Contemporaneous and Long-Term Effects of CHIP Eligibility Expansions on SSI Enrollment

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1. Introduction

There is broad interest in the interaction between social programs, specifically how changes in eligibility for one aspect of the social safety net affect participation in other programs. To explore this issue, we studied the effect of expansions in Medicaid eligibility in the late 1990's and the early 2000's on children's applications for the Supplemental Security Income (SSI) program, an important component of the safety net for vulnerable children. Enacted in 1997, the Children's Health Insurance Program (CHIP) was designed to help close coverage gaps for children from low-income families who cannot afford private coverage but whose incomes are too high to qualify for Medicaid. The rollout of CHIP, along with concurrent Medicaid expansions targeting poor older children, led to a dramatic increase in public insurance eligibility for poor and near-poor children. A robust literature has emerged documenting the impacts of the expansions on a variety of coverage and health care outcomes (e.g. LoSasso and Buchmueller 2004; Currie et al. 2008). Less is known, however, about potential spillovers of the CHIP-era expansions on enrollment into other safety net programs serving similar populations.

2. Institutional context

Children who meet the Social Security Administration's (SSA) definition of disability and who are from families with sufficiently low income and resources are eligible for SSI benefits. SSI benefits provide a cash payment to help low-income parents care for their children with disabilities. SSI benefits also usually include health insurance coverage for the child beneficiary through Medicaid. Medicaid coverage can be particularly valuable for children with disabilities who likely incur high health costs (Kaiser Family Foundation 2017), as it covers a broad range of medical and supportive services at zero or minimal cost to families. In 33 states, children who qualify for SSI are automatically awarded Medicaid. In the remaining 17 states, SSI beneficiaries must meet additional criteria to receive Medicaid benefits.[16]

Several recent studies examined the effect of public insurance coverage expansions on application to disability benefit programs, although all focused on adults (Maestas et al. 2014; Burns and Dague 2017; Gouskova 2016; Schimmel Hyde et al. 2017; Chatterji and Li 2016). Taken together, the findings across these studies are decidedly mixed, with some suggesting health coverage might play a role in the decision to apply for disability benefits.

There are several potential pathways through which the CHIP-era insurance expansions might have influenced SSI applications among the affected cohorts. First, having coverage through Medicaid could reduce the value of an SSI award, potentially incentivizing some people not to incur the administrative burden of filing an application. Second, as part of CHIP-era expansions, many states eliminated or reduced complicated income disregards and reporting requirements, shortened application length, and increased the time between recertification intervals for public coverage (Lewit 2014). This may have further reduced the relative value of SSI, as the new income eligibility pathways provided a low-cost substitute for gaining public insurance coverage, especially for families that primarily valued SSI for the associated Medicaid

[16] For seven states (Alaska, Idaho, Kansas, Nebraska, Nevada, Oregon, and Utah), the only additional criterion is filing a separate application that will be accepted with certainty. For the remaining 10 states (Connecticut, Hawaii, Illinois, Minnesota, Montana, New Hampshire, North Dakota, Ohio, Oklahoma, and Virginia), the income criteria is more stringent, increasing the likelihood that the separate application will be rejected.

benefit. Finally, because a substantial share of parental income is deemed necessary to support other household members and is therefore not counted in the SSI means test for the child, many children who qualify for SSI would not have qualified for Medicaid under the more restrictive income criteria in place in most states before the CHIP-era expansions.

3. Empirical strategy

To isolate the plausibly causal effect of Medicaid/CHIP eligibility on SSI applications, we used a generalized difference-in-differences approach, with identification stemming from variation in the timing and generosity of the coverage expansions (1) within state over time and (2) within state across ages. We used the simulated eligibility approach first introduced by Currie and Gruber (1996a,b) that is still frequently used in related studies. We implemented this approach by running a fixed national cohort drawn from the 1996 Current Population Survey (March supplement) through each state's eligibility rules—assembled and shared by Brown et al. (2015)—for all age and year combinations, resulting in a measure that varies at the age-state-year level. The intent of using a fixed national cohort instead of state-specific cohorts was to isolate the effects of state-level policy generosity from any potentially endogenous population composition differences that might bias associations between observed eligibility and SSI receipt.

Our primary regression specification was as follows:

$$y_{ast} = \alpha + \beta_s + \beta_t + \delta_1 SIM_{ast} + \beta_1 X_{ast} + e_{ast} \qquad (1)$$

The outcome, y_{ast}, measures SSI applications filed per capita for a given age *a*, state *s*, and year *t*. We calculated application counts from SSA's Supplemental Security Record over given age-state-year cohorts for children ages 1 to 16 in all years from 1997 through 2010.[17] We controlled for state fixed effects (β_s), year fixed effects (β_t), and a set of variables, X_{ast}, that might be correlated with both the simulated eligibility and SSI outcome variables, such as real gross domestic product per capita and the percentage of children living in poverty. We also controlled for age trends in SSI applications using a linear spline with a knot at age 7, as child SSI applications increase up until age 7 and then decrease thereafter.

The key coefficient of interest is δ_1, which can be interpreted as the impact of a one percentage point increase in Medicaid eligibility on SSI applications per capita. Including state fixed effects and time fixed effects controls for any state-specific characteristics that are constant over time and any secular trends common to all states, respectively. Variation therefore comes from deviations from the general age pattern within a given state and year. Standard errors are clustered by state.

4. Results

Table 1 shows the estimated impact of a one percentage point increase in the simulated share of a given age/state/year cohort that is eligible for Medicaid on per capita SSI applications. The estimated coefficients in Columns (1) and (2) are positive and significant. However, these specifications do not control for general age patterns in applications.

[17] We excluded newborn children because low birthweight rules substantially increase application rates. Children age 17 are excluded because applications increase in anticipation of the change in SSI eligibility rules at age 18.

Our preferred specification in Column (3) controls for age trends in application and indicates a small effect of increased Medicaid eligibility on SSI applications. Though the coefficient is negative, the estimate is not statistically significant. Column (3) includes state and year fixed effects, whereas Column (4) includes state-by-year fixed effects. Using state-by-year fixed effects is a preferred robustness check adopted in the literature (for example, see Currie and Gruber [1996b]) and yields little change in the results.

Table 1. Impact estimates on SSI applications

	(1)	(2)	(3)	(4)
Simulated eligibility	0.00267**	0.00449***	-0.00010	-0.00025
	(0.00106)	(0.00122)	(0.00068)	(0.00079)
Controls	Yes	Yes	Yes	Yes
Fixed effects	None	State, year	State, year	State by year
Age linear spline	No	No	Yes	Yes
Observations	11,424	11,424	11,424	11,424

Note: ***/** indicates significance at the 1/5 percent level. Table presents estimates of the effect of a one percentage point increase in simulated eligibility on the number of SSI applications per capita, or an estimate of δ_1 from Equation (1). SSI applications per capita are measured at the age-state-year level from 1997 to 2010 for all states and children ages 1 to 16. Standard errors are shown in parentheses and are clustered by state.

The magnitudes of these coefficients are small; in response to a 10 percentage point increase in the share eligible for Medicaid (a 21 percent increase relative to the mean), SSI applications per capita decreased by .01 percentage points, or a .02 percent decrease relative to the mean. The 95 percent confidence interval rules out an increase or decrease in applications per capita larger than 3 percent from a 21 percent increase in the simulated share eligible.

Although the aggregate results suggest no effect of Medicaid eligibility on SSI applications, there is substantial state heterogeneity in this relationship. We categorized states by if they automatically confer Medicaid after an SSI award. Application rates were significantly lower in states with an additional criterion required to receive Medicaid, averaging just 0.37 percentage points compared to 0.61 percentage points in states with automatic receipt. However, acceptance rates were comparable across the two types of states, indicating that the disability severity of applicants is also likely similar.

Table 2 shows the results of estimating a regression allowing for heterogeneity in the relationship between the share eligible and whether a state requires additional criteria to receive Medicaid.[18] There is a significant, negative relationship in the states that have additional criteria

[18] We implemented this in the regression by adding an indicator for whether the state requires additional criteria for Medicaid receipt and the interaction between this indicator and the share eligible to Equation (1).

to receive Medicaid and a small, insignificant relationship in the states where SSI awardees are automatically enrolled.

This finding could stem from the fact that different populations apply in states with automatic Medicaid receipt and those with additional criteria. The marginal applicant in states with additional criteria is likely different; he or she might most desperately need health insurance coverage, meaning that an alternative option to receive Medicaid might make an SSI award less valuable. This reduction in the relative value of an award might lead to the reduction in applications observed in these states with additional criteria to receive Medicaid. However, in states with automatic Medicaid receipt, we found a small effect of increased Medicaid eligibility, suggesting there is little complementarity or substitution between programs in these states. Prior research into the relationship between disability benefit applications and health insurance eligibility for adults has also found substantial state heterogeneity (Schimmel Hyde et al. 2017, Chatterji and Li 2016).

Table 2. Impact estimates on SSI applications, by state

	States that automatically award Medicaid with SSI qualification	States with additional criteria to receive Medicaid after SSI qualification
Simulated eligibility	0.00080	-0.00446***
	(0.00085)	(0.00133)
Controls	Yes	
Fixed effects	State, year	
Age linear spline	Yes	
Observations	11,424	

Note: *** indicates significance at the 1 percent level. Table presents estimates of the effect of a one percentage point increase in simulated eligibility on the number of SSI applications per capita, or an estimate of δ_1 from Equation (1), separately by state groups. The states with an additional criterion to receive Medicaid after a new SSI award are Alaska, Connecticut, Hawaii, Idaho, Illinois, Kansas, Minnesota, Montana, North Dakota, Nebraska, New Hampshire, Nevada, Ohio, Oklahoma, Oregon, Virginia, and Utah. SSI applications per capita are measured at the age-state-year level from 1997 to 2010 for all states and children ages 1 to 16. Standard errors are shown in parentheses and are clustered by state.

We implemented several checks to demonstrate the robustness of our results. First, we varied the regression specification in multiple ways to exploit the source of variation in Medicaid eligibility. We estimated a specification with state and age fixed effects, allowing variation at the year level, controlling for a linear time trend as applications to child SSI increased linearly over time. We also estimated a specification with age and year fixed effects, allowing variation at the state level, controlling for broader geographic trends in outcomes with dummies for each SSA administrative region. The results are similar to our main results in both specifications.

Second, as a placebo test, we estimated the impact of child eligibility on applications to SSI. People older than 65 have SSI eligibility entirely determined by income rather than any disability

status. Because such people are already guaranteed health insurance through Medicare, the potential health insurance benefit of qualifying for SSI is quite low. We reestimated Equation (1) using applications at age $a + 65$ rather than age a as the outcome variable. We found no relationship between the falsified child Medicaid eligibility and old age applications, either overall or by Medicaid state criteria.

5. Next steps

We plan to conduct additional analyses of the impact of CHIP-era eligibility expansions in Medicaid on both SSI awards and the number of total SSI beneficiaries. A secondary focus of this project is to assess the impact of exposure to public coverage as a child on SSI outcomes in adulthood. We will use a similar strategy, estimating the effect of cumulative years of simulated eligibility during childhood on adult outcomes. Preliminary analyses suggest a small, positive relationship between eligibility and longer-term applications, though results are noisy.

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