loss of private employer health insurance. We make use of novel administrative tax data that reports *monthly* information on the source of health insurance coverage at the individual level for the U.S. population. First we generate several stylized facts about insurance transitions among policyholders who become unemployed, expanding information about dynamics that have been, until this point, unobservable on a large-scale basis. We then estimate the causal effect of expanded Medicaid access on coverage dynamics by leveraging the 2019 Virginia Medicaid expansion, which provided a positive shock to

Medicaid access. Finally, we provide evidence describing differences in coverage dynamics related to Medicaid expansion during the first weeks of the COVID-19 pandemic in the U.S., when many Americans faced a negative shock to employment. Overall, our work highlights the expansive role of Medicaid as a crucial component of the social safety net by reducing the duration of uninsurance for the unemployed.

For our analysis, we focus on the population of policyholders aged 18 to 62 who lose their employer coverage and simultaneously claim unemployment benefits.[1] In 2016, our data include more than 1.6 million policyholders, for whom we create a panel of monthly coverage data spanning the twenty-four months following their coverage loss. We link individual tax return data to this panel to capture additional information about the policyholder, including employment status, earnings, age, marital status, gender, and geographic location.

We use these data to characterize important features of coverage dynamics for those who lose health insurance due to becoming newly unemployed. First, the average duration of uninsurance after losing employer provided coverage is 4.9 months. Second, 6 percent of those dropping coverage fail to regain coverage within two years, implying at least some longer run persistence in uninsurance. Third, Medicaid serves as the first source of new coverage for nearly one-quarter of those who become unemployed and provides stable insurance for a full year. Fourth, those living in a Medicaid expansion state are 36 percent more likely to regain coverage, all else equal.

Having established these baseline statistics describing the evolution of coverage, we next estimate the *causal* effect of the ACA's Medicaid expansion on the likelihood and duration of uninsurance. We study the effect of the 2019 Virginia Medicaid Expansion using a difference-in-differences model that compares post-separation coverage dynamics of (1) those separating

[1] As we explain later, we characterize policyholders as unemployed if they receive unemployment income, reported on Form 1099-G, in the year of or the year after they separate from an employer plan.

from an employer policy in Virginia before and after the Medicaid expansion to (2) those who separated concurrently in states without expanded Medicaid.[2] This policy change allows us to estimate the effects of increasing Medicaid access among the unemployed while controlling for macroeconomic factors that could influence coverage dynamics. We find that the Virginia Medicaid expansion increased the likelihood of regaining coverage within the following year by 16 percent and reduced the duration of uninsurance by 12 percent. Importantly, the expansion increased the likelihood of Medicaid as a first source of coverage by 14 percentage points.

Finally, we study how Medicaid expansion impacted coverage dynamics for those who lost their health insurance due to the COVID-19 pandemic. The pandemic led to widespread job losses between March and April, 2020, which in turn led to heightened employer policy separations across the U.S. We compare coverage dynamics of (1) those living in expansion and non-expansion states in March of 2020 to (2) those living in these same states, but who separated from their employer plan in March of 2018 or 2019. We estimate that the likelihood of regaining coverage was 5 percent larger in expansion states compared to non-expansion states, and that the duration of uninsurance was 5 percent shorter.

Overall, our research highlights an understudied aspect of the ACA's Medicaid expansion. In particular, although Medicaid's primary purpose is to provide coverage to low-income Americans, we show that Medicaid also provides stop-gap coverage for those who lose their jobs and, as a result, access to their employer plan. This suggests that Medicaid can play a pivotal role in broader employment decisions by allowing the unemployed to be more selective in their job pursuits. In this way, Medicaid not only serves as a health safety net but also plays an important role in the general employment landscape.

[2]During our sample period, two states expanded Medicaid: Virginia and Louisiana. Due to data limitations from Louisiana, we focus our analysis on the Medicaid expansion in Virginia.

Our work contributes to the existing literature on insurance instability in the U.S. (Swartz, Marcotte and McBride, 1993; Swartz and McBride, 1990; Fairlie and London, 2008). Insurance instability has long been a concern among policymakers; plan transitions and gaps in coverage are costly from both a health and a monetary standpoint. Schaller and Stevens (2015); Schaller and Zerpa (2019) and East and Simon (2022) study changes in insurance coverage for job losers' and their children in the years prior to the enactment of the ACA. Roberts and Pollack (2016) and Gai and Jones (2020) find that coverage interruptions can make health care inaccessible and, as a result, individuals may forgo preventative or other medical services in ways that resemble a state of perpetual uninsurance. Coverage interruptions can be especially costly for members of certain vulnerable groups who face higher rates of chronic disease; (Kressin et al., 2020) finds that insurance instability is associated with greater rates of of uncontrolled blood pressure. Finally, Benitez, Dubay and Cole (2021) provided early estimates of difference in the likelihood of coverage in Expansion and non-Expansion states using the Household Pulse Survey.

Our results are also in line with recent studies that specifically examine how the overall health insurance expansion under the Affordable Care Act influenced health insurance dynamics (Graves and Nikpay, 2017; Vistnes and Cohen, 2018; Gai and Jones, 2020). This body of work generally finds that transitions out of uninsurance increased after the Affordable Care Act was enacted while the duration of uninsurance decreased. One challenge these studies face, however, is that they are unable to leverage state-level variation in Medicaid access to conduct causal analyses because the available survey data that would typically be used for such a study are not representative at the state level. In addition, the relatively small survey samples limit the extent to which the data can be subsetted to study those who lost coverage from unemployment. We expand this literature by contributing results based on administra-

tive data covering the U.S. population that enables a study of an important mechanism driving insurance instability: job loss.

2. Background

There are two primary forms of public health insurance in the United States: (1) Medicare, serving as a single-payer insurance system for adults above 65, and (2) Medicaid, which provides no-cost coverage to eligible, low-income adults and their children. Medicare operates at the federal level for those over 65, whereas Medicaid is a collaboration between federal and state governments. This co-administration of Medicaid leads to varying eligibility standards across states that are determined by factors such as monthly income, assets, and household composition.

In light of the inherent volatility of monthly income, Medicaid enrollment requires frequent individual-level eligibility determinations by state Medicaid offices. As a result, low-income individuals are known to "churn" in and out of eligibility over time.[3] For example, the Kaiser Foundation estimates that during 2018 — nearly a decade after the Affordable Care Act (ACA) was enacted — roughly 10% of Medicaid enrollees disenrolled from Medicaid and subsequently re-enrolled within one year.[4]

[3] In some cases, individuals may have what is referred to as "latent eligibility" for Medicaid. This term captures those individuals who meet eligibility criteria for Medicaid but are not enrolled or otherwise aware of their eligibility at they time they receive medical services. In this case, if they subsequently enroll in Medicaid, or if a social worker or case worker completes enrollment on their behalf, their coverage can be retroactively extended to cover medical expenses incurred prior to application during periods of latent eligibility.

[4] Source: https://www.kff.org/medicaid/issue-brief/medicaid-enrollment-churn-and-implications-for-continuous-coverage-policies/

Private insurance, on the other hand, is most commonly accessed through employers, who sponsor tax-subsidized group insurance for their employees.[5] Such health insurance policies are generally offered as part of a compensation package, under which the employer may choose to pay a portion (or all) of the plan's monthly premium. The ACA introduced a host of new regulations including that large employers must offer affordable insurance coverage to their employees. In addition, the ACA expanded access to non-group private insurance by creating subsidized marketplaces where individuals who had no access to an employer plan and who did not qualify for Medicaid could purchase insurance.

Similar to Medicaid, the scope for coverage instability exists for individuals with private insurance. However, instability of private coverage, which includes all intensive and extensive margin changes, likely results from a number of different channels. For example, labor market dynamics, including voluntary or involuntary job changes, could force an employee to separate from her private employer policy. Indeed, job loss that occurred prior to the ACA's enactment is associated with a nearly 20 percentage point increase in the likelihood of uninsurance (Schaller and Stevens, 2015; Schaller and Zerpa, 2019; East and Simon, 2022). Alternatively, if an employee's hours are reduced (whether voluntarily or not), then she may no longer qualify for her employer's health plan despite remaining employed. Employees may also choose to change plan type or insurer during open enrollment season or shift to dependent coverage through a spouse or partner, resulting in coverage instability on the intensive margin.

A number of past studies have explored the extent of insurance instability in the U.S. These studies tend to use survey data and focus on the characteristics and duration of uninsurance spells (Swartz, Marcotte and McBride, 1993; Swartz and McBride, 1990; Fairlie and London, 2008; Einav and Finkelstein, 2023; Schaller and Stevens, 2015; Schaller and Zerpa, 2019; East and Simon, 2022). Early work from Swartz and McBride (1990) uses data from the

[5]We define employer health plans as coverage obtained through one's own or one's spouse's employer, including multi-employer plan and Small Business Health Options Program (SHOP) plans.

1984 Survey of Income and Program Participation (SIPP) and finds that roughly half of all uninsured spells end within four months. Cutler and Gelber (2009) similarly use SIPP data covering the periods 1983–1986 and 2001–2004 and show that the likelihood of losing any coverage grew from 19.8% to 21.4%. They additionally find that periods of uninsurance were shorter in the later period due to increased transitions to public insurance.

More recent studies examine responses to the Affordable Care Act in terms of changes in coverage dynamics. Using data from the Medical Expenditure Panel Survey (MEPS), Graves and Nikpay (2017) show that transitions made by the uninsured to private and public coverage increased after the health care expansion. Vistnes and Cohen (2018) uses the Household Component of the MEPS (MEPS-HC) and shows that uninsurance spell duration declined in 2014–15, after the implementation of the ACA, relative to 2012–2013. Finally, Gai and Jones (2020) use the MEPS to describe early changes in insurance instability across different types of coverage with the implementation of the ACA. These important studies come with caveats, however. MEPS data are not well-suited to conduct state-level analyses, where substantial variation in Medicaid access exists. In addition, the sample size of any single MEPS panel is too small to permit an analysis of sudden policy separations from job loss—an important trigger for insurance loss (Fairlie and London, 2008; Schaller and Stevens, 2015; Schaller and Zerpa, 2019; East and Simon, 2022). We contribute to this strand of literature by providing causal estimates on the effect of the Medicaid expansion for those who lose health coverage with unemployment.

3. Identifying Employer Plan Separations

Under new regulations imposed by the Affordable Care Act, insurers and employers are required to report individual-level data on health insurance coverage to the IRS.[6] This information is reported on Forms 1095-A, 1095-B, and 1095-C. Specifically, Form 1095-A captures monthly coverage acquired through state and federal exchange insurance policies, Form 1095-B captures monthly coverage acquired through government programs like Medicare and Medicaid, and Forms 1095-B and -C capture monthly coverage acquired through private policies, including employer-provided health insurance.[7] Each form is filed annually for a given policy and contains a monthly breakdown of coverage information for all individuals associated with that policy. We exploit both the high-frequency and longitudinal nature of these data to provide a comprehensive analysis of private health coverage dynamics within the U.S.

3.1. Construction of Analysis Data

For our analysis, we construct a panel data set of monthly coverage, focusing on individuals who separate from an employer plan. We define an individual as separated from their employer plan if they are covered in month m according to Form 1095-B or Form 1095-C, but not covered in the next month, $m+1$.[8] Next, we combine information from all three 1095 Forms (1095-A,1095-B, and 1095-C) across multiple tax years to create a panel containing all sources

[6] Although coverage reporting was required beginning in 2014, the 2014 data contain incomplete population reporting; transition rules for the first year of the Affordable Care Act offered reporting relief.

[7] Form 1095-C, used by employers who qualify as an Applicable Large Employer (ALE), contains information required to administer the employer shared-responsibility provision of the ACA. We define employer plans based on the following line 8 codes: code A (Small Business Health Options Program); code B (Employer-sponsored coverage); or code E (multi-employer plans). See Lurie and Pearce (2021) for a more detailed description of these tax forms.

[8] Because we identify separations by using a single form, which reports coverage within a given calendar year for a specific plan, each year of data has 11 months of potential separations, from January–November. Identification of December separations requires a comparison of forms across two different tax years, which is outside of the scope of our data construction.

of monthly coverage for these individuals, which encompasses the twelve months prior to the employer plan separation through twenty-four months after. We classify those who are not identified as covered on any Form 1095 in month *m* as uncovered.[9]

We restrict this sample to those who were well-attached to their employer plan prior to separation by studying only those covered on the same policy for twelve months prior to separation. We also restrict individuals to ages 18 through 62 at the time of policy separation; this restriction ensures that policyholders experiencing a separation do not subsequently transition to Medicare during their twenty-four month post-separation period.[10] Finally, we use additional tax forms to capture information describing an individual's geographic location, unemployment compensation, and wages. Geographic location comes from address information reported on the various Form 1095s. Information on unemployment compensation is reported on Form 1099-G, and wage data come from Form W-2. We use the previous year's tax return (Form 1040) to determine marital status (based on joint or non-joint filing), household size, and household income.

3.2. Policy Separations Due to Unemployment

The dataset previously described includes all policyholders who separate from an employer plan, regardless of why that separation occurs. However, the dynamic decision of regaining

[9]When employment is terminated, covered individuals are permitted to continue health insurance coverage for a limited period of time on their original employer plan under COBRA (Consolidated Omnibus Budget Reconciliation Act). Former employees must opt-in within three months of termination to receive COBRA coverage and are responsible for *both* the employer and employee portion of their monthly premium. COBRA coverage can continue for 18–36 months, depending upon the circumstances surrounding the termination of employment. Because an individual's source of coverage does not change under COBRA — the only change is to who pays the premium — our data does not distinguish between months of coverage provided under COBRA and months of coverage provided through employment. As such, our data will correctly identify the month in which a previously covered employee moves to a new plan or becomes uncovered following a lapse in COBRA coverage.

[10]Information on age and gender are provided to IRS by the Social Security Administration (SSA).

coverage is often endogenous to the reason for a policy separation. For example, policyholders may choose to drop coverage in coordination with changes to ex-ante expectations of their medical expenditures, which in turn influence how quickly they regain coverage.

Although we cannot identify those who exogenously separated from their policy, we can identify a subsample of our data who is *more likely* to have experienced an unexpected policy separation.[11] Typically, employees are eligible to claim unemployment benefits if they are terminated due to layoffs, changes in business conditions, or a business closure. We hypothesize that individuals who separated from their plan and claimed UI benefits were therefore less likely to have coordinated their policy separation. As such, we will focus on this subsample of individuals for our main analyses.

We characterize a policyholder as unemployed if she received unemployment insurance income (UI) in the year of, or the year after, a policy separation occurs. We note that this measure will miss anyone who was unemployed but did not claim unemployment benefits. The inclusion of UI recipients one year after separation allows for delays in filing unemployment claims that push the receipt of benefits to the next calendar year, which is likely for those who separate from their job towards the end of the year.

3.3. Summary Statistics

Column (1) of Table 1 reports summary statistics for the 10.7 million policyholders who separated from their employer plan in 2016 after having been covered by the plan in the full

[11] While mass layoffs or plant closures could presumably identify more plausibly exogenous job loss, these events are not readily observable in the tax data. They can be, instead, determined using a threshold change in Form W2 counts or some alternative metric. However, employees affected by mass layoffs or plant closures are often offered a continuation of benefits, including health insurance, for an extended period that can last several years after the job loss. This creates potential mismatch in the timing for associating job separation with a dropped employer plan.

prior year. These policyholders comprise roughly 8% of the 132 million people who had any coverage from an employer health plan in 2016 (Lurie and Pearce, 2021).

Overall, policyholders who separate from an employer plan skew slightly male and are more likely to be unmarried in the year prior to separation. The majority of policyholders are between the ages 26 and 44, when typical life-cycle changes create higher employment volatility. These policyholders earned an average of $62,145 in wages in the year prior to separation, compared to the median household income that year of $56,516 (Proctor, Semega and Kollar, 2016). The average duration of uninsurance for all policyholders is 3.7 months and 15.3% of policyholders who separate from an employer plan also claim unemployment benefits.

Column (1) also contains information on households' average Modified Adjusted Gross Income (MAGI) as a share of the Federal Poverty Limit (FPL) in 2015.[12] This benchmark takes into account household composition and determines eligibility for both Medicaid and subsidized exchange coverage. Individuals with a MAGI less than 138% of the FPL are eligible for Medicaid in expansion states, while individuals with a MAGI between 138% and 400% of the FPL are likely to be eligible for Premium Tax Credits (PTC) to offset the cost of purchasing health insurance through the marketplace.[13] The distribution of MAGI as a share of FPL in the year before separation implies that roughly 10% of policyholders would have qualified for Medicaid in an expansion state and 46.9% would have qualified for a Premium Tax Credit.

[12]The Poverty Guidelines are issued each year by the Department of Health and Human Services (HHS) and are used for administrative purposes to determine eligibility for certain programs. In 2015, the poverty threshold for a single-person household was set at income below $11,770. A four-person household faced a poverty threshold of $24,250. Full details of the 2015 poverty guideline appeared in the *Federal Register* on January 22, 2015.

[13]Note that the PTC *amount* is based on the difference between a reference premium policy, known as the second lowest cost silver plan (SLCSP), and the maximum required contribution the household is needs to pay for premiums. Hence, some people in the 138% to 400% of FPL might not get PTC if their required contributions exceed the SLCSP.

Columns (2) and (3) of Table 1 report these same statistics for those who live in expansion and non-expansion states, respectively. In general, policyholders who separate from an employer plan in non-expansion and expansion states look similar with respect to their gender and age compositions. Policyholders are slightly more likely to to be married (i.e., a joint filer) in non-expansion states, though the average rates are relatively comparable.

Characteristics related to earnings and unemployment, however, differ by state expansion status. Those in expansion states earn higher wages ($65,554 compared to $57,157) and are less likely to qualify for the Premium Tax Credit because they earn more than 400% of the Federal Poverty Limit (45.8% compared to 39.4%). In addition, individuals in expansion states are more likely to claim unemployment benefits (17.4% compared with 12.4%).

3.4. Comparison of Tax and Survey Data Describing Coverage Dynamics

Because these data are a relatively new resource, we provide a comparison to previously used publicly available survey data. Many cross-sectional surveys, including the American Community Survey, the Current Population Survey, and the National Health Interview Survey, capture coverage during a reference period such as "ever covered in the past year." These point-in-time measurements can mask considerable coverage instability that occurs throughout the year (Gai and Jones, 2020), making them ill-suited to study high frequency post-separation coverage dynamics.

To our knowledge, only two public use surveys, the Medical Expenditure Panel Survey (MEPS) and the Survey of Income and Program Participation (SIPP), contain longitudinal coverage information throughout the year. However, neither survey is large or detailed enough to study coverage dynamics among those who separate because of unemployment without pooling data across multiple panels or waves of a survey. Both the MEPS and the SIPP contain

longitudinal information about type of coverage (e.g., private or public), but they lack detailed information identifying the source of insurance. Without such identifiers, within-type transitions (for example, moving from one employer plan to another) are unobservable. As we will show, these types of transitions are common during the post-separation period.

Second, the sample size of these surveys are several orders of magnitude smaller than the tax data, making it difficult to observe employer plan separations. The 2016 MEPS data, for example, include roughly 7,000 employer plan policyholders aged 18–62, roughly 700 of whom experience a change in coverage in 2016. Similar to the MEPS, the 2014 SIPP includes roughly 8,000 employer plan policyholders aged 18–62 in its fourth wave, 750 of whom experience a coverage transition in 2016.[14] When limiting their samples to individuals whose coverage changes are due to job loss, the MEPS and the SIPP each contain fewer than 100 observations. Finally, both the MEPS and the SIPP are designed to be *nationally* representative, complicating analyses of state-based Medicaid expansions.[15]

Administrative tax data, by comparison, identify nearly 11 million instances in which a policyholder separates from an employer plan each year. Because the tax data identify the source of insurance, all coverage transitions, including transitions from one employer plan to another, are observed. Moreover, matched information contained on Form 1040 includes an exact address, allowing for a detailed geographic analysis. Finally, the Form 1099-G allows further identification of the subsample of policyholders who both separate from an employer plan and receive unemployment compensation. Focusing on the unemployed, we are left with more than 1.5 million policyholders whom we can then use to causally identify the effect of the Medicaid expansion on insurance dynamics following dropped private coverage.

[14] In addition, unlike the MEPS, the SIPP suffers from a well known "seam" bias, where respondents are asked to report monthly health insurance over a lengthy backward looking period and, as a result, tend to report more changes in coverage toward the beginning of each interview period (Gai and Jones, 2020).

[15] We note that the 2014 SIPP includes enough sample to be representative at the state level for the four largest states (CA, NY, FL, and TX).

4. Uninsurance After Job Loss

For the remainder of the paper, we will focus on the subsample of policyholders who become unemployed around the same time that they separate from their employer policy. Table 2 describes unemployed policyholders based on the duration of uninsurance following their policy separation. Each column reports statistics for policyholders by the number of months before new coverage is observed. We describe those who remain without new coverage for at least 24 months as "Uncovered."

We find that as the duration on uninsurance increases, policyholders are less likely to be female, and less likely to be joint filers. There appears to be positive selection out of uninsurance as prior year wages decline with duration of spell. In addition, a longer duration of uninsurance is associated with an increase in the likelihood that a policyholder is eligible for the Premium Tax Credit based on their prior-year MAGI. Moreover, the majority of policyholders are employed in the year following separation, regardless of the duration of uninsurance, suggesting a decoupling between regaining coverage and regaining employment. Finally, roughly 6% of unemployed policyholders who separate from an employer plan remain uncovered for a span of at least 24 months, a signal of persistent uninsurance.[16] Nearly three-quarters of the persistently unemployed policyholders, however, are employed (71.4%) one year after separation.

Table 3 describes policyholders who become unemployed based on their first source of coverage. Here we see the dominance of employer health insurance as a first source of coverage; 68% of policyholders find new coverage through an employer plan, and their average duration of uninsurance is 3.82 months. At the same time, Medicaid provides a first source

[16]Note that many unemployed policyholders who transition out of uninsurance return to it at a later date, so that (as is seen below) the fraction of unemployed policyholders who are uninsured 24 months post-separation substantially exceeds the fraction who are uninsured the entire 24 months.We characterize transitions in and out of uninsurance later in this section through Markov transition matrices.

of coverage for a non-trivial fraction of policyholders (23%), and the duration of uninsurance for those who move to Medicaid is almost one month *shorter* than those whose first source of coverage is a new employer plan. Moreover, most of those who turn to Medicaid as a first source of coverage are employed (83.7%), consistent with other data sources highlighting high employment rates of Medicaid recipients.[17]

Figure 1 shows the point-in-time composition of insurance for each month in the full 24 month post-separation window. The figure categorizes individuals into one of four coverage groups: employer health plan, Medicaid, marketplace plan, or uncovered, and highlights three important facts. First, 34% of individuals who separate from an employer plan move to a new employer plan immediately; these transitions are often missed in survey data, which capture transitions across types of coverage (e.g., private, public) without regard to specific insurer. Second, Medicaid covers an additional 15% of policyholders immediately after their employer coverage was dropped. Third, the first year after separation sees a substantial reduction in the uninsurance rate; more specifically, the share of uninsured policyholders drops by 31% between month one and month twelve (from 48% to 33%). This coverage gain largely stems from employer plans; by comparison, Medicaid coverage appears stable during these first twelve months.

4.1. Coverage Stability

As seen in Figure 1, the majority of individuals (52%) find new coverage shortly after separating from a plan. However, this figure masks flows between different types of coverage which has implications for the stability of new coverage. To fill these gaps, Table 4 reports the

[17] See, for example, https://www.kff.org/medicaid/issue-brief/understanding-the-intersection-of-medicaid-work-a-look-at-what-the-data-say/

likelihood of transitioning from one source of coverage to another source one month ($m+1$) or six months later ($m+6$).

Month-to-month coverage exhibits high levels of stability: 96%, 91%, and 95% of those covered by an employer plan, a marketplace plan, and Medicaid, respectively, are likely to have the same source of coverage one month later. At the same time, uninsurance is also persistent: 89% of those who are uncovered in month m are also uncovered in month $m+1$.

When looking six months into the future, employer plans emerge as a stable source of coverage: 82% of those covered by an employer plan in month m are covered by an employer plan in month $m+6$. Across any six-month period, individuals transition from other sources of coverage to an employer plan. For example, 31% of those covered by Medicaid and 41% of those covered by an exchange plan move to an employer plan six months later. Moreover, 43% of the uncovered move to an employer plan six months later. Medicaid also remains a stable source of coverage. 61% of those covered by Medicaid remain on Medicaid six months later, and just 7% move from Medicaid to an uninsured state. Finally, 46% of those covered by an exchange plan remain on their exchange plan six months later.

4.2. Factors Associated with Exits from Uninsurance

Next, we use a regression framework to characterize the dynamic process of regaining insurance and the extent to which these dynamics are correlated with observable characteristics. In particular, we estimate whether age, income, gender, and marital status are associated with the decision to obtain insurance coverage. Age and gender have implications for expected health costs, and income and marital status correlate with differences in an individual's access to insurance. We are also interested in how these dynamics relate to the ACA's Medicaid

expansion, which dramatically increased access to insurance (Frean, Gruber and Sommers, 2017).

We estimate the following OLS model:

$$Y_i = \mathbf{X}_i\beta + \phi_m + u_i,$$

where Y_i is one of two outcomes: (1) an indicator for obtaining coverage one month after separation, or (2) the duration of uninsurance, measured in months.[18] $\mathbf{X}_i$ captures demographic characteristics of the policyholder i: gender, filing status, wages, age, and access to Medicaid expansion. Filing status, wages, and access to the Medicaid expansion are all measured in 2015, the year prior to separation. All specifications include fixed effects for the month in which the policy separation occurred, ϕ_m. In Appendix A, we present results for the full population of policyholders who separate from an employer plan.[19]

As is common with duration data, the probability of regaining insurance is unlikely to remain constant over time. Moreover, our finite post-separation observation period (twenty-four months) induces right-censoring in our data: we do not observe the coverage event for the roughly 6% of individuals who take longer than twenty-four months to exit uninsurance. Accordingly, we estimate a Cox Proportional Hazard model, which takes into account these features of the data, to measure the impact of observable characteristics on the hazard ratio, i.e., the probability of finding coverage within an additional unit of time conditional on not having found coverage to that point. Appendix Section B provides additional background information on the Cox Proportional Hazard Model.

[18] As is common when studying dynamic processes, duration is right-censored data; persons who do not regain coverage after twenty-four months are coded as having a duration of uninsurance of twenty-four months. As described shortly, we explicitly account for this data anomaly using a survival model.

[19] When the sample is not restricted to the unemployed, we include a dummy variable in the regression that identifies unemployment insurance receipt in 2016 or 2017.

Table 5 reports our OLS and hazard model estimates describing the dynamics of regaining health insurance coverage.[20] Column (1) reports estimates of the likelihood of regaining coverage one month after separation, column (2) reports estimates of the duration of uninsurance in months, and column (3) reports estimates of the instantaneous likelihood of regaining coverage based on the Cox Proportional Hazard Model.

Column (1) shows that, one month after separation, women are 8.4 percentage points more likely to regain coverage than men and joint filers are 16 percentage points more likely to regain coverage than non-joint filers; differences by age and earnings, on the other hand, are minimal. When measured across the entire 24-month post-separation observation window (col 3), we find that women are 19.8% more likely to find coverage and joint filers are 32.8% more likely to find coverage. These increased probabilities of regaining coverage also translate to shorter spells of uninsurance: women experience a 3.976 month shorter duration of uninsurance, and married individuals experience a 4.308 month shorter uninsurance spell (col 2).

At the same time, the single largest determinant of whether an individual finds new coverage and the duration of uninsurance relates to whether she lives in a Medicaid expansion state. We estimate that individuals living in a Medicaid expansion state prior to their policy separation were 15.9 percentage points more likely to find coverage within a month (col 1) — and, more generally, were 36% more likely to find coverage when taking into account the full 24-month post-separation period (col 3). This translates to a 6.689 month shorter spell of uninsurance (col 2).

[20] Appendix Table A1 reports results for the full population of policyholders who separate from an employer plan, regardless of whether they become unemployed.

4.3. Dynamics by Medicaid Expansion Status

As shown in Table 5, variation due to state-based Medicaid expansions is a strong factor in predicting the probability of regaining insurance. We further explore this prediction by reproducing Figure 1 but now splitting by expansion and non-expansion states. Thus Figure 2 shows coverage sources in two years after losing employer coverage for those who lived in an expansion state (panel a) or a non-expansion state (panel b) in the year prior.

A comparison of panels a and b of Figure 2 highlights two dramatic differences in the post-separation coverage dynamics. First, the share of those in non-expansion states who transition to uninsurance one month after separation from an employer plan is 38% larger than in expansion states.[21] This gap grows to 50% when measured twenty-four months after separation;[22] in other words, individuals in expansion states are both more likely to immediately find coverage and, conditional on transitioning to uninsurance, regain coverage more quickly. Second, while employer plan coverage rates are similar across the two groups throughout the post-separation period,[23] Medicaid plays an outsized role as a source of coverage in expansion states.[24] In particular, Medicaid is three times as likely to be the source of coverage in every month throughout the 24-month post-separation observation period.

Finally, Table 6 reports the six-month transitions across coverage types for Medicaid expansion and non-expansions states, respectively.[25] The persistence of uninsurance is 15%

[21] 58% of policyholders who separate are uncovered in expansion states, compared with 42% in non-expansion states.

[22] 27% of policyholders who separate are uncovered 24 months later in expansion states compared with 18% in non-expansion states.

[23] 36% are covered by an employer plan one month after separation in expansion states compared with 30% in non-expansion states. 24 months later, 61% are covered by an employer plan in expansion states compared with 59% in non-expansion states.

[24] A similar result is found for the full sample when looking at differences by Medicaid expansion and non-expansion states. These results are presented in Appendix Figure A1.

[25] The one-month transitions are given in Table A5 and reveal similar dynamics across expansion and non-expansion states.

higher in non-expansions states compared to expansion states (51% vs. 44%). This 7-percentage-point difference in persistence is almost entirely driven by increased use of Medicaid six months later in expansion states (10% vs. 3%). In addition, Medicaid coverage appears to be more stable in expansion states, with 62% of those with Medicaid coverage in month *m* having Medicaid coverage 6 months later compared with just 55% in non-expansion states.

Though these estimates are not causal, they provide descriptive evidence of observable, likely determinants of the duration of uninsurance spells following separation from an employer policy. Moreover, they provide compelling stylized facts that suggest a causal effect of the Medicaid expansion on the post-separation coverage dynamics for those who separate from an employer plan.

5. The Causal Effect of Medicaid on Uninsurance

In this section, we provide causal evidence for the impact of the Affordable Care Act's Medicaid expansion on post-separation coverage dynamics. We do so by leveraging variation from two separate sources. First, we measure the impact of Virginia's 2019 Medicaid expansion, In addition, we will exploit the COVID-19 pandemic to measure differences in coverage dynamics by Medicaid expansion in the face of a widespread unemployment. The onset of the COVID-19 pandemic in March of 2020 induced a widespread retrenchment of economic activity, which resulted in a 10 percentage point jump in the U.S. unemployment rate between March and April 2020. Our data confirm that this spike in unemployment was associated with a 15% jump in the number of individuals separating from an employer policy.[26] Although not causal, the pandemic provides a broad-based shock to employment irrespective of local

[26]The administrative tax data from 2018 and 2019 show that roughly 700,000 people typically separate from an employer plan each March. In March 2020, this number jumped to roughly 810,000.

labor market conditions and can therefore allow for a unique comparison of post-separation coverage across states.

5.1. Data and Methods

We construct two additional datasets to be used in their respective quasi-natural experiments following a procedure that parallels the description given in Section 3. In particular, for both analyses we identify policyholders aged 18–62 who separate from their employer plan and who had been covered by that plan for at least 12 months prior.

2019 Virginia Medicaid Expansion Analysis Sample To study the Virginia Medicaid expansion, we focus on policyholders who lived in Virginia (treated group) and in other non-expansion states (control group) in the year before their separation. We further restrict all policy separations to those who had received unemployment income in the year of their separation.[27] Next, we restrict our analysis to separations that take place between January and June of 2019, that is, one to six months after the Virginia Medicaid expansion, and to separations that take place during these same months in 2018. Finally, we limit our post-separation observation period to December of the separation year.[28] This truncation prevents our post-separation observation period from being contaminated by the onset of the pandemic in 2020.[29]

[27] For the VA Medicaid expansion, we define the unemployed as those who receive unemployment benefits in the year of their separation (2019). This is in contrast to our earlier definition in Section 4, where we categorize a policyholder as unemployed if she received unemployment benefits in either the year of, or the year after, separation. We make this change in order to avoid claiming that takes place in 2020 when the pandemic led to large changes in the U.I. system.

[28] For example, we identify individuals who separate from an employer plan between January and June of 2019, and we follow their post-separation monthly coverage through December 2019.

[29] Importantly, the Cox Proportional Hazard model used in estimating the instantaneous likelihood of regaining coverage accounts for the right-censoring of data and mitigates concerns about our truncated post-period.

2020 Pandemic Analysis Sample To study the effect of living in an expansion state during the COVID-19 shock, we identify policyholders who separate from an employer plan in March of 2018, 2019, and 2020. Unlike our previous analyses, we do *not* restrict to the subsample of unemployed individuals based on the receipt of unemployment benefits. We make this choice for two reasons. First, we hypothesize that the excess separations in March 2020 reflected the exogenous onset of the pandemic rather than endogenous employer or plan separations. Second, issues with accessing unemployment benefits and temporary changes to the unemployment system during the pandemic likely introduce compositional differences among those who take-up of benefits across years.

Empirical Model We estimate the causal effect of the Medicaid expansion in Virginia using the equation below:

$$Y_i = \beta_0 + \beta_1 \, Treat_i + \beta_2 \, Post_i + \beta_3 \, Treat_i \times Post_i + \Gamma_i + \varepsilon_{it}, \tag{1}$$

where $Treat_i$ is a dummy variable identifying separated policyholders living in Virginia, and $Post_i$ is a dummy variable identifying policyholders who separate from their plan in 2019, after the Medicaid expansion. We estimate a similar model to measure differences in coverage dynamics during COVID-19 between expansion and non-expansion states. In this analysis, we define $Treat_i$ as a dummy variable identifying policyholders who separate from their plan in any expansion state (including Virginia), and $Post_i$ as a dummy variable identifying policyholders who separate from their plan in March 2020. In both models, Y_i represents a dummy indicating that coverage is regained in the month after separation or the total number of observed months of uninsurance. The vector Γ_i includes controls for demographic characteristics of the policyholder based on a series of fixed effects identifying gender, joint-filing, and month of separation, as well as continuous controls for age and wages earned in the year before sep-

aration. The coefficient, $\hat{\beta}_3$, captures the causal effect of expanded Medicaid on outcome Y_i in the case of the Virginia expansion and measures differences in outcome Y_i between Expansion and non-Expansion states in the case of the COVID analysis.

We study the effect of Medicaid access on the instantaneous likelihood of finding new coverage. We incorporate a difference-in-differences like approach into a Cox Proportional Hazard Model:

$$h(m|x_j) = h_0(m)\exp(\beta_0 + \beta_1\, Treat_i + \beta_2\, Post_i + \beta_3\, Treat_i \times Post_i + \Gamma_i + \varepsilon_{it}). \qquad (2)$$

In this model, $\hat{\beta}_3$ captures how the hazard ratio is affected by the expanded Medicaid. As before, the vector Γ_i controls for gender, joint-filing, month of separation, age, and wages from the year before separation.

We additionally explore the extent to which the Medicaid expansion affects the composition of new coverage. If our estimated effects of overall coverage changes are driven by the Medicaid expansion, then we should expect to see an increase in the likelihood that Medicaid serves as a first source of coverage.

5.2. Results

Table 7 provides summary statistics for our two sets of analyses. All summary statistics are measured one year prior to separation. Columns (1) and (2) describe unemployed policyholders who separate from an employer plan in 2018, the year prior to treatment, in Virginia (treated) and in non-expansion states (control), respectively. By and large, policyholders in treated and control groups are not qualitatively different in the year prior to treatment; roughly 47% are female, 35% are joint filers, and, on average, policyholders are 43 years old. Individ-

uals in non-expansion states earned slightly less in wages prior to their separation ($53,797 compared with $59,207).

Columns (3) and (4) of Table 7 report summary statistics for policyholders who separate in an expansion state (treated) compared to non-expansion states (control) in 2018 and 2019, the years prior to the pandemic. Overall these groups look similar across gender, age, and filing status; as before, wages earned in non-expansion states are on average 12% less than wages earned in expansion states ($62,064 compared to $70,517).

Results from these two quasi-experiments are reported in Table 8. Panel A reports estimates of the effect of the Virginia Medicaid Expansion, and Panel B reports estimates of the effect of Medicaid expansion during the pandemic. Columns (1)–(3) report the effect of the Medicaid expansion on the likelihood of finding insurance one month after separation, the duration of uninsurance, and the hazard ratio. Columns (4)–(6) report the likelihood that the first source for those who find coverage by December is either a new employer plan, Medicaid, or an Exchange policy, respectively. In all cases, robust standard errors are reported in parentheses.

We estimate that the Virginia Medicaid expansion increased the likelihood of finding coverage one month after separation by 16% (6.51 percentage points/40.7%, panel A col 1). In addition, we find that the Medicaid expansion reduced the duration of uninsurance by 12% (-0.477/4.097 months, panel A col 2). Finally, we find that the instantaneous likelihood of regaining coverage increased by 16.1% (panel A col 3).

Conditional on regaining coverage, we estimate differences in the first source of new coverage following a separation; if reduced duration of uninsurance is caused by the Medicaid expansion, we would expect to see an increase in the likelihood that Medicaid serves as the first source of coverage. Consistent with this assumption, we find a 13.7 percentage point in-

crease in the likelihood that Medicaid serves as the first source of coverage. At the same time, we estimate a 9.35 percentage point reduction in the likelihood that an employer policy serves as the first source of coverage and, likewise, a 2.90 percentage point reduction for exchange policy. These estimates are consistent with a hypothesis that the Medicaid expansion shifted some individuals from employer plans and exchange policies to Medicaid.

Panel B of Table 8 reports estimates of the effect of the Medicaid expansion on the post-separation coverage dynamics of policyholders who separate from an employer plan during the pandemic. We note that the context of this analysis is quite different from the Virginia Medicaid expansion. In the case of the pandemic, we are studying post-separation coverage dynamics in an environment with limited mobility due to stay-at-home orders and a widespread shutdown of in-person government services, including Medicaid enrollment offices. All else equal, these changes may have induced large frictions in the ability of individuals to enroll in new health plans.

Nonetheless, we find that individuals in Medicaid expansion states still fare better with regards to post-separation coverage dynamics than did individuals in non-expansion states. We estimate that the Medicaid expansion increased the likelihood that policyholders regained coverage in April 2020 by 0.9 percentage points. Although this estimate is quantitatively small (1.2%), we argue that it is still economically meaningful given the severe hurdles to accessing services. When measured through the end of 2020, the Medicaid expansion reduced the duration of uninsurance by 5% (0.140 months/2.719 months) and increased the instantaneous likelihood of regaining coverage by 4.5%. All estimates are statistically significant at the 1 percent level.

Finally, we find that the Medicaid expansion increased the likelihood of Medicaid as a first source by 2.64 percentage points. This increase is paired with a 2.14 percentage point reduction in the likelihood of coverage by an employer plan and a 0.752 percentage point

reduction in the likelihood of coverage by an exchange plan. In other words, we again find that the Medicaid expansion reduced the duration of uninsurance and increased the likelihood of coverage by increasing the likelihood of Medicaid as a first source of coverage.

6. Discussion

Our evidence demonstrates that the Medicaid expansion, incentivized by the ACA and taken up by certain states, expands the social safety net to those who experience a job loss. We present a number of novel descriptive statistics characterizing coverage dynamics for those who involuntarily drop their employer health coverage. Previous work on the role of Medicaid in improving coverage instability generally focuses on the chronically low-income population. In contrast, we show that the 60% of individuals in the U.S. covered by an employer plan are also susceptible to coverage instability, in part due to labor market dynamics. Among policy holders who both separate from an employer plan and become unemployed, we document the average duration of uninsurance, the sources of coverage during that time, and the likelihood of transitions across different types of coverage.

We provide, for the first time, causal estimates of the effect of the Medicaid expansion on high-frequency coverage dynamics. Our estimates leverage two compelling sources of variation: a positive shock to access (the 2019 Virginia Medicaid expansion) and a negative shock to employment (the onset of the COVID-19 pandemic). First, we find that the state-wide Medicaid expansion in Virginia increased the likelihood of regaining coverage by 16% for Virginians who lost their employer plan. Second, we find that the ACA's Medicaid expansion increased the likelihood of regaining insurance coverage by 5% for those who experienced large-scale job loss caused by the onset of the pandemic. This latter positive finding was in spite of an unprecedented negative shock to the accessibility of government services, partic-

ularly during the early months of the pandemic. Across both sources of variation, we find causal evidence that Medicaid decreases the duration of uninsurance for a broader population after losing employer coverage.

In general, shorter spells of uninsurance reduce exposure to financial risk that results from unexpected medical expenses. Although many Americans without insurance may forgo or delay medical care, for those facing acute health shocks, costly treatment may be unavoidable. Consistent with this assumption, Gross and Notowidigdo (2011) finds that pre-ACA Medicaid expansions reduced the likelihood of personal bankruptcy, and Hu et al. (2018) and Kuroki (2021) find evidence that the ACA Medicaid expansion improved financial well-being among likely-eligible populations. In addition to reduced exposure to financial risk, the availability of Medicaid can allow for better job matches among the unemployed searching for new employment if, for example, in its absence, individuals choose less appropriate jobs for the access to health insurance. Although beyond the scope of this paper, future research may investigate whether the broader availability of Medicaid leads to higher match quality and higher earnings.

