# THE LONG-RUN EFFECTS OF MEDICAID ON DISABILITY APPLICATIONS*

Tanya Byker, Middlebury College

Andrew Goodman-Bacon, Vanderbilt University and NBER

August 24, 2018

Abstract:

This paper estimates the long-run effects of childhood Medicaid eligibility on Social Security Disability Insurance (DI) applications using the program's original introduction (1966-1970) and its mandated coverage of welfare recipients. We construct a state-of-birth by year-of-birth panel using the 1996-2008 Surveys of Income and Program Participation. The design compares cohorts born in different years relative to Medicaid implementation, in states with different pre-existing welfare-based eligibility. The results show that early childhood Medicaid coverage is associated with lower application rates. This is consistent with reductions in DI participation stemming from lower application rates rather than higher rejection rates.

Contact Information: Department of Economics, Vanderbilt University, VU Station B #351819 2301 Vanderbilt Place Nashville, TN 37235-1819; (615) 875-8431; andrew.j.goodman-bacon@vanderbilt.edu

* Acknowledgements: This research was supported by the U.S. Social Security Administration through grant #5 DRC12000002-06 to the National Bureau of Economic Research as part of the SSA Disability Research Consortium. The findings and conclusions expressed are solely those of the authors and do not represent the views of SSA, any agency of the Federal Government, or the NBER. All errors are our own.

Medicaid’s introduction in 1965 provided new health insurance coverage for over 10 million children each year. This coverage generated large improvements in later-life health and reduced disability insurance (DI) participation (Goodman-Bacon 2018). Changes in the stock of DI participants, however, obscure potentially large effects on well-being that come from the lengthy application process. If Medicaid’s long-run health effects reduced DI receipt by increasing rejection rates conditional on applying, then treated cohorts still spent significant time waiting for benefit decisions and thus incurring costs in terms of human capital decay (Autor et al. 2015). If Medicaid reduced application rates, however, then treated cohorts accumulated additional work experience by avoiding the DI application process altogether.

This paper exploits Medicaid’s original introduction to estimate the effect of early life insurance coverage on later life DI applications. We use a sample of 62,997 white adults ages 25-64 in the 1996-2008 Survey of Income and Program Participation (SIPP) to construct a state-of-birth by year-of-birth panel. Following Goodman-Bacon (2018), our empirical approach is a difference-in-differences design that exploits the introduction of Medicaid, which exposed cohorts to public health insurance for different shares of their childhoods, and the fact that Medicaid required eligibility for welfare recipients, which generated cross-state variation based on pre-existing welfare participation rates. We report two-stage least squares results that instrument for each cohort’s cumulative childhood Medicaid eligibility with predicted eligibility based only on year of birth and initial welfare rates in each cohort’s state of birth. The results confirm that Medicaid reduces adult DI participation and show that nearly all of the effect can be explained by reductions in application rates.

## I. Background: The DI Application Process

We focus on Medicaid's long-run effects on DI application behavior because the process entails large direct and indirect costs, and it is not clear a priori how changes in adult health would affect applications. Imagine, for example, that people apply for DI when they feel that their health crosses a threshold, and also that applications are accepted when some measure of health crosses an even more stringent threshold. This is consistent with some applications being rejected, for example. This simple framework suggests that changes in adult health should reduce adult DI participation (the probability of crossing the "acceptance" threshold).

Recent evidence shows that Medicaid's introduction improves adult health and reduces DI receipt (Goodman-Bacon 2018), but cannot draw conclusions about why DI participation changes. If childhood Medicaid coverage moves adult health across the acceptance threshold but not the application threshold, DI participation will fall via rejections and applications will not change. Treated individuals incur direct and indirect costs of applying without ultimately receiving benefits. Alternatively, if Medicaid moves adult health across the application threshold, DI participation will fall because applications fall. Treated individuals avoid the costly application process. Therefore, understanding the reason *how* Medicaid shapes pathways through the DI system matters for the welfare implications of an observed reduction in DI participation.

DI applications have important direct costs in terms of time and indirect costs in terms of human capital decay. Deshpande and Li (2017) document average processing times for first DI applications of 29 days, average walk-in wait times of 14 minutes, and average transit time to SSA offices of 89 minutes. These do not include time spent on the phone with SSA's information lines. Furthermore, these statistics refer only to the average visit, and applicants may need to return many times.[1] A more substantial cost arises because applicants cannot engage in "substantial gainful activity" while they await decisions, a process that can take years. Autor et al. (2015) use the random assignment of applicants to faster or slower judges to show that human capital and labor market outcomes decay with time spent waiting for a DI decision.

Recent research on Medicaid's longer-run effects has focused mainly on health, education, and labor market outcomes (Brown, Kowalski, and Lurie 2015, Cohodes et al. 2014, Goodman-Bacon 2018, Miller and Wherry 2014, Thompson 2017, Wherry and Meyer 2013, Wherry et al. 2015). Most datasets that allow this research to link adult respondents to their childhood Medicaid exposure, such as Vital Statistics, tax records, or Census data, only include information on point in time program participation, but not program entry or exit. Therefore, while existing evidence suggests that Medicaid affects participation in programs like DI, we do not know how these changes arise. We combine variation in Medicaid exposure from the program's original introduction with survey data on DI applications to fill this gap.

## II. DATA: CREATING A COHORT PANEL FROM THE SIPP

To examine the connection between Medicaid and DI applications we must be able to match adult respondents to their childhood Medicaid exposure and to observe variables related to DI application behavior. Data from the 1996-2008 Surveys of Income and Program Participation provide state and year of birth and a question about whether respondents have applied for DI in the past year. Because we measure Medicaid exposure by race (see below) we only have enough observations for white respondents. We restrict to those born between 1936 and 1976, observed between ages 25 and 64, with a valid entry for U.S. state of birth. This yields a sample of 62, 997

[1] Direct costs may not be very important for rejected applicants because SSA requires that fees for legal representatives pay be limited to the lesser of 25 percent of their past-due benefit amount of $6,000 *only* in the event of a favorable decision. Rejected applicants with legal representation thus do not have to pay.

respondents. Since our identifying variation (discussed below) is at the cohort level, we use the SIPP to construct a cohort-level panel of averages by state- and year-of-birth and we do not exploit the longitudinal structure. The average (median) number of respondents per cell is 170 (87).

## III. RESEARCH DESIGN: DIFFERENCE-IN-DIFFERENCES BASED ON INITIAL AFDC RATES

Medicaid was included in the 1965 Social Security Act Amendments, and represented a major expansion in the availability and generosity of (publicly funded) medical care for poor children. Medicaid liberalized federal financing of medical care, defined a set of required medical services (inpatient, outpatient, physician, lab, x-ray, and nursing home) and mandated coverage for recipients of cash transfer programs (the "categorical eligibility" requirement). Almost all children on Medicaid qualified as categorically eligible through the Aid to Families with Dependent Children (AFDC) program. Therefore, AFDC participation rates essentially equal Medicaid eligibility rates. All states except Alaska (1972) and Arizona (1982) implemented Medicaid between 1966 and 1970.

The empirical approach is a straightforward difference-in-difference model based on two features of Medicaