STATE MEDICAID ELIGIBILITY AND ENROLLMENT POLICIES AND RATES OF MEDICAID PARTICIPATION AMONG DISABLED SUPPLEMENTAL SECURITY INCOME RECIPIENTS

by Kalman Rupp and Gerald F. Riley*

In addition to providing income-maintenance payments to eligible participants, the Supplemental Security Income (SSI) program provides automatic Medicaid enrollment for applicants upon SSI award in most states. Other states require applicants to file a separate Medicaid application. Some use the SSI eligibility criteria for both programs; others use Medicaid eligibility rules that are more restrictive. We use matched monthly longitudinal administrative records to test whether automatic enrollment has a positive effect on Medicaid coverage. Using logistic regression with a combination of repeated cross-section and regression discontinuity approaches, we find positive effects of automatic enrollment on Medicaid coverage relative to other policies. The differences are attributable to a discontinuous increase in Medicaid coverage shortly after the final disability determination decision. The time lag arising from the often-lengthy disability determination process reduces the effectiveness of automatic enrollment, which depends critically on timeliness of the final award decision.

Introduction

The Supplemental Security Income (SSI) program is a crucial component of the social safety net for low-income adults with severe disabilities. In addition to providing federal cash payments (with optional state supplements), SSI often serves as a gateway to health insurance under Medicaid. Although SSI and Medicaid are both means-tested programs, financial eligibility for SSI is determined using standard national criteria, whereas Medicaid is administered by the states, which have considerable leeway in developing Medicaid eligibility policies. In 40 states and the District of Columbia (41 jurisdictions), SSI awardees are categorically eligible for Medicaid. In 34 of those jurisdictions, the Social Security Administration (SSA) promptly notifies the state Medicaid agency of an individual's categorical eligibility for Medicaid upon award of SSI payments using an electronic transmission process—in other words, Medicaid enrollment is automatic.[1] However, in seven of the states where SSI eligibility confers Medicaid eligibility, SSI awardees must file a separate Medicaid application.[2] Ten other states also require a separate Medicaid application and employ Medicaid income or asset limits that are more restrictive than those for SSI, with the result that some SSI recipients do not qualify for Medicaid coverage in those states.[3] Thus,

Selected Abbreviations	
ACA	Affordable Care Act
CMS	Centers for Medicare and Medicaid Services
DI	Disability Insurance
SSA	Social Security Administration
SSI	Supplemental Security Income

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we observe three distinct state Medicaid enrollment policy regimes for SSI awardees:

1. automatic Medicaid enrollment of SSI awardees, initiated by SSA, and categorical Medicaid eligibility using uniform national standards to establish SSI eligibility for federal benefits (hereafter, *automatic enrollment*);

2. the requirement of a separate Medicaid application and the reliance on SSA's determination of SSI eligibility to establish categorical Medicaid eligibility (hereafter, *separate-application/nonrestrictive*); and

3. the requirement of a separate Medicaid application with Medicaid eligibility criteria that are more restrictive than those for SSI (hereafter, *separate-application/restrictive*).

Box 1 summarizes the policy regimes and lists the states that have adopted them.

Requiring a separate Medicaid application may limit Medicaid enrollment among SSI recipients for several reasons. First, it imposes a burden of additional time and effort on the applicant. Recent evidence from behavioral economics suggests that default automatic enrollment substantially increases participation

(Knoll 2010). Second, requiring a separate application increases administrative complexity, which may result in processing delays and an extended period of uncertainty about ultimate eligibility for Medicaid coverage. Further, the Medicaid enrollment rates of SSI recipients in separate application/restrictive states are expected by design to be lower than those in other states, at least initially. However, automatic enrollment does not necessarily guarantee swift access to Medicaid coverage because it does not take place until after SSA determines that an SSI applicant meets the program's definition of disability, which may require more than one level of adjudication; in some cases, that process may take more than 2 years. For these and other reasons, we are particularly interested in both temporary and long-term effects of automatic enrollment on Medicaid coverage, as compared with the separate-application policy regimes.

This study examines month-to-month longitudinal dynamics of Medicaid coverage among disabled adult first-time SSI awardees who do not receive any Social Security Disability Insurance (DI) benefits. We track Medicaid coverage not only for 72 months starting with the month of SSI award but also for the 12 months

Box 1.			
State Medicaid enrollment policies for SSI recipients			
Policy regime	**Enrollment process**	**SSI eligibility—[a]**	**States**
Automatic enrollment	SSA automatically notifies state Medicaid office upon determining that an SSI applicant is eligible for SSI.	Confers categorical eligibility for Medicaid.	Alabama, Arizona, Arkansas, California, Colorado, Delaware, District of Columbia, Florida, Georgia, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Montana, New Jersey, New Mexico, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. (Sometimes called the "1634 states.")
Separate-application/ nonrestrictive	SSI applicant must file a separate Medicaid application.	Confers categorical eligibility for Medicaid.	Alaska, Idaho, Kansas, Nebraska, Nevada, Oregon, and Utah. (Sometimes called the "SSI criteria states.")
Separate-application/ restrictive	SSI applicant must file a separate Medicaid application.	Does not confer categorical eligibility for Medicaid. State uses at least one eligibility criterion that is more restrictive than those of SSI.	Connecticut, Hawaii, Illinois, Indiana,[b] Minnesota, Missouri, New Hampshire, North Dakota, Ohio, Oklahoma, and Virginia. (Sometimes called the "209b states.")

SOURCE: SSA (2014).

a. Regardless of policy regime, SSI applicants who are not categorically eligible for SSI may yet be Medicaid-eligible depending on state eligibility rules.

b. Indiana converted to automatic enrollment in 2014, after the period studied in this analysis (2001–2006).

prior to eligibility onset. Throughout the article, "Medicaid coverage" applies to individuals who are eligible for full Medicaid benefits and excludes those who receive only partial benefits under Medicare Savings Programs (such as the Qualified Medicare Beneficiary and the Specified Low Income Beneficiary programs).

In this article, we test the following four hypotheses:

- That states requiring a separate application are associated with lower Medicaid coverage than automatic enrollment states are, at least initially.

- That using restrictive eligibility rules further decreases Medicaid coverage among SSI awardees, at least initially.

- That the final determination that a working-age SSI applicant is categorically disabled produces a sharply discontinuous increase in Medicaid coverage, regardless of the enrollment policy regime.

- That the positive Medicaid coverage effect of automatic enrollment is conditional on the timeliness of the final disability determination and subsequent receipt of the first SSI payment, such that extended lags in the receipt of the first SSI payment reduce the effectiveness of automatic enrollment.

Although we are unaware of any studies that directly test these hypotheses, we note two observational studies that develop and test closely related hypotheses using cross-sectional regression methods. Ungaro and Federman (2009) hypothesize that restrictive eligibility criteria should be associated with lower probability of Medicaid enrollment among the elderly. Their point estimate is consistent with their hypothesis, but is not statistically significant. Burns and others (2012) hypothesize that lack of insurance among adults with disabilities should be positively associated with separate-application policies relative to automatic enrollment. Their regression-adjusted estimates show statistically significant differences in the expected direction. Finally, we note that there is a broader body of literature looking at the effect of Medicaid expansion on various outcomes. Some studies use data from social experiments (Baicker and Finkelstein 2011; Finkelstein and others 2012; Baicker and others 2013; Taubman and others 2014; Weathers and Stegman 2012). Some focus on Medicaid expansion under the Affordable Care Act (ACA) (Dorn and others 2013; Flowers 2010; Musumeci 2012; Rudowitz and others 2014; Sheedy and Witgert 2013; Sommers, Baicker, and Epstein 2012). Swartz and others (2015) present simulation results showing that administrative innovation might reduce Medicaid "churning" (program

exits and reentries because of frequent income- or asset-related eligibility changes) and thereby increase coverage. Although our study covers a pre-ACA period, we find relevant implications for Medicaid enrollment under the ACA. In particular, because Medicaid expansion under the ACA effectively decouples SSI and Medicaid eligibility criteria in the affected "expansion states," we will discuss a simple procedural change to the current Medicaid automatic enrollment process that could dramatically increase its scope and improve its timeliness.

Data

We use administrative records from SSA's Disability Analysis File (DAF) linked to Medicaid records from the Centers for Medicare and Medicaid Services (CMS). The DAF combines program enrollment and benefit data from several SSA files on disabled beneficiaries of the SSI or DI programs (or both). From the DAF, we select a 10 percent sample of first-time SSI recipients aged 18–64 at program entry whose first month of payment eligibility was in 2000. For each sample member, we extract data on monthly benefit eligibility and actual payment status for SSI and DI from birth through 2006, state of residence at the month of first SSI eligibility in 2000, monthly survivor status for the 2000 to 2007 period, and selected demographic and diagnostic characteristics.

In this analysis, the key longitudinal data elements involve SSI payment status: specifically, whether the individual is eligible for SSI payment and whether the benefit is actually paid during a given month. Payment eligibility refers to having a payment due according to legislative design, while benefit payment refers to actual delivery by check or electronic transfer. The two may differ for a variety of reasons, most often because of the time lag involved in the initial disability determination.[4] Unlike DI benefits, SSI payments cannot be granted for months prior to application, even if the person was disabled in those months. Nevertheless, retroactivity arising from operational lags in the disability determination process applies to both programs. For practical purposes, the first month of SSI payment eligibility is the month immediately after application, and benefits are first paid shortly after the disability allowance decision. Thus, the lag between application and allowance is roughly equal to the lag between the first month of SSI eligibility and the first month of payment receipt. For that reason and others, we focus on those dates: that is, the first month of payment eligibility and the first month of actual receipt.

The sample excludes adults who received SSI disability payments as children. We also exclude recipients with any DI benefit eligibility from 2000 through 2006 because DI eligibility can affect eligibility for SSI and (indirectly) Medicaid benefits (Rupp and Riley 2011, 2012). Applicants for and recipients of concurrent SSI/DI benefits are subject to more complex eligibility rules and administrative procedures; in addition, working-age individuals at risk of DI and concurrent SSI/DI participation tend to have stronger labor force attachment and access to a wider array of health insurance options than those at risk of SSI-only participation. Moreover, because the dominant source of health insurance for SSI-only participants is clearly Medicaid, those individuals would stand to be the ones most affected by the state Medicaid policy regime (Rupp, Davies, and Strand 2008).

We link our sample file to annual Medicaid Analytic Extract (MAX) personal summary files in the CMS Chronic Conditions Data Warehouse (CMS 2016) using Social Security number, sex, and date of birth. The MAX personal summary files include data on monthly Medicaid coverage, Medicaid payments, and demographics from 1999 (the year prior to first-ever month of SSI eligibility) through 2007. Additional details on the data set and sample selection are available in Riley and Rupp (2014b).

Our analysis file includes demographic and diagnosis data for the first month of SSI eligibility in 2000. It tracks 84 months of Medicaid coverage, SSI eligibility, and SSI payment status keyed to the first month of SSI eligibility (from the 12 months preceding the first month of eligibility through a period of 72 months starting with the month of award), as well as survival status and age for each sample member at any month in that span.

Methods

First, we test the relationship between automatic enrollment and the two alternative policies using repeated cross-section modeling. We use the following equation:

$$Y_{it} = \alpha_t + X_i \beta_t + \text{POLICY}\, \gamma_t + \varepsilon_{it}, \qquad (1)$$

where Y_{it} is Medicaid coverage of individual i at month t (-12 to 72), X is a vector of individual characteristics, POLICY is the state-policy vector, and ε_{it} is the error term. In this formulation, $t = 1$ represents the month of first SSI payment eligibility.

Our basic model structure is similar to that of the cross-sectional models used in Ungaro and Federman (2009) and Burns and others (2012). Repeating the

cross-sections provides two improvements. First, with the monthly cross-sections prior to the first month of SSI eligibility, we can test the hypothesis of separate-application effects. Any significant positive or negative coefficient for 4 to 12 months before eligibility should represent unobserved differences among the three policy regimes that cannot be explained by automatic enrollment, which is triggered by a positive disability determination that can only occur after the first month of payment eligibility. However, the results for 1 to 3 months before eligibility may be somewhat affected by the few cases in which SSI disability determination is almost instantaneous, because Medicaid coverage can be granted for up to 3 months prior to SSI eligibility. Second, our data allow 72 repeated cross-sections starting with the month of first SSI award, enabling us to analyze the temporal pattern of estimated policy-regime effects.

Next, we address how automatic enrollment in practice may affect the results from equation 1. As noted earlier, SSI payments cannot be granted for months of disablement prior to application, but eligibility can start as early as the month after application. Here we face the inconvenient but operationally inevitable fact that the complex SSI disability determination process is typically far from instantaneous. In fact, the SSI final award decision lags substantially behind the application date in many cases. Initially rejected applicants might go through multiple layers of appeal; in some cases, the final determination can take more than 2 years. Once disability has been determined, two events occur within a short span, if not simultaneously. First, the approved applicant starts to receive monthly payments (along with a retroactive lump-sum payment). Second, automatic enrollment occurs: SSA informs the state Medicaid office that the person is entitled to SSI payment and is therefore categorically eligible for Medicaid. This second step of course does not affect people living in states with separate-application policies.

The disability determination process may create a sharp discontinuity in Medicaid coverage rates that can be identified through regression analysis. From the applicant and Medicaid program perspectives, the ultimate eligibility of individuals awaiting an initial disability determination (or appealing a rejected initial determination) is uncertain. Under all three of the policy regimes, individuals can apply for Medicaid regardless of SSI application status; but costs, information gaps, and barriers to access reduce the likelihood that they will do so. Thus, we hypothesize

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a sharp increase in Medicaid coverage in automatic enrollment states for SSI recipients around the time of the first payment. Although coverage may also increase in the other two groups of states around the time of the first SSI payment (as SSA apprises awardees of potential Medicaid eligibility), we hypothesize a discontinuous differential increase in Medicaid coverage arising specifically from automatic enrollment. To test this hypothesis, we face two distinct challenges. The first is to demonstrate whether a sharp increase in Medicaid coverage is associated with the first SSI payment regardless of policy regime. The second is to detect any effect of automatic enrollment on Medicaid coverage conditional on the receipt of the first SSI payment. We use the following equation to address the first of these issues:

$$Y_{it} = \alpha_t + X_i\beta_t + Z_{itk}\delta_{tk} + S\zeta_t + \varepsilon_{it}, \qquad (2)$$

where Z_{itk} is a vector that equals 1 if the first SSI payment for individual i was made during month $k \leq t$, and 0 if otherwise; and S is a vector of states. Our basic hypothesis is that there is a discontinuous jump around the month of the first SSI payment ($t = k$). The state dummies factor out time-invariant fixed effects, including policy regime. Again, because we follow up for 72 months, we have ample detail on the temporal patterns associated with the combination of t and k.

The next two equations are identical to equation 1 except that the estimates are conditioned on the receipt of the first SSI payment:

$$Y_{it} \,|\, (\text{PAID}_{it} = 1) = \alpha_t + X_i\beta_{it} + \text{POLICY}\,\gamma_t + \varepsilon_{it}, \quad (3)$$

and

$$Y_{it} \,|\, (\text{PAID}_{it} = 0) = \alpha_t + X_i\beta_{it} + \text{POLICY}\,\gamma_t + \varepsilon_{it}, \quad (4)$$

where PAID_{it} is an indicator that equals 1 if a first SSI payment was made in month $k \leq t$, and 0 if otherwise.

Equation 3 is a direct test of the hypothesis of a positive effect for a subsample that is directly affected by automatic enrollment compared with two counterfactual policy-regime scenarios using the same sample-selection rule. Here, we expect positive automatic-enrollment effects of greater absolute magnitude than those estimated by equation 1.

Conversely, equation 4 tests effects on applicants whose Medicaid eligibility should not be affected by automatic enrollment. Although in this case we expect no positive automatic-enrollment effect, our expectations are otherwise somewhat ambiguous because the results are also influenced by the effectiveness of separate-application policy regimes. For example,

separate-application/nonrestrictive states may use other Medicaid eligibility categories to establish disability status for Medicaid applicants whose cases SSA has not yet adjudicated and thus whose final SSI eligibility status is yet uncertain. If such cases are frequent, we should expect a negative automatic enrollment estimate from equation 4.[5]

We use logistic regression and express the results in terms of relative odds. Although our key interest is in the coverage effect of automatic enrollment, we discuss our results from the perspective of the two alternative policies and cast automatic enrollment as the counterfactual reference-case scenario. Using this approach, we can easily estimate the effect of the absence of automatic enrollment—alone and in combination with stricter Medicaid financial eligibility rules. The estimated effects of automatic enrollment relative to the separate-application policy regimes can be obtained by either changing the sign of the estimate or calculating the inverse of the odds ratios presented, depending on the specification.

In addition to Medicaid coverage, we look at two factors that may also be associated with the policy regimes: Medicaid expenditures and participant demographic characteristics. Because Medicaid expenditures vary widely, we analyze both average amounts and distributional patterns. We calculate average expenditures per awardee for the full awardee cohort, including those who did not enroll in Medicaid. For SSI recipients without Medicaid coverage and thus no record of Medicaid expenditures, we assign an expenditure amount of $0; those observations principally represent true zeros, not missing values. We examine annual and cumulative expenditures for the period 2001–2006. We expect variations in Medicaid expenditures per SSI awardee to reflect in part the financial impact of the different state Medicaid policy regimes. In the analysis of policy-regime differences in demographic characteristics, we use a difference-in-differences framework first to explore mortality then to look at associations between Medicaid policy regimes and enrollee demographic characteristics conditional on survival.

The strength of the empirical analysis depends on the data available. The internal validity of observational data such as ours may not be equal to that of data derived from social experiments. In particular, Medicaid coverage may be affected by unmeasured variables associated with the timing of disability determinations, the policy regime, or both. We attempt to address this concern by using repeated preeligibility and posteligibility cross-sections, regression discontinuity, and

difference-in-differences techniques to test multiple implications of our core hypotheses. Although survey data might have a richer array of information on applicant characteristics, administrative records provide tremendous advantages for this analysis, such as greater sample size, precise monthly measurements of SSI and Medicaid participation and mortality status over several years, exact timing of key program events, and precise data on Medicaid program expenditures. Some SSA and CMS records may have failed to match (because Social Security number data are occasionally inaccurate or missing from some Medicaid records), but such problems appear to be fairly minor in the data set we use (Riley and Rupp 2014b). Again, although we cannot completely eliminate validity concerns arising from using these data, our analytic techniques have been selected in part to optimize identification.

Results

Table 1 compares awardee characteristics by state policy regime. Percentage distributions by sex and primary diagnosis are fairly similar for the three regimes. The separate-application/restrictive states had a slightly younger SSI population and slightly higher proportions of recipients diagnosed with mental and intellectual disorders than the other states.

Table 1.

Percentage distributions of 2000 SSI awardees aged 18–64, by selected characteristics and state Medicaid policy regime

| Characteristic | Medicaid policy regime | | | Overall |
	Automatic enrollment	Separate-application/ nonrestrictive	Separate-application/ restrictive	
Total number	8,639	394	1,730	10,763
Percentage distribution	80.3	3.7	16.1	100.0
Percentage distributions				
Age group				
18–30	21.5	24.6	28.3*	22.7
31–45	28.6	29.7	30.1	28.9
46–64	49.9	45.7	41.6*	48.4
Total	100.0	100.0	100.0	100.0
Sex				
Women	56.1	55.6	55.4	55.9
Men	42.3	43.1	43.2	42.5
Data missing	1.6	1.3	1.4	1.6
Total	100.0	100.0	100.0	100.0
SSA primary diagnosis				
Mental impairments				
Intellectual disability	8.1	8.4	11.2*	8.6
Other mental impairments	30.5	30.5	34.5*	31.2
Nonmental impairments				
Neoplasms	9.1	7.6	10.1	9.2
Congenital anomalies	0.4	0.8	0.3	0.4
Endocrine, nutritional, and metabolic diseases	3.1	3.6	2.1	2.9
Infectious and parasitic diseases	3.1	0.8*	2.1	2.9
Injuries	3.3	2.3	3.2	3.3
Diseases of the—				
Circulatory system	9.5	7.6	7.3	9.1
Digestive system	2.2	2.5	1.9	2.2
Genitourinary system	2.1	1.3	1.8	2.0
Musculoskeletal system	13.3	13.7	11.6	13.0
Nervous system	6.2	10.7*	5.8	6.3
Respiratory system	3.6	4.6	3.3	3.6
Other nonmental impairments	0.6	1.3	0.5	0.6
Unknown	5.0	4.6	4.4	4.8
Total	100.0	100.0	100.0	100.0

(Continued)

Table 1.

Percentage distributions of 2000 SSI awardees aged 18–64, by selected characteristics and state Medicaid policy regime—*Continued*

| | Medicaid policy regime | | | |
| | Automatic enrollment | Separate-application/ nonrestrictive | Separate-application/ restrictive | Overall |
Characteristic				
	Standard errors			
Age group				
18–30	0.4	2.2	1.1	0.4
31–45	0.5	2.3	1.1	0.4
46–64	0.5	2.5	1.2	0.5
Sex				
Women	0.5	2.5	1.2	0.5
Men	0.5	2.5	1.2	0.5
Data missing	0.1	0.6	0.3	0.1
SSA primary diagnosis				
Mental impairments				
Intellectual disability	0.3	1.4	0.8	0.3
Other mental impairments	0.5	2.3	1.1	0.4
Nonmental impairments				
Neoplasms	0.3	1.3	0.7	0.3
Congenital anomalies	0.1	0.4	0.1	0.1
Endocrine, nutritional, and metabolic diseases	0.2	0.9	0.3	0.2
Infectious and parasitic diseases	0.2	0.4	0.3	0.2
Injuries	0.2	0.8	0.4	0.2
Diseases of the—				
Circulatory system	0.3	1.3	0.6	0.3
Digestive system	0.2	0.8	0.3	0.1
Genitourinary system	0.2	0.6	0.3	0.1
Musculoskeletal system	0.4	1.7	0.8	0.3
Nervous system	0.3	1.6	0.6	0.2
Respiratory system	0.2	1.1	0.4	0.2
Other nonmental impairments	0.1	0.6	0.2	0.1
Unknown	0.2	1.1	0.5	0.2

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

Rounded components of percentage distributions do not necessarily sum to 100.0.

* = difference from the value for automatic enrollment states is statistically significant at the 0.05 level (two-tailed test).

Medicaid Coverage

Chart 1 shows Medicaid coverage rates by month and policy regime. Residents of separate-application/ restrictive states always have the lowest levels of Medicaid coverage, while residents of automatic enrollment states usually have the highest coverage rates. Nevertheless, the temporal patterns are worth noting. The lower Medicaid coverage rates in the separate-application/restrictive states 4–12 months prior to SSI eligibility suggest some selection effect. However, the differences between separate-application/restrictive policy and the other regimes are much smaller in that period than are the posteligibility differences. This difference in differences suggests that posteligibility variation in Medicaid coverage rates may be partly attributable to different state Medicaid enrollment policies and are not spurious reflections of unrelated factors. We also observe that posteligibility differences tend to diminish through time. Thus, whereas part of the policy-regime effect seems relatively permanent, the rest might be temporary.

Next, we estimate equation 1. Table 2 presents regression-adjusted odds-ratio estimates at eight cross-sections from 12 months before SSI eligibility to the

Chart 1.

Trends in Medicaid coverage for 2000 SSI awardees aged 18–64 and alive during given month, by state Medicaid policy regime
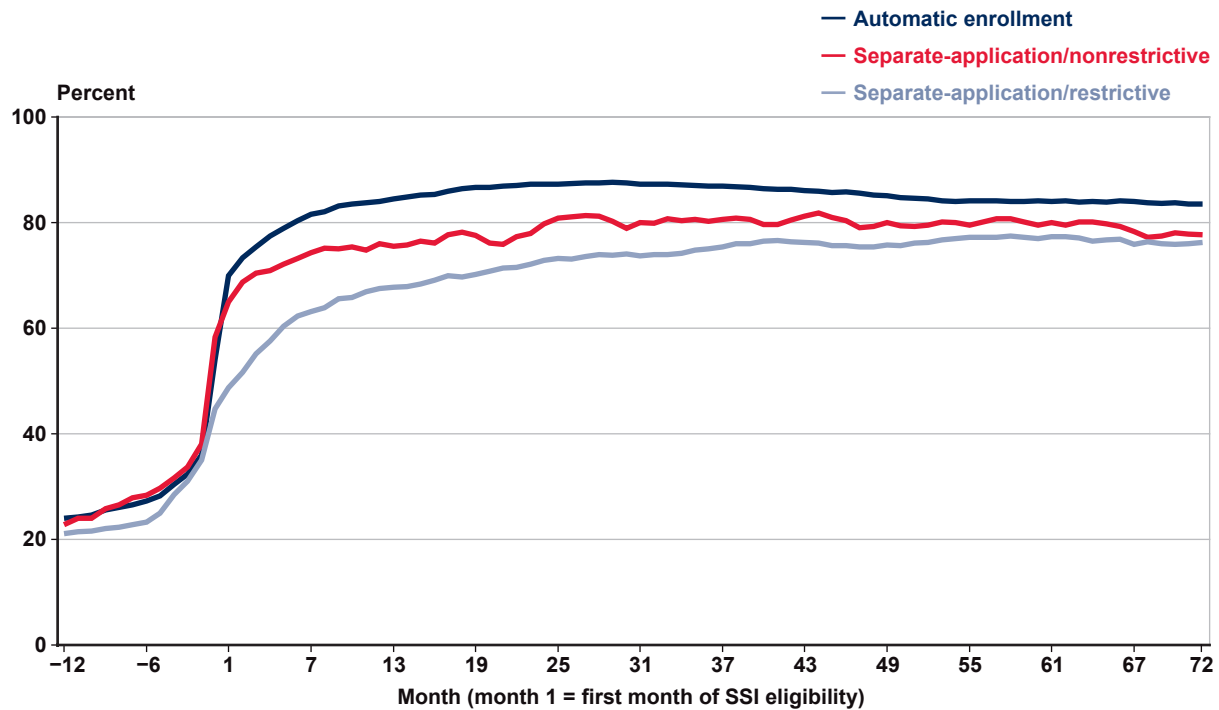
SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTE: Sample comprises recipients of SSI payments who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who first received SSI payments prior to their 18th birthdays are not included in the sample cohort.

end of the 72-month period starting with the month of SSI award showing the effect on Medicaid coverage of the two separate-application policies relative to automatic enrollment. We hypothesize that the separate-application/nonrestrictive policy regime should have (a) no effect on Medicaid coverage at 12 and 6 months before eligibility, with some ambiguity for 3 months before eligibility because Medicaid coverage can be retroactive at SSI award; and (b) a negative effect on Medicaid coverage relative to automatic enrollment once SSI eligibility has been established. The empirical results are consistent with both hypotheses. From month 6 to month 72, the estimated odds ratios for separate-application/nonrestrictive states are highly significant and remarkably stable, ranging from 0.61 to 0.72, suggesting a 28–39 percent permanent drop in the relative odds of Medicaid coverage relative to automatic enrollment.

For separate-application/restrictive states, we find relatively low and statistically significant odds ratios of 0.82 and 0.80 for 12 and 6 months before eligibility, respectively. These pre-SSI results suggest that,

to some extent, restrictive-eligibility states may have relatively low coverage rates for Medicaid applicants for reasons unrelated to the absence of automatic enrollment. However, we do find a sharp decline in the posteligibility odds ratios, which range from 0.38 to 0.62, consistent with the hypothesis of a negative Medicaid coverage effect arising from separate-application/restrictive policy. In sum, we find evidence supporting the hypothesis that automatic enrollment increases Medicaid coverage, while the relative tightness of Medicaid eligibility rules in separate-application/restrictive states has the opposite effect.

Thus, we find that the absence of automatic enrollment depresses Medicaid coverage patterns under both of the separate-application policy regimes. Under those two policy regimes, the absence of automatic enrollment is the principal causal factor affecting difference in coverage rates. However, in separate-application/restrictive states, marginal effects also arise from the relative restrictions of Medicaid enrollment policies. In these states, the two effects are additive.

These findings are to be expected, given the implementation practices that each of the policy regimes entail. The effect of automatic enrollment becomes even clearer when we consider what it means in an operational context. Automatic Medicaid enrollment takes effect only after an applicant is *approved* for

Table 2.
Estimated regression-adjusted odds of Medicaid coverage, by separate-application policy regime relative to automatic enrollment: Selected time points before and after date of first SSI eligibility for 2000 awardees aged 18–64

Cross-section (relative to SSI eligibility onset)	Separate-application/ nonrestrictive	Separate-application/ restrictive
12 months prior		
Odds ratio	1.01	0.82*
P>z	0.92	0.00
6 months prior		
Odds ratio	1.17	0.80*
P>z	0.20	0.00
3 months prior		
Odds ratio	1.14	0.94
P>z	0.23	0.32
3rd month		
Odds ratio	0.85	0.39*
P>z	0.15	0.00
6th month		
Odds ratio	0.72*	0.39*
P>z	0.01	0.00
12th month		
Odds ratio	0.64*	0.38*
P>z	0.00	0.00
24th month		
Odds ratio	0.61*	0.39*
P>z	0.00	0.00
72nd month		
Odds ratio	0.68*	0.62*
P>z	0.01	0.00

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months after SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

The dependent variable for each cross-section is defined as a 0–1 variable, with Medicaid coverage for a given month coded as 1 and the lack of Medicaid coverage coded as 0.

Statistics are estimated from logistic regressions. Models include controls for demographic and diagnostic variables.

* = difference from odds of Medicaid enrollment in automatic enrollment states is statistically significant at the 0.05 level (two-tailed test).

SSI disability payments; until then, the applicant does not know the eventual award outcome.[6] Therefore, automatic enrollment should have no positive effect on Medicaid coverage during the period prior to award, during which SSI eligibility remains uncertain.[7]

The degree to which lags in receiving the first SSI payment mediate the automatic enrollment effect is not trivial, because the SSI disability determination process is typically long. The lag between application and allowance provides an opportunity to test the effect of the timing of the first SSI payment on Medicaid coverage by disaggregating the results according to SSI payment status. Doing so explicitly addresses the effect of the lag on Medicaid coverage. We test the hypothesis that the uncertainty arising from the lag in the SSI disability determination process has a negative effect on Medicaid coverage. An eventual SSI awardee does not know the results of the final disability determination until fairly close to the first actual SSI payment. In addition, SSI applicants who were initially denied retain that status until the denial is reversed at a higher level of adjudication. Although denied SSI applicants could possibly obtain Medicaid coverage (depending on Medicaid rules and eligibility determination practices in the given state), uncertainty about categorical SSI eligibility would presumably reduce the probability of that outcome.

To assess how delays in the disability determination affect Medicaid coverage by policy regime, we continue with a two-step analysis. First, we assess whether delays in receiving the first SSI payment affect Medicaid coverage overall. Second, we address the combined effect of automatic enrollment and delays in receiving the first SSI payment. Chart 2 and Table 3 address the first step.

Chart 2 shows Medicaid coverage rates at selected cross-sections separately for those who have been paid their first benefit by the given month and those who are not. Because of sample size constraints, month 60 is the last observation we present here. As expected, across time points, coverage rates for those in paid status exceed the rates for those who are not, with differences ranging from 20 to 27 percentage points.

To further explore whether these patterns reflect causal effects, we test the hypothesized negative effect of prolonged lags between SSI application and final award decision—primarily because of the multistep disability determination process—with a regression discontinuity design. We assume a discontinuity in Medicaid coverage patterns associated with the first month of SSI payment after the final award decision

Chart 2.
Medicaid coverage during selected months after month of first SSI award: 2000 SSI awardees aged 18–64 at award, by whether first SSI benefit has been paid as of the given month
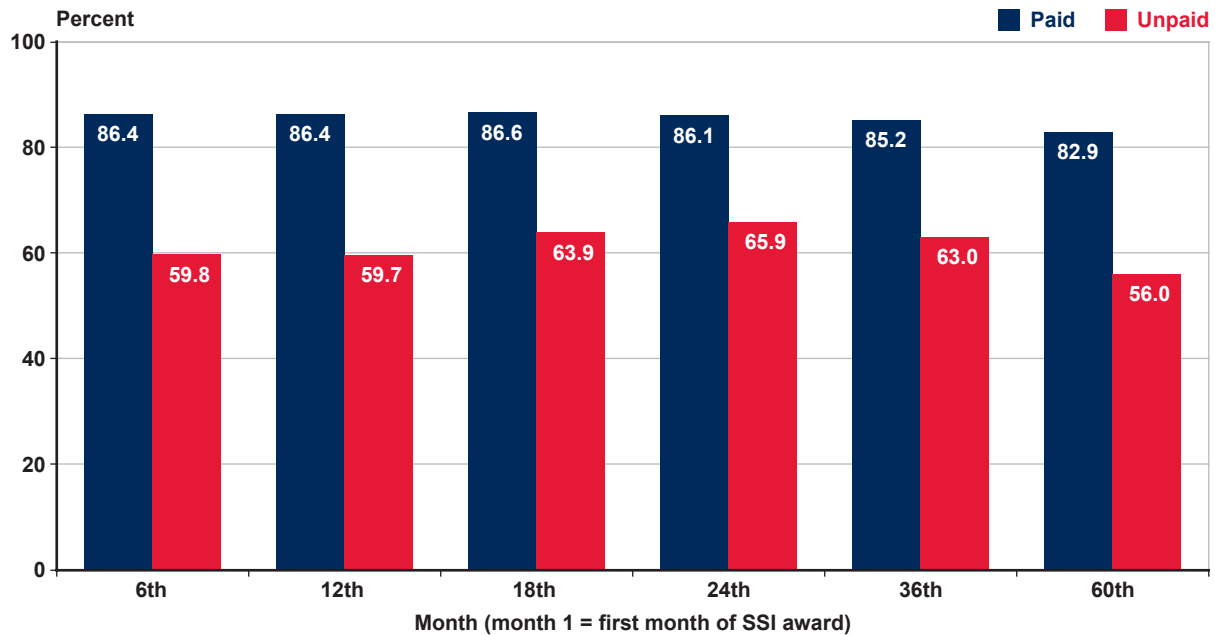
SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTE: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months after SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

(equation 2). This approach provides relatively strong identification because there is no reason to assume a direct relationship between the exact timing of the first payment and state Medicaid policies or unobserved applicant characteristics. Of course, marginally qualified applicants tend to be denied initially and gain a reversal only in later stages of the disability determination process, but there is no reason to anticipate an abrupt change associated with the timing of the first SSI payment.

Table 3 presents the relevant estimates from equation 2 for nine cross-sections using logistic regression. Our dependent variable is the relative odds of Medicaid coverage at selected time points before and after eligibility by the month of first payment relative to SSI award. The reference category is first SSI payment during months 1–6. This corresponds to a lag period of 0–5 months because if first payment occurs during month 1 (month of award), the lag period is 0. In general, if first payment occurs for month z, the payment lag is $z - 1$. The paired cells of hypothesized discontinuity are outlined and the periods of actual SSI payments ($k \le t$) are shaded. Thus, in each row,

the progression from months with no payment yet to months with payment reads from right to left.[8]

For the 6th month to the 60th month cross-sections, we can observe situations when the awardee is SSI-eligible but has not received SSI payment, as well as situations when the eligible awardee has already been paid for 1 or more months. For the two preaward cross-sections, there can be no SSI eligibility or payment, by cohort definition. Therefore, the corresponding regressions serve a useful control function: For 12 months before eligibility, we should expect no effect of payment delay on Medicaid coverage; but for 3 months before eligibility, the situation is ambiguous because Medicaid can be awarded retroactively for up to 3 months prior to the first month of SSI eligibility.

The empirical results are overwhelmingly consistent with our hypothesis of a positive relationship between Medicaid coverage during month t and SSI cash payment during month $k \le t$. The pattern of coefficients clearly shows the discontinuity we hypothesized: A substantial drop in the odds ratios appears in the transition from payment to nonpayment status periods (from shaded to unshaded cell to the right

Table 3.

Estimated regression-adjusted odds of Medicaid coverage at selected time points before and after SSI eligibility onset, by time period of first SSI payment relative to month of first-ever award: 2000 SSI awardees aged 18–64

Cross-section (relative to SSI eligibility onset)	First payment during month (month 1 = first month of SSI eligibility)					
	7–12	13–18	19–24	25–36	37–60	61 or more
12 months prior						
Odds ratio	0.98	1.08	1.32*	1.29*	1.03	1.15
P>z	0.80	0.46	0.01	0.03	0.89	0.80
3 months prior						
Odds ratio	0.84*	0.92	1.06	1.07	0.87	1.39
P>z	0.01	0.41	0.54	0.54	0.49	0.50
6th month						
Odds ratio	0.35*	0.18*	0.14*	0.12*	0.11*	0.22*
P>z	0.00	0.00	0.00	0.00	0.00	0.00
12th month						
Odds ratio	0.93	0.31*	0.17*	0.14*	0.10*	0.29*
P>z	0.40	0.00	0.00	0.00	0.00	0.01
18th month						
Odds ratio	1.01	1.06	0.32*	0.20*	0.12*	0.34*
P>z	0.91	0.64	0.00	0.00	0.00	0.02
24th month						
Odds ratio	1.05	1.55*	1.28	0.35*	0.18*	0.19*
P>z	0.59	0.00	0.07	0.00	0.00	0.00
36th month						
Odds ratio	0.91	1.19	1.28	1.53*	0.36*	0.20*
P>z	0.26	0.20	0.06	0.01	0.00	0.00
60th month						
Odds ratio	0.89	1.34*	1.37*	1.71*	1.71*	0.49
P>z	0.18	0.03	0.02	0.00	0.04	0.14
72nd month						
Odds ratio	0.96	1.32*	1.75*	1.96*	2.54*	0.90
P>z	0.60	0.03	0.00	0.00	0.00	0.84

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises recipients of SSI payments who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who first received SSI payments prior to their 18th birthdays are not included in the sample cohort.

The dependent variable for each cross-section is defined as a 0–1 variable, with Medicaid coverage for a given month coded as 1 and the lack of Medicaid coverage coded as 0.

Statistics are estimated from logistic regressions. Models include demographic, diagnostic, and state dummy variables.

* = difference from odds of Medicaid enrollment for SSI awardees who experienced a 0–5 month lag in the SSI disability determination process is statistically significant at the 0.05 level (two-tailed test).

in each outlined pair). Values in those shaded SSI-payment cells range from 0.93 to 1.71; in the adjoining no-payment-yet cells, they drop to values ranging from 0.31 to 0.49. In effect, actual SSI payment is associated with at least a threefold increase in relative odds of Medicaid coverage, strongly supporting the hypothesis of a negative association of lags in the adjudication of SSI claims with Medicaid coverage.

For the two preeligibility time points, the adjusted relative odds are generally close to 1, differing significantly only in two lag periods for the 12-month cross-section. This finding is largely consistent with our hypothesis that the lag between eligibility onset and first payment should have no effect on Medicaid coverage 1 year prior to the first month of SSI eligibility. There is, however, a relatively small but statistically significant drop in the relative odds of Medicaid coverage at 3 months before eligibility associated with a 6–11 month lag. This finding is consistent with the Medicaid program rule that allows eligibility to be granted retroactively for 3 months prior to first month of SSI eligibility.[9]

Table 3 provides strong evidence for a negative association of delays in the receipt of the first SSI payment with Medicaid coverage overall. Next, we explore how those lags in the SSA disability determination process interact with the Medicaid policy regime.

Table 4 shows the estimated effect of state Medicaid policy regime on Medicaid coverage disaggregated by whether the first SSI monthly benefit has been paid as of a given time point. By definition, the proportion of new SSI awardees in paid status is zero during the preeligibility months, and increases as the eligibility period increases. Conversely, the proportion that has not been paid decreases over time. The null hypothesis

is that automatic enrollment should positively affect Medicaid coverage (relative to both separate-application policy regimes) for SSI awardees who have been paid (equation 3). For SSI awardees who have not been paid by the given observation period (equation 4), automatic enrollment should have no effect relative to the separate-application/nonrestrictive policy regime, and some effect relative to the separate-application/restrictive policy regime.

Consistent with expectations, the empirical results show clear automatic-enrollment effects among those whose first benefit has already been paid. For SSI recipients who have been paid, the low odds ratios

Table 4.

Estimated regression-adjusted odds of Medicaid coverage, by separate-application policy regime relative to automatic enrollment and SSI payment status as of selected time points before and after SSI eligibility onset for 2000 awardees aged 18–64

| Cross-section (relative to SSI eligibility onset) | First SSI payment (status as of cross-section date) | | | |
| | Separate-application/nonrestrictive | | Separate-application/restrictive | |
	Paid	Unpaid	Paid	Unpaid
12 months prior				
Odds ratio	. . .	1.01	. . .	0.82*
P>z	. . .	0.92	. . .	0.00
6 months prior				
Odds ratio	. . .	1.17	. . .	0.80*
P>z	. . .	0.20	. . .	0.00
3 months prior				
Odds ratio	. . .	1.14	. . .	0.94
P>z	. . .	0.23	. . .	0.32
3rd month				
Odds ratio	0.44*	0.96	0.17*	0.46*
P>z	0.00	0.76	0.00	0.00
6th month				
Odds ratio	0.45*	0.98	0.18*	0.71*
P>z	0.00	0.93	0.00	0.00
12th month				
Odds ratio	0.41*	1.42	0.25*	0.86
P>z	0.00	0.17	0.00	0.23
24th month				
Odds ratio	0.54*	1.41	0.36*	0.51*
P>z	0.00	0.47	0.00	0.00
72nd month				
Odds ratio	0.68*	. . .	0.62*	. . .
P>z	0.01	. . .	0.00	. . .

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months after SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

The dependent variable for each cross-section is defined as a 0–1 variable, with Medicaid coverage for a given month coded as 1 and the lack of Medicaid coverage coded as 0.

Statistics are estimated from logistic regressions. Models include controls for demographic and diagnostic variables.

. . . = not applicable.

* = difference from odds of Medicaid enrollment in automatic enrollment states is statistically significant at the 0.05 level (two-tailed test).

for separate-application/nonrestrictive states (ranging from 0.41 to 0.68) indicate automatic enrollment's consistently large and comparatively positive effect. As expected, the contrast between automatic enrollment and separate-application/restrictive policy is even stronger, indicated by still lower odds ratios (ranging from 0.17 to 0.62). The patterns are consistent with the hypothesis that both the lack of automatic enrollment and restrictive state eligibility policies contribute to lower Medicaid coverage in the separate-application/restrictive states.

Results for SSI applicants whose first benefit has not been paid are also consistent with our null hypotheses. The separate-application/nonrestrictive regime shows no statistically significant results relative to automatic enrollment. If anything, odds ratios tend to exceed 1.00, suggesting that automatic enrollment may actually be counterproductive for those whose SSI eligibility status is still undecided. In automatic enrollment states, SSA apprises applicants that the SSI award notice will notify them of Medicaid eligibility. Under those circumstances, SSI applicants may simply wait to receive the SSI award notice, and initiate no contact with the state Medicaid agency. It is also possible that if an SSI applicant contacts the state Medicaid office, he or she will be told that further action must await the SSI initial award decision. If an SSI applicant is initially denied, SSA refers the ineligible applicant to the state Medicaid agency, which may either find the applicant ineligible for Medicaid or grant coverage on state-level eligibility criteria. Both outcomes take time. By contrast, in separate-application states, SSA refers all SSI claimants (including those who concurrently apply for DI) to the state Medicaid office at the outset of the process. Thus, Medicaid coverage is not granted to those SSI applicants unless they actively apply; and because there is no forthcoming SSA action for which to wait, applicants have strong incentive to apply for Medicaid right away. Medicaid coverage is granted to some applicants even before categorical eligibility for SSI as disabled has been determined.

Not surprisingly, SSI awardees whose first SSI benefit has not been paid in separate-application/restricted states have lower odds ratios for Medicaid coverage relative to residents of automatic enrollment states 6 and 12 months prior to SSI award. The patterns suggest that the statistically significant coefficients for those who have not been paid SSI benefits may primarily or exclusively reflect the restrictiveness of Medicaid eligibility rules. Moreover, the pairwise comparison of the point estimates in the "paid" and "unpaid" subgroups is consistent with the expectation of differential Medicaid coverage effect by payment status.[10]

Other Potential Consequences of State Medicaid Policy

Although this article focuses on the effect of state Medicaid policy regime on Medicaid coverage, related factors are also of potential interest. The evidence presented so far strongly supports the notion that requiring a separate Medicaid application—and, in some states, also imposing restrictive state Medicaid eligibility criteria—has substantial negative effects on Medicaid coverage. We next address whether these policies also affect average Medicaid expenditures and whether there is distributional evidence of selective coverage effects for certain demographic or diagnostic characteristics. Perhaps many people brought into Medicaid by automatic enrollment have access to private health insurance or health conditions that are less severe than those of other Medicaid beneficiaries, resulting in no or very little effect on average program expenditures. At the other extreme, perhaps automatic enrollment removes barriers to coverage that affect people with severe health conditions and high expected costs. To assess the tradeoffs implied by restricting Medicaid coverage, we present empirical evidence on expenditure patterns and participant demographic characteristics by policy regime.

Expenditure patterns. Table 5 shows average Medicaid expenditures per SSI awardee for single years (2001–2006) along with the annual average for the entire period, with regression-adjusted differences by policy regime. We focus on the 2001–2006 period because 2001 was the first year in which all awardees could have had a full year of SSI-related Medicaid expenditures. Neither the raw averages nor the regression-adjusted differences for the two separate-application policy regimes are statistically significant compared with the counterfactual of automatic enrollment for any single year or for the 6-year period combined. Yet, given the substantial variance of the expenditure data, one possible reason for rejecting the null hypothesis (no difference) might be Type 2 error. After all, even for the two combined-period regression-adjusted differences, large standard errors of $624 and $322 suggest possible failure to detect relatively meaningful magnitudes of difference. Alternatively, the average expenditures may mask important distributional differences, a consideration that also calls for more detailed analysis.

Table 5.

Unadjusted and ordinary least square regression-adjusted mean Medicaid expenditures per SSI awardee by state Medicaid policy regime for 2000 SSI awardees aged 18–64, 2001–2006 (in 2012 dollars)

Year	Unadjusted value			Regression-adjusted difference from automatic enrollment states	
	Automatic enrollment	Separate-application/ nonrestrictive	Separate-application/ restrictive	Separate-application/ nonrestrictive	Separate-application/ restrictive
2001					
Mean	11,296	11,659	11,089	837	0
Standard error	300	1,003	693	1,387	719
2002					
Mean	12,248	12,691	12,413	651	253
Standard error	329	1,186	732	1,512	780
2003					
Mean	13,083	11,653	12,455	-1,376	-443
Standard error	338	911	661	1,519	785
2004					
Mean	13,578	13,024	12,640	-358	-764
Standard error	352	1,415	628	1,584	815
2005					
Mean	13,814	13,865	13,624	58	-133
Standard error	351	1,649	694	1,613	825
2006					
Mean	13,759	11,128	13,833	-2,765	382
Standard error	338	936	812	1,569	807
2001–2006 (annual average) [a]					
Mean	12,876	12,322	12,605	-393	-104
Standard error	136	489	288	624	322

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months after SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

A value of zero Medicaid expenditures is imputed for individuals who did not have Medicaid coverage in all 12 months of a given year.

Annual averages are calculated for survivors aged younger than 65 at the end of the calendar year.

a. Calculated as the sum of the annual Medicaid expenditures for each awardee divided by six. For individuals who exited the sample during a given year, a value of zero Medicaid expenditures is imputed for subsequent years.

Table 6 provides logistic regression-adjusted relative odds of Medicaid expenditures exceeding selected percentile levels ranging from the 25th to the 99th for separate-application/nonrestrictive and separate-application/restrictive states relative to automatic enrollment states. In this instance, we first examine the separate-application/restrictive states in the table's lower panel. The results are fairly straightforward: Restrictive eligibility is associated with statistically significant negative effects in each single year and for the period as a whole at the 25th and 50th percentiles. All of the estimated odds that Medicaid expenditures exceed the 90th percentile are relatively high for the separate-application/restrictive policy regime, but the 2004 odds ratio is not statistically significant. In no single year are the estimated odds that expenditures exceed the 99th percentile statistically significant, and the point estimates show no clear pattern. The same is true for the entire period. Thus, there is some uncertainty about the presence of a positive relationship at the upper tail; the results are clearly inconsistent with policy concerns about Medicaid access among the severely disabled in restrictive-eligibility states that would imply the exact opposite of what we find.

Table 6.
Estimated regression-adjusted odds that Medicaid expenditures will exceed selected percentile levels, by separate-application policy regime relative to automatic enrollment, for 2000 SSI awardees aged 18–64, 2001–2006

Year	25th percentile		50th percentile		75th percentile		90th percentile		99th percentile	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Separate-application/nonrestrictive										
2001	0.96	0.12	1.28*	0.14	1.29*	0.16	1.52*	0.26	0.32	0.33
2002	0.97	0.13	1.08	0.12	1.14	0.15	1.33	0.24	1.01	0.61
2003	0.90	0.12	1.12	0.13	0.95	0.13	0.81	0.17	--	--
2004	1.01	0.14	1.24	0.15	1.19	0.16	0.69	0.16	1.00	0.60
2005	0.93	0.13	1.20	0.15	1.03	0.15	0.87	0.19	0.74	0.54
2006	0.67*	0.09	0.92	0.12	0.87	0.13	0.88	0.20	--	--
2001–2006 (annual average) [a]	0.91	0.05	1.11*	0.05	1.13*	0.06	0.95	0.08	0.44*	0.16
Separate-application/restrictive										
2001	0.51*	0.03	0.61*	0.04	0.94	0.06	1.27*	0.12	1.22	0.33
2002	0.54*	0.03	0.69*	0.04	0.98	0.07	1.38*	0.13	1.07	0.31
2003	0.58*	0.04	0.76*	0.05	0.87*	0.06	1.22*	0.12	1.15	0.33
2004	0.67*	0.05	0.74*	0.05	0.94	0.07	1.08	0.11	0.97	0.30
2005	0.67*	0.05	0.80*	0.05	0.99	0.07	1.26*	0.13	0.88	0.29
2006	0.63*	0.04	0.77*	0.05	1.02	0.08	1.26*	0.13	1.27	0.39
2001–2006 (annual average) [a]	0.60*	0.02	0.73*	0.02	0.97	0.03	1.24*	0.05	1.09	0.13

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months after SSI award; for a given cross-section, the sample is further limited to survivors aged younger than 65. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

A value of zero Medicaid expenditures is imputed for individuals who did not have Medicaid coverage in all 12 months of a given year.

Statistics are estimated from logistic regressions.

-- = not available (insufficient sample size).

* = difference from odds of Medicaid expenditures in automatic enrollment states is statistically significant at the 0.05 level (two-tailed test).

a. Calculated for each component year in constant dollars, for all persons in the sample regardless of exit status. For individuals who exited the sample during a given year, a value of zero Medicaid expenditures is imputed for subsequent years.

In the upper panel of Table 6, we find no clear evidence of major distributional effects for separate-application/nonrestrictive states relative to automatic enrollment, but two patterns are notable. First, the fact that all but the 2004 estimated odds that expenditures will exceed the 25th percentile are smaller than 1 suggests a negative effect of that policy regime on Medicaid expenditures at the lower tail. Second, the estimates suggest statistically significant positive effects on Medicaid expenditures at the 50th, 75th, and 90th percentiles for the first full year, 2001. That finding is consistent with the previously discussed possibility that the separate processing of Medicaid applications may help people who are initially denied

SSI payments and who therefore do not begin receiving payments until sometime later.

Chart 3A shows average cumulative Medicaid expenditures for the period 2001–2006 in separate-application/nonrestrictive and separate-application/restrictive states as percentages of the average expenditure in automatic enrollment states, by expenditure decile. The percentages for the separate-application/nonrestrictive states are relatively low in the lower deciles, but the overall effects are unclear, suggesting that the scarcity of statistically significant differences seen in the upper panel of Table 6 may simply reflect the absence of meaningful overall effects and not a Type 2 statistical error.

Chart 3A.
Average Medicaid expenditure per awardee in states with separate-application policies as a percentage of average expenditure per awardee in automatic enrollment states: By expenditure decile, 2001–2006
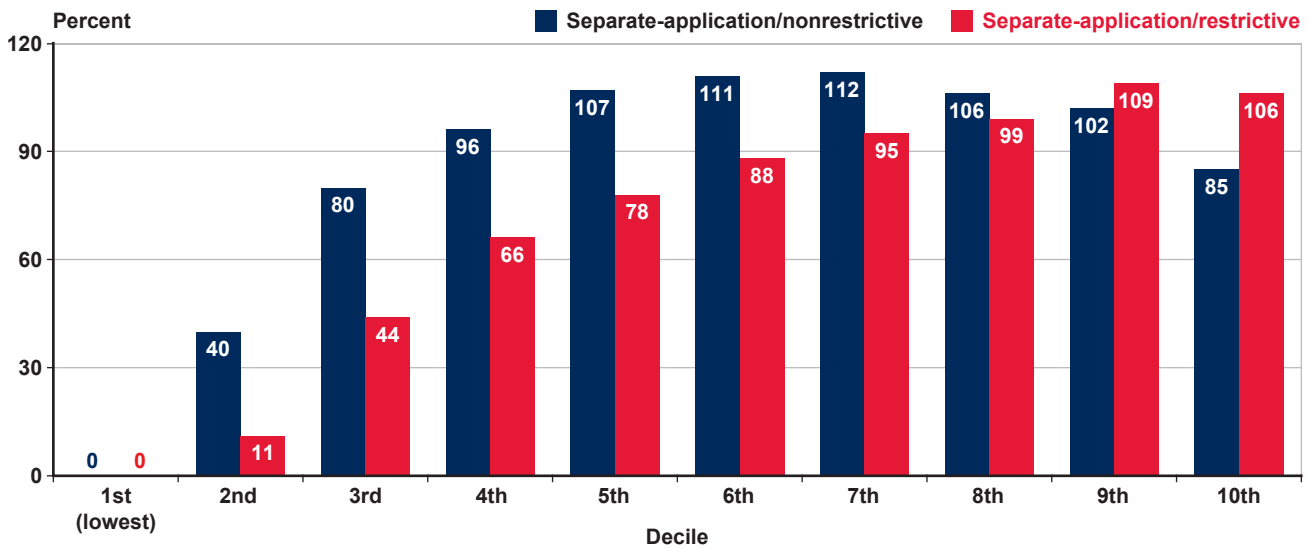
Percent

Legend: ■ Separate-application/nonrestrictive ■ Separate-application/restrictive

Decile	Separate-application/nonrestrictive	Separate-application/restrictive
1st (lowest)	0	0
2nd	40	11
3rd	80	44
4th	96	66
5th	107	78
6th	111	88
7th	112	95
8th	106	99
9th	102	109
10th	85	106

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

A value of zero Medicaid expenditures is imputed for individuals who did not have Medicaid coverage in all 12 months of a given year.

The results for separate-application/restrictive states in Chart 3A are more straightforward and pronounced. At every decile through the 7th, we observe a large negative effect relative to both the automatic enrollment states and the separate-application/nonrestrictive states. This finding is consistent with coverage differences by policy regime (larger negative effects for separate-application/restrictive states than for separate-application/nonrestrictive regimes), up to and beyond the median. However, the pattern is reversed at the 9th and 10th deciles. The reversal at the upper tail may reflect statistical noise, unintended adverse effects of separate-application/restrictive policy, or one or more other factors. However, interpreting the cause of that reversal is beyond the scope of the analysis our data set allows.

Chart 3A does not show unambiguously negative relative effects of separate-application policy regimes on overall Medicaid expenditures, and one reason why we cannot be more definitive is the variance of outcomes at the upper tail. However, there is another important reason. Riley and Rupp (2014a, 2014b) show that national aggregate expenditures are heavily skewed toward the upper tail of the distribution (such that expenditures in the lowest decile are equal

or close to zero). Chart 3B clearly shows the same pattern for each of the three policy regimes. Thus, any effect of more restrictive Medicaid eligibility and enrollment practices at the lower tail may not extend to aggregate expenditures.

Chart 3A does unambiguously show that barriers arising from Medicaid enrollment policies are associated with lower expenditures at the bottom of the distribution. However, that result may not translate into a meaningful reduction in average Medicaid expenditures overall. An important implication of this finding is that enrollment policies requiring a separate application, especially in combination with more restrictive eligibility criteria, may not be effective in containing Medicaid outlays. Conversely, automatic enrollment may have relatively little or no positive overall effect on Medicaid expenditures. This suggests that automatic enrollment and other policies facilitating Medicaid enrollment among SSI awardees may increase access for this target population without generating major increases in Medicaid outlays.

In summary, although automatic enrollment increases Medicaid coverage, this study does not find evidence of the substantial upward pressure on

Chart 3B.
Percentage distribution of aggregate 2001–2006 Medicaid expenditures, by expenditure decile and state Medicaid policy regime
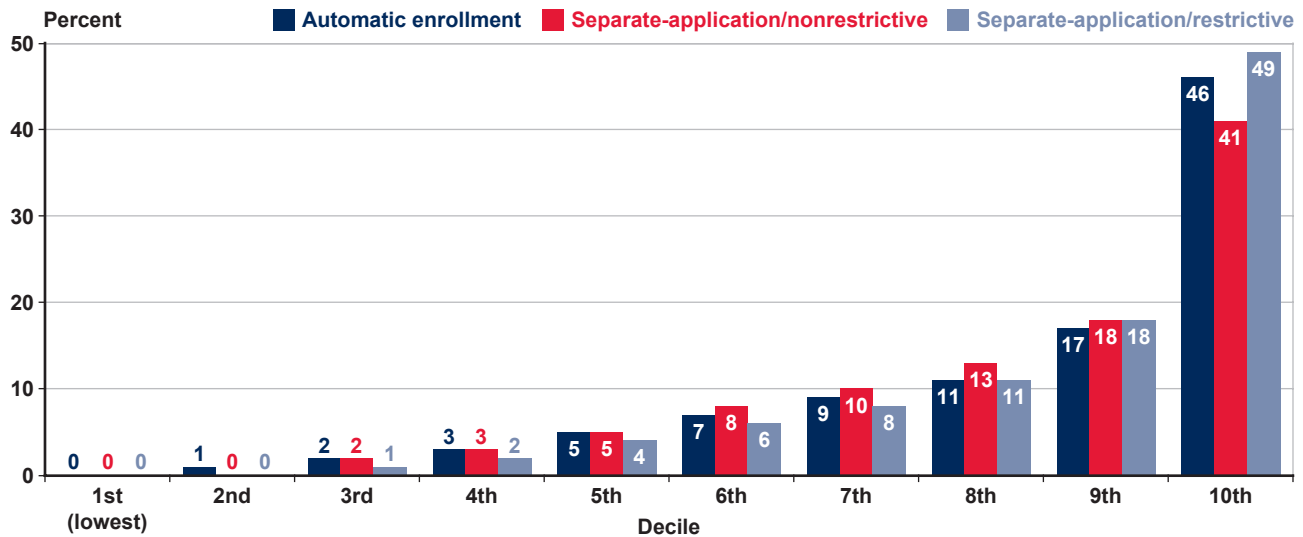
SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

A value of zero Medicaid expenditures is imputed for individuals who did not have Medicaid coverage in all 12 months of a given year.

Because Medicaid expenditures are heavily skewed toward the upper tail, expenditures in the 1st decile are equal or close to zero.

Rounded components of percentage distributions do not necessarily sum to 100.

Medicaid expenditures that policymakers in states opting for more restrictive Medicaid eligibility and enrollment policies might have feared. However, automatic enrollment's positive effect on access is muted by the potentially substantial lags inherent in the disability determination process, such that automatic enrollment is effective in increasing coverage only after SSA determines that the applicant meets the agency's definition of disabled. Combining the requirement of a separate application with more restrictive enrollment criteria has a clear negative effect on coverage and on expenditures at the lower tail. However, the average expenditure effects are muted by the strongly skewed nature of Medicaid expenditures and the lack of clear evidence that higher expenditures at the upper tail are attributable to restrictive enrollment policies.

Differences in Medicaid coverage patterns arising from different policy regimes do not translate into large average Medicaid expenditure effects because the policies seem to affect expenditures only at the lower tail. The results also suggest that automatic enrollment facilitates greater access to Medicaid, with little or no increase in Medicaid expenditures.

Conversely, we do not find strong evidence that restrictive Medicaid enrollment policies reduce access at the upper tail, as some policymakers might have feared. Nevertheless, restrictive Medicaid enrollment policies do not have a clear cost-containment effect, as some policymakers might have hoped.

Demographic characteristics. Table 7 shows death rates among SSI recipients by Medicaid coverage status by the 12th month of SSI eligibility, overall and disaggregated by state policy regime. We select the 12th month because policy-regime effects on coverage are greatest at roughly the 1-year mark, and we want to examine whether Medicaid policy regime modifies the relationship between coverage and mortality. We do not intend to evaluate the causal relationship between mortality risk and Medicaid policy regime. Instead, we examine the mortality rate among SSI awardees who do not acquire Medicaid coverage by the 12th month, and assess whether they are more or less likely to die within 12 months than Medicaid-covered SSI awardees are. We also examine whether that pattern varies by Medicaid policy regime.

Table 7.

Death rates within 12 months among 2000 SSI awardees aged 18–64, by Medicaid coverage status and state Medicaid policy regime

| Medicaid coverage status by the 12th month of SSI eligibility | Overall | Medicaid policy regime | | | Percentage-point difference: Automatic enrollment subtracted from—[a] | |
		Automatic enrollment	Separate-application/ nonrestrictive	Separate-application/ restrictive	Separate-application/ nonrestrictive	Separate-application/ restrictive
			Number			
Total	10,763	8,639	394	1,730	. . .	. . .
Not covered	1,342	828	63	451	. . .	. . .
Covered	9,421	7,811	331	1,279	. . .	. . .
			Death rate (%)			
Total	8.0	9.6	12.2	8.2	2.6	-1.4*
Not covered	6.3	5.1	9.5	8.0	4.4	2.9*
Covered	8.3	10.1	12.7	8.3	2.6	-1.8*
Net difference by coverage status	-2.0*	-5.0*	-3.2	-0.3	1.8	4.7*
			Standard error			
Total	0.3	0.3	1.6	0.7	1.7	0.7
Not covered	0.7	0.8	3.7	1.3	3.8	1.5
Covered	0.3	0.3	1.8	0.8	1.9	0.8
Net difference by coverage status	0.7	0.8	4.1	1.5	4.2	1.7

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

. . . = not applicable.

* = statistically significant at the 0.05 level (two-tailed test).

The death rates among SSI awardees are higher for those with Medicaid coverage by the 12th month than they are for those without coverage, regardless of policy regime. This finding is not surprising, given the severity of medical conditions and the risk of death that are associated with eligibility for Medicaid coverage. Indeed, SSA expedites initial award decisions in certain cases on those grounds. To analyze the effects of Medicaid policy regimes, we perform a difference-in-differences analysis. We observe a lower unadjusted death rate among all SSI awardees by the 12th month in separate-application/restrictive states (8.2 percent) than in automatic enrollment states (9.6 percent). However, the pattern is reversed for noncovered awardees, with rates of 8.0 percent in separate-application/restrictive states and 5.1 percent in automatic enrollment states. This finding is consistent with the hypothesis that delays in obtaining Medicaid coverage (as well as possible denials because of stricter eligibility criteria)

extend the period during which SSI awardees in separate-application/restrictive states are exposed to mortality risk. We find a net differential of 4.7 percentage points associated with separate-application/restrictive policies versus automatic enrollment. This is an important finding, but it does not imply that lack of Medicaid coverage increases the risk of death.[11] Although the relationship in death-rate patterns for separate-application/nonrestrictive states relative to automatic enrollment states is more complex, the net differential is likewise positive (1.8 percentage points). However, that differential is not statistically significant.

Table 8 describes the demographic and diagnostic characteristics of surviving SSI awardees by Medicaid coverage status. We consider awardees "covered" if they have any Medicaid coverage during their first 12 months of SSI eligibility. Overall, the age distribution of the noncovered group is similar to the age distribution of the Medicaid-covered group. However,

Table 8.
Percentage distributions of 2000 SSI awardees aged 18–64 who survived 12 months from award, by Medicaid coverage status during first year, state Medicaid policy regime, and selected characteristics

			Medicaid policy regime					
	Overall		Automatic enrollment		Separate application/ nonrestrictive		Separate application/ restrictive	
Characteristic	Not covered	Covered	Not covered	Covered	Not covered	Covered	Not covered	Covered
Number	1,258	8,640	786	7,161	57	306	415	1,173
	Percentage distributions							
Age group								
18–30	23.9	24.4	14.5	23.9	40.4	24.2	39.3	27.4
31–45	28.1	28.7	31.6	28.0	21.1	31.7	22.7	32.2
46–64	48.0	47.0	53.9	48.2	38.6	44.1	38.1	40.4
Sex								
Women	53.7	59.6	56.1	59.4	50.9	57.5	49.4	61.1
Men	46.3	40.4	43.9	40.6	49.1	42.5	50.6	38.9
SSA primary diagnosis								
Mental impairments [a]	27.0	34.5	24.8	33.7	22.8	35.0	31.8	39.4
Nonmental impairments								
Neoplasms	2.4	4.5	2.9	4.4	0.0	2.3	1.7	5.3
Diseases of the—								
Circulatory system	9.0	9.5	9.4	9.9	7.0	8.2	8.4	7.2
Musculoskeletal system	17.5	13.5	18.5	13.9	17.5	14.1	15.7	11.3
Other nonmental impairments	44.1	38.0	44.4	38.1	52.6	40.5	42.4	36.8
Retained SSI eligibility for 12 months								
Yes	84.7	91.6	85.8	91.9	82.5	87.9	83.1	90.3
No	15.3	8.4	14.2	8.1	17.5	12.1	16.9	9.7
	Standard errors							
Age group								
18–30	1.2	0.5	1.3	0.5	6.5	2.4	2.4	1.3
31–45	1.3	0.5	1.7	0.5	5.4	2.7	2.1	1.4
46–64	1.4	0.5	1.8	0.6	6.4	2.8	2.4	1.4
Sex								
Women	1.4	0.5	1.8	0.6	6.6	2.8	2.5	1.4
Men	1.4	0.5	1.8	0.6	6.6	2.8	2.5	1.4
SSA primary diagnosis								
Mental impairments [a]	1.3	0.5	1.5	0.6	5.6	2.7	2.3	1.4
Nonmental impairments								
Neoplasms	0.4	0.2	0.6	0.2	0.0	0.9	0.6	0.7
Diseases of the—								
Circulatory system	0.8	0.3	1.0	0.4	3.4	1.6	1.4	0.8
Musculoskeletal system	1.1	0.4	1.4	0.4	5.0	2.0	1.8	0.9
Other nonmental impairments	1.4	0.5	1.8	0.6	6.6	2.8	2.4	1.4
Retained SSI eligibility for 12 months								
Yes	1.0	0.3	1.2	0.3	5.0	1.9	1.8	0.9
No	1.0	0.3	1.2	0.3	5.0	1.9	1.8	0.9

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000 and who survived to month 12 of award. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

"Covered" indicates any Medicaid coverage during first 12 months, including the month of award.

Rounded components of percentage distributions do not necessarily sum to 100.0.

a. Includes intellectual disability.

the patterns by policy regime are different. Those who are covered in automatic enrollment states tend to be younger than the noncovered. In the two groups of states that require a separate Medicaid application, the covered tend to be relatively old.

For other characteristics, the distribution patterns of covered versus noncovered are similar among all three policy regimes and are also similar to the patterns observed for the overall national average. Women, people with mental impairments, and people who retained Medicaid eligibility for 12 months are overrepresented among the Medicaid covered compared to the noncovered. All of these differences are statistically significant overall. Although some of the differences disaggregated by policy regime are not statistically significant, all differ in the same direction. These findings are not surprising in light of Medicaid coverage patterns observed in previous work (Rupp and Riley 2011, 2012).

In Table 9, we use difference-in-differences methodology to analyze the relationship between policy regime and characteristics. Here we focus on the key results presented in two columns headed "not covered minus covered." The pattern of net age differences (that is, the difference-in-differences results) is highly significant and similar for both of the separate-application regimes. The (rounded) difference in differences (25.5 percentage points) reveals a much higher proportion of younger adults associated with no Medicaid coverage (compared with those with Medicaid coverage) in separate-application/nonrestrictive states relative to automatic enrollment states. The corresponding figure is 21.3 percentage points for separate-application/restrictive states relative to automatic enrollment states. The only other statistically significant difference in differences is the comparatively high proportion of SSI recipients with no Medicaid coverage in separate-application/restrictive states who are men. Importantly, we find no significant differential associations between policy regimes according to SSA diagnosis and SSI retention status at month 12.

Discussion

SSI recipients face the double jeopardy of disability and limited financial resources. Recognizing the economic vulnerability of those individuals, Congress enabled states to make SSI awardees categorically eligible for Medicaid if they chose to do so. Yet the adoption of varying Medicaid eligibility rules may create some barriers to Medicaid enrollment in some

states. In this article, we hypothesized that three factors reduce Medicaid enrollment: the requirement of separate SSI and Medicaid applications in some states, the imposition of stricter Medicaid eligibility requirements in some of those states, and the processing time required for SSI disability applications.

Consistent with our hypotheses, we observed Medicaid participation rates among SSI recipients in separate-application/nonrestrictive states that were lower than those in automatic enrollment states. As expected, we also observed that SSI recipients in separate-application/restrictive states generally had even lower rates of Medicaid participation.

Also consistent with our expectations, we found that the timing of a key event in the processing of SSI awards—the actual receipt of the first SSI payment by successful SSI applicants—was strongly associated with Medicaid enrollment. The time between first month of SSI eligibility and first month of actual payment reflects the time required to adjudicate an SSI claim. When a claim is approved, eligibility for SSI is typically established retroactively. We found that longer periods between initial eligibility and first payment were associated with lower Medicaid coverage rates during those intervening times. Specifically, we found that the first month of SSI payments is associated with a substantial, statistically significant, and abrupt increase in Medicaid enrollment. This finding suggests that, with other things being equal, the earlier the SSI award, the higher the probability of Medicaid enrollment. We found an important interaction effect between the timing of the first SSI payment and automatic enrollment. As expected, automatic enrollment generally affects Medicaid coverage positively, but this effect is exclusively attributable to higher Medicaid enrollment rates among those who have successfully completed their SSI eligibility determinations and have been paid their first SSI benefits. This result is not surprising, because automatic enrollment is triggered by a positive award decision and, prior to such a favorable decision, an applicant's SSI eligibility status is uncertain; many applicants are denied at least once before a favorable award decision is reached. This finding is especially important because Medicaid coverage can be established in principle as of the date of SSI application (or even as much as 3 months before then if the date of disability onset precedes the application date). It also means that improving the timeliness of disability determination decisions could improve the effectiveness of automatic enrollment and result in increased Medicaid participation among SSI disability recipients.

Table 9.

Difference-in-differences analysis of Medicaid coverage status in first 12 months from SSI award for 2000 SSI awardees aged 18–64 who survived 12 months from award, by Medicaid coverage status during first year, state Medicaid policy regime, and selected characteristics

Characteristic	Automatic enrollment subtracted from—					
	Separate-application/nonrestrictive			Separate-application/restrictive		
	Not covered	Covered	Not covered minus covered	Not covered	Covered	Not covered minus covered
	Percentage points [a]					
Age group						
18–30	25.9*	0.3	25.5*	24.8*	3.5*	21.3*
31–45	-10.5	3.7	-14.2*	-8.9*	4.3*	-13.2*
46–64	-15.3*	-4.0	-11.3	-15.9*	-7.8*	-8.1*
Sex						
Women	-5.2	-1.9	-3.4	-6.7*	1.7	-8.5*
Men	5.2	1.9	3.4	6.7*	-1.7	8.5*
SSA primary diagnosis						
Mental impairments [b]	-2.0	1.3	-3.3	7.0*	5.7*	1.3
Nonmental impairments						
Neoplasms	-2.9*	-2.1*	-0.8	-1.2	0.9	-2.1
Diseases of the—						
Circulatory system	-2.4	-1.7	-0.7	-1.0	-2.8*	1.8
Musculoskeletal system	-0.9	0.2	-1.1	-2.8	-2.5*	-0.3
Other nonmental impairments	8.2	2.5	5.8	-2.0	-1.2	-0.8
Retained SSI eligibility for 12 months						
Yes	-3.3	-4.0*	0.7	-2.6	-1.7	-1.0
No	3.3	4.0*	-0.7	2.6	1.7	1.0
	Standard errors					
Age group						
18–30	6.6	2.5	7.1	2.7	1.4	3.0
31–45	5.6	2.7	6.3	2.6	1.5	3.0
46–64	6.7	2.9	7.3	3.0	1.5	3.4
Sex						
Women	6.9	2.9	7.4	3.0	1.5	3.4
Men	6.9	2.9	7.4	3.0	1.5	3.4
SSA primary diagnosis						
Mental impairments [b]	5.8	2.8	6.4	2.8	1.5	3.2
Nonmental impairments						
Neoplasms	0.6	0.9	1.1	0.9	0.7	1.1
Diseases of the—						
Circulatory system	3.5	1.6	3.9	1.7	0.8	1.9
Musculoskeletal system	5.2	2.0	5.6	2.3	1.0	2.5
Other nonmental impairments	6.8	2.9	7.4	3.0	1.5	3.4
Retained SSI eligibility for 12 months						
Yes	5.2	1.9	5.5	2.2	0.9	2.4
No	5.2	1.9	5.5	2.2	0.9	2.4

SOURCE: Authors' calculations based on SSA and CMS administrative records.

NOTES: Sample comprises SSI awardees who were aged 18–64 at award in 2000 and who survived to month 12 of award. Sample is limited to first-time awardees who were not DI beneficiaries before or within 72 months of SSI award. SSI awardees who were first entitled to SSI payments prior to their 18th birthdays are not included in the sample cohort.

"Covered" indicates any Medicaid coverage during first 12 months, including month of award.

* = statistically significant at the 0.05 level (two-tailed test).

a. Values may not equal the differences between percentage values in Table 8 because of rounding.

b. Includes intellectual disability.

Finally, we looked at two sets of possible indirect effects. Our results suggest that automatic enrollment is not associated with a substantial, if any, increase in average Medicaid expenditures. We also found no evidence of alarming associations of Medicaid enrollment policies with any particular demographic characteristics.

Because our analysis covers a period prior to ACA implementation, our results cannot be generalized to post-ACA conditions; yet they do have important implications. First, our study demonstrates that low-cost administrative procedures (such as automatic enrollment) can increase Medicaid enrollment among vulnerable population segments. Second, our study provides an important baseline for future studies of the relationship between the SSI and Medicaid programs. Third, the ACA should bring opportunities to increase the effectiveness of automatic enrollment in states opting for Medicaid expansion. Specifically, Medicaid expansion under the ACA allows the administrative decoupling of the SSI award decision and SSA's automatic notification of state Medicaid offices. This is because the ACA eliminates the uncertainty about Medicaid eligibility among adults who meet the SSI income test in the Medicaid-expansion states; the ACA income screen is set at 135 percent of the family poverty threshold, while SSI uses a subpoverty-level income screen. Thus, categorical eligibility tied to meeting the SSA definition of disabled is no longer relevant for Medicaid eligibility. The Medicaid provisions of ACA potentially enable Medicaid enrollment of a huge segment of the adult population—including many individuals who do not meet the strict disability criteria required for categorical eligibility under SSI program rules—that comprised much of the uninsured prior to ACA implementation (Dorn 2008). Thus, one should expect a substantial increase in Medicaid eligibility among denied SSI applicants, and the pre-ACA reason why automatic enrollment was delayed until after the SSI award decision no longer applies.

A simple procedural modification of the automatic enrollment process could vastly improve Medicaid coverage rates among nonelderly SSI applicants. In Medicaid expansion states, SSA could simply notify the Medicaid authority shortly after SSI application; for example, when the field office establishes that the applicant meets the SSI means test. At that point in the current process, SSA automatically transfers the applicants' records to the state Disability Determination Service (DDS). Under ACA, the agency could simply transmit electronic records of those applicants simultaneously to the DDS and the state Medicaid office. This change would improve targeting of potential Medicaid enrollees in two ways. First, it would vastly increase the number of applicant records SSA could transfer to the state Medicaid authority, given that automatic enrollment currently omits roughly half of SSI disability applicants because their SSI applications are ultimately denied. Second, it would greatly accelerate automatic enrollment for allowances as well, because even though roughly half of applicants are ultimately awarded SSI, only about one-third are awarded in the initial DDS decision. Under the proposed modification, SSA would have no reason to wait even for the initial DDS decision before notifying the Medicaid authority in the expansion states. Because SSI disability applicants (including those who are denied) are among the most vulnerable Americans, this simple process modification could increase Medicaid enrollment, improve quality of care, and perhaps even reduce Medicaid expenditures for reasons similar to those discussed (in the context of churning) by Swartz and others (2015).

Notes

[1] These are sometimes called the "1634 states" because section 1634 of the Social Security Act authorizes states and SSA to enter into automatic-enrollment agreements.

[2] These are sometimes called the "criteria states" because they use the SSI eligibility criteria for Medicaid.

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