7. Conclusion

In this paper, we present comprehensive evidence describing the coverage dynamics of employment-based policy holders following a loss in coverage. This evidence sheds light on dynamics that affect a broad portion of the U.S. population — more than 50% of adults are covered by an employer plan and, in any given month, we estimate that roughly 2% will separate from their plan. Our analysis leverages novel comprehensive coverage reporting available in the administrative tax data.

Focusing on those that likely lost their coverage for exogenous reasons, we show that 15% are covered by Medicaid one month after having separated from their employer plan; thus highlighting the importance of the Medicaid social safety net for the broad populace. In addition, we show that those in Medicaid expansion states are three times more likely to be covered by Medicaid through-out a 24-month post-separation observation window. Finally, we estimate the causal effect of expanding Medicaid on post-separation coverage dynamics using a difference-in-differences strategy that leverages two sources of variation: 1) variation in access to Medicaid driven by the 2019 Virginia Medicaid expansion and 2) variation in employment driven by the onset of the COVID-19 pandemic. In both cases, we find that Medicaid expansion increases the likelihood of finding coverage and reduces the duration of uninsurance.

During the pandemic, the Federal government provided an unprecedented level of support for health insurance coverage by requiring Medicaid to keep beneficiaries continuously enrolled. Kaiser Family Foundation estimates that Medicaid enrollment increased by 32% (23 million enrollees) between February 2020 and March 2023.[30] Dague et al. (2022) finds that this increase was largely due to the continuous enrollment provision. In April, 2023, the continuous enrollment requirement expired. The Urban Institute estimated that as many as 16 million enrollees would lose Medicaid coverage (Buettgens Matthew and Green Andrew, 2022), and Dague, Burns and Friedsam (2022) estimates that just one-third of enrollees who lose public insurance will move to a private policy, and the remaining two-thirds will experience a coverage gap. The pandemic-era continuous enrollment policy highlights an expanded role that Medicaid can play during periods of economic downturn. While the chronically low-income population is usually seen as the primary beneficiary of Medicaid, eligibility for Medicaid depends on *monthly* income. As such, individuals who separate from an employer

[30] See https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-the-unwinding-of-the-medicaid-con

plan due to job loss may be exposed to periods of low, or even zero, monthly income, deeming them eligible for Medicaid. Accordingly, our work shows that Medicaid offers a valuable source of coverage to this group, extending the social safety net wider than was previously understood.

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Table 1
Individuals Who Separate From an Employer Plan in 2016

	Population (1)	Expansion (2)	Non-Expansion (3)
Female	0.456	0.458	0.456
Joint Filer	0.424	0.416	0.437
Age			
18–25	0.0916	0.0880	0.0938
26–44	0.549	0.553	0.544
46–62	0.360	0.359	0.363
2015 Wages	62145.2	65553.5	57166.6
Unemployed	0.153	0.174	0.124
Employed in 2017	0.912	0.914	0.909
2015 MAGI			
$<$ 100% FPL	0.0493	0.0458	0.0531
100–138%	0.0509	0.0450	0.0592
138–400%	0.469	0.452	0.494
$>$ 400% FPL	0.431	0.458	0.394
Covered Month 1	0.659	0.696	0.605
Duration	3.698	3.176	4.423
Never Covered	0.052	0.038	0.071
N	10,681,033	6,251,960	4,391,433

Notes: This table summarizes our primary analysis sample — policy holders aged 18–62 who separate from an employer plan in 2016. Modified Adjusted Gross Income relative to the Federal Povery Limit (FPL) is based on 2015 income and houeshold size. Joint filer status is measured in 2015. The share of unemployed individuals are identified as those who receiving income reported on Form 1099-G in either 2016 or 2017. Post separation monthly coverage observed for 24 months. Coverage and duration information is based on monthly coverage reported on Forms 1095-A, -B, and -C.

Table 2
First Month of Coverage: Policy Holders Who Become Unemployed

	First Month of Coverage					
	1	3	6	12	24	Uncovered
Female	0.447	0.417	0.393	0.360	0.325	0.313
Joint-Filer	0.442	0.355	0.300	0.269	0.227	0.235
Aged 18–25	0.0761	0.0457	0.0499	0.0516	0.0639	0.0539
Aged 25–44	0.507	0.534	0.531	0.545	0.538	0.512
Aged 45–62	0.417	0.420	0.419	0.403	0.398	0.434
2015 Wages	$57,208	$57,595	$54,073	$52,415	$47,118	$46,192
2015 MAGI						
<100% FPL	0.0655	0.0262	0.0303	0.0334	0.0408	0.0424
100–138% FPL	0.0655	0.0419	0.0469	0.0502	0.0623	0.0697
138–400% FPL	0.461	0.529	0.554	0.577	0.610	0.619
> 400% FPL	0.408	0.403	0.368	0.339	0.287	0.268
Employed, 2017	0.894	0.915	0.916	0.912	0.822	0.714
First Source of Coverage						
Employer Plan	0.646	0.673	0.725	0.740	0.727	-
Marketplace	0.0512	0.161	0.0846	0.0810	0.0825	-
Medicaid	0.279	0.136	0.174	0.160	0.162	-
N	855,692	105,881	44,416	18,051	4,898	102,986

Notes: This table summarizes policy holders who receive unemployment income in 2016 or 2017 based on the first month that we observe coverage after a separation from an employer plan 2016. See also Table 1 notes.

Table 3
First Source of Coverage: Policy Holders Who Become Unemployed

	First Source of Coverage		
	Employer	Medicaid	Marketplace
Female	0.398	0.526	0.484
Joint Filer	0.433	0.244	0.407
Aged 18–25	0.0680	0.0762	0.0192
Aged 26–44	0.512	0.581	0.409
Aged 45–62	0.420	0.343	0.571
2015 Wages	61,590	37,588	59,646
2015 MAGI			
<100% FPL	0.0269	0.136	0.0242
100–138% FPL	0.0385	0.132	0.0351
138–400% FPL	0.469	0.587	0.519
> 400% FPL	0.465	0.145	0.422
Employed, 2017	0.938	0.837	0.804
Duration of Uninsurance	3.820	2.927	3.895
N	1,020,457	351,491	124,668

Notes: This table summarizes policy holders who receive unemployment income in 2016 of 2017 based on their first source of coverage after a separation from an employer plan in 2016. See also Table 1 notes.

Table 4
Monthly Source of Coverage, Unemployed: Transitions to $m+1$ and to $m+6$

	$m+1$				$m+6$			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	89%	8%	1%	2%	47%	43%	3%	7%
Employer	3%	96%	<0.5%	0.5%	12%	82%	2%	4%
Marketplace	3%	5%	91%	5%	8%	41%	46%	5%
Medicaid	2%	2%	<0.5%	95%	7%	31%	1%	61%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016 and are also unemployed. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month *m* to month $m+1$.

Table 5
2016 Post-Separation Coverage Dynamics: Policy Holders Who Become Unemployed

	1 Month	Duration	Cox
	(1)	(2)	(3)
Female	0.0840***	-3.976***	1.198***
	(0.000782)	(0.0372)	(0.00198)
Joint Filer	0.160***	-5.308***	1.328***
	(0.000818)	(0.0389)	(0.00229)
Age	-0.00182***	0.0746***	0.997***
	(0.0000358)	(0.00170)	(0.0000761)
2015 Wages	0.0000881***	-0.0151***	1.000***
	(0.00000652)	(0.000310)	(0.00000737)
Medicaid Expansion State	0.159***	-6.689***	1.360***
	(0.000809)	(0.0385)	(0.00238)
Month Fixed Effects	✓	✓	✓
N	1,633,155	1,633,155	1,633,155

Notes: This table reports results results from a Linear Probability Model (cols 1 and 2) and a Cox Proportional Hazard model (col 3) describing the likelihood of finding health insurance coverage after a policy holder separates from an employer in 2016. Analysis is based on policy holders who separate from an employer plan in 2016 and become unemployed in 2016 or 2017. Post separation monthly coverage is observed for 24 months for all individuals in this analysis. All specifications include monthly fixed effects identifying the month of separation in 2016. See Section 3 for more details.

Table 6
Monthly Source of Coverage by Medicaid Expansion, Unemployed: Transitions to $m+6$

	Expansion				Non-Expansion			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	44%	44%	3%	10%	51%	43%	3%	3%
Employer	11%	83%	2%	45%	16%	81%	2%	2%
Marketplace	7%	41%	45%	7%	10%	40%	48%	2%
Medicaid	7%	31%	1%	62%	12%	32%	1%	55%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016 and also become unemployed. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month m to month $m+6$ separately in expansion states and non-expansion states.

Table 7
Summary Statistics, Pre-Treatment Year

	Virginia Expansion		COVID-19 Pandemic	
	Virginia (1)	Non-Expansion (2)	Expansion (3)	Non-Expansion (4)
Female	0.476	0.469	0.442	0.448
Joint Filer	0.348	0.351	0.395	0.418
Age	43.59	43.27	39.96	40.31
Wages	59,207	53,797	70,517	62,064
Covered in $t+1$	0.407	0.351	0.646	0.547
Duration of Uninsurance	4.097	4.482	2.719	3.411
Never Covered	0.276	0.325	0.142	0.218
N	12,710	194,484	1,401,798	807,586

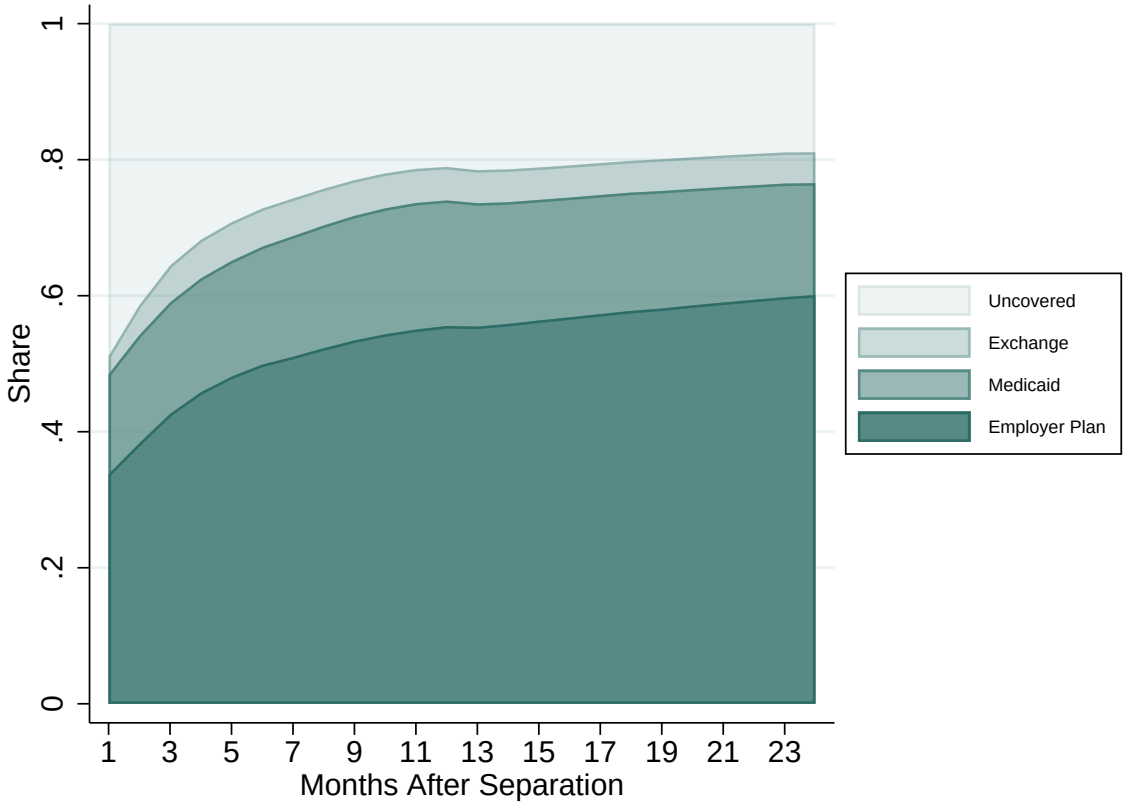
Notes: This table summarizes our primary analysis sample for our difference-in-differences analysis. Treated individuals are those who separate from an employer plan after Medicaid expansion in Virginia. Control individuals separate during these same months in non-expansion states. Post-separation coverage observed through the end of the same calendar year as separation. See also Table 1 for more details.

Table 8
Effect of Medicaid Expansion

	Coverage Dynamics			First Source of Coverage		
	1 Month	Duration	Cox	Employer Plan	Medicaid	Exchange
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Virginia Medicaid Expansion						
2019 × VA	0.0651***	-0.477***	1.161***	-0.0935***	0.137***	-0.0290***
	(0.00629)	(0.0437)	(0.0180)	(0.00597)	(0.00456)	(0.00369)
N	402,173	402,173	402,173	306,477	306,477	306,477
Panel B: COVID						
2020 × Expansion	0.00922***	-0.140***	1.045***	-0.0214***	0.0264***	-0.00752***
	(0.00115)	(0.00744)	(0.00285)	(0.00106)	(0.000936)	(0.000528)
N	3,418,681	3,418,681	3,418,681	2,734,010	2,734,010	2,734,010

Notes: This table reports the effect of Medicaid Expansion on post-separation coverage dynamics using a difference-in-differences identification strategy. Panel A reports estimates of the Virginia Medicaid expansion on January 1, 2019. See Section 5 for more details. Panel B reports estimates of the effect of the Medicaid expansion at the onset of the COVID pandemic. See Section **??** for more details.

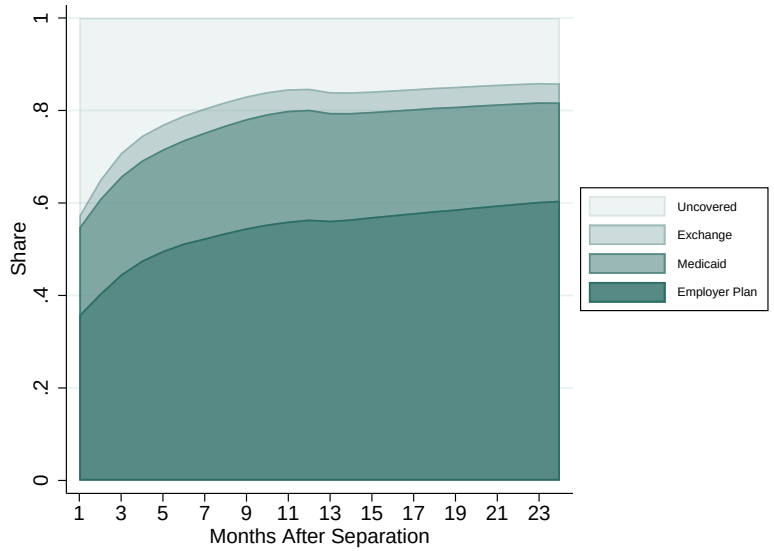
Figure 1. Post-Separation Coverage: Policy Holders Who Become Unemployed



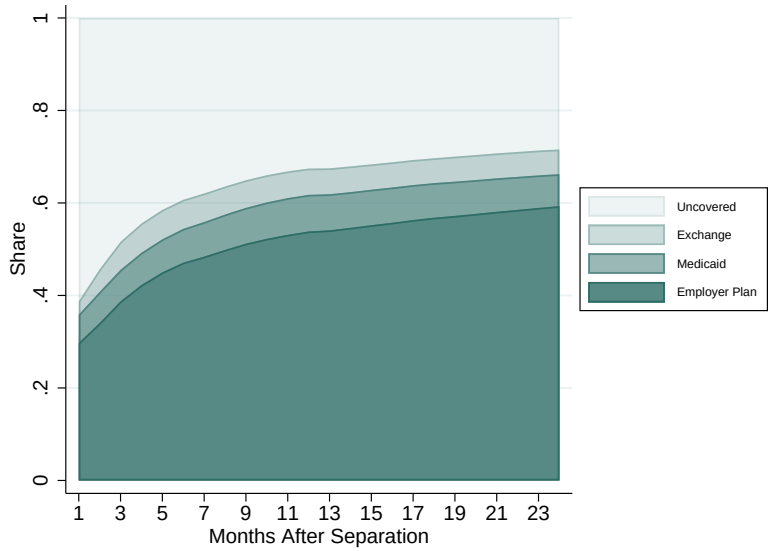
Notes This figurs depict the composition of sources of health insurance coverage in each of the 24 months after a policy holder who becomes unemployed separates from an employer plan in 2016.

Figure 2. Post-Separation Coverage: Policy Holders Who Become Unemployed

(a) Medicaid Expansion



(b) Medicaid Non-Expansion

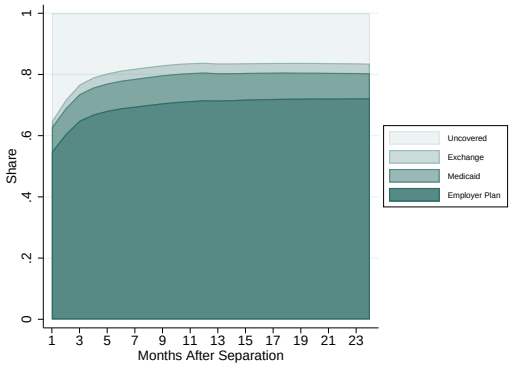


Notes These figures depict the composition of sources of health insurance coverage in each of the 24 months after a policy holder who becomes unemployed separates from an employer plan in 2016 based on whether the policy holder lived in an expansion state (panel a) or a non-expansion state (panel b).

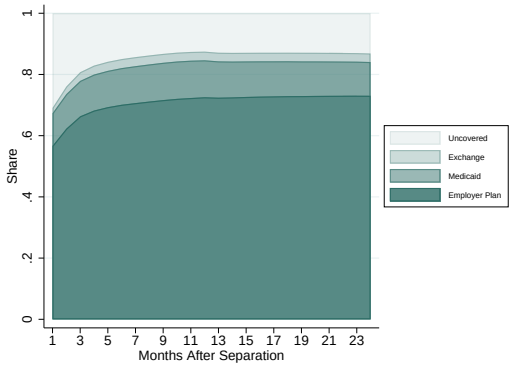
A. Appendix Tables and Figures

Figure A1. Post-Separation Coverage: All Policy Holders

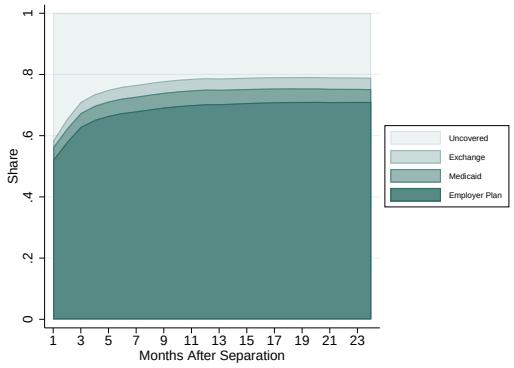
(a) All Policy Holders



(b) Medicaid Expansion



(c) Medicaid Non-Expansion



Notes These figures depict the composition of sources of health insurance coverage in each of the 24 months after a policy holder who becomes unemployed separates from an employer plan in 2016.

Table A1
2016: Post-Separation Coverage Dynamics

	1 Month	Duration	Cox
	(1)	(2)	(3)
Female	0.0434***	-2.941***	1.116***
	(0.000286)	(0.0132)	(0.000710)
Joint Filer	0.136***	-4.305***	1.234***
	(0.000299)	(0.0138)	(0.000821)
Age	0.00100***	0.0201***	1.000***
	(0.0000131)	(0.000604)	(0.0000292)
2015 Wages	0.0000263***	-0.00100***	1.000***
	(0.000000574)	(0.0000265)	(0.000000275)
Medicaid Expansion State	0.102***	-3.903***	1.184***
	(0.000289)	(0.0133)	(0.000765)
Concurrently Unemployed	-0.161***	2.361***	0.841***
	(0.000396)	(0.0183)	(0.000747)
Month Fixed Effects	✓	✓	✓
N	10,643,393	10,643,393	10,643,393

Notes: This table reports results results from a Linear Probability Model (cols 1 and 2) and a Cox Proportional Hazard model (col 3) describing the likelihood of finding health insurance coverage after a policy holder separates from an employer in 2016. Analysis is based on policy holders who separate from an employer plan. Post separation monthly coverage is observed for 24 months for all individuals in this analysis. All specifications include monthly fixed effects identifying the month of separation in 2016. See Section 3 for more details.

Table A2
Monthly Source of Coverage: Transitions to $m+1$ and to $m+6$

	$m+1$				$m+6$			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	89%	8%	1%	1%	49%	43%	3%	5%
Employer	2%	98%	<0.5%	< 0.5%	7%	90%	1%	2%
Marketplace	2%	4%	93%	1%	8%	38%	51%	3%
Medicaid	2%	2%	< 0.5%	95%	8%	30%	1%	61%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month m to month $m+1$.

Table A3
Monthly Source of Coverage by Medicaid Expansion: Transitions to $m+1$

	Expansion				Non-Expansion			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	88%	9%	1%	2%	90%	8%	1%	1%
Employer	2%	98%	<0.5%	<0.5%	2%	98%	<0.5%	<0.5%
Marketplace	2%	4%	93%	1%	3%	4%	93%	<0.5%
Medicaid	2%	2%	<0.5%	96%	3%	2%	<0.5%	95%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month m to month $m+1$.

Table A4
Monthly Source of Coverage by Medicaid Expansion: Transitions to $m+6$

	Expansion				Non-Expansion			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	47%	44%	2%	7%	52%	43%	3%	3%
Employer	6%	91%	1%	2%	8%	90%	1%	1%
Marketplace	7%	39%	50%	5%	9%	38%	52%	2%
Medicaid	7%	30%	1%	62%	12%	29%	1%	58%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month m to month $m+6$.

Table A5
Monthly Source of Coverage by Medicaid Expansion, Unemployed: Transitions to $m+1$

	Expansion				Non-Expansion			
m	Uncovered	Employer	Marketplace	Medicaid	Uncovered	Employer	Marketplace	Medicaid
Uncovered	87%	9%	1%	3%	91%	7%	1%	1%
Employer	3%	96%	<0.5%	1%	4%	96%	<0.5%	<0.5 %
Marketplace	3%	5%	91%	2%	3%	5%	92%	<0.5%
Medicaid	2%	2%	<0.5%	96%	4%	2%	<0.5%	94%

Notes: This table describe the Markov Transition Matrix for policy holders who separate from an employer plan in 2016. Monthly coverage is observed for all policy holders for 24 months after separation. These statistics reflect the likelihood of transitioning across coverage sources from month m to month $m+1$.

B. Survival Models

If M is a non-negative random variable denoting time to regaining insurance, then its survivor function $S(m)$ is defined as follows

$$S(m) = 1 - F(m) = P(M > m),$$

and characterizes the probability of remaining uninsured after month m. Figure **??** depicts a Kaplan-Meir estimate of the survival function for individuals who separate from an employer plan. This graph shows a steep decline in the probability of regaining coverage after the first month that continues to fall over time.

An empirical counterpart to the survivor function is a hazard function, $h(m)$, or the conditional failure rate. The hazard function describing the instantaneous likelihood of regaining coverage, conditional on an individual having been uninsured until month m can be written as follows:

$$h(m) = \lim_{\Delta m \to 0} \frac{Pr(m + \Delta m > M > m | M > m)}{\Delta m} = \frac{f(m)}{S(m)}.$$

We estimate $h(m)$ assuming a Cox proportional hazard model, which is a semiparametric model that is agnostic about the shape of the hazard function and assumes that covariates multiplicatively shift the baseline hazard function.

In discrete time, it is common that subjects are not observed from the onset of risk, $m = 0$. Indeed, this is the case in our dataset–we cannot observe periods of uninsurance that are smaller than one month given the discrete nature of our data. In other words, individuals who go uncovered for a matter of weeks between policies will appear to the econometrician as having regained coverage one month later. However, this does not affect the hazard function, which is an instantaneous rate that is not a function of the past.

The hazard rate for the jth individual in the data is

$$h(m|x_j) = h_0(m) \exp(x_j \beta_x)$$

We include the same covariates in the model for x_j as in the OLS model.

Finally, the interpretation of the estimated coefficients comes from the ratio of two individual hazards:

$$\frac{h(m|x_j)}{h(m|x_m)} = \frac{\exp(x_j \beta_x)}{\exp(x_m \beta_x)}.$$

Exponentiated coefficients are interpreted as the ratio of hazards for a one-unit change in the corresponding covariate. For example, the coefficient for a gender dummy variable, $female$, is interpreted as the ratio of the hazard for women compared to men. When $\hat{\beta} > 1$ ($\hat{\beta} < 1$), this implies that women are more (less) likely than men to regain coverage. Statistical significance is interpreted based on a null hypothesis that the exponentiated coefficient is equal to one. A

rejection of this null hypothesis for the gender dummy would then imply that there is enough statistical evidence to reject the null hypothesis that women and men are equally likely to instantaneously regain coverage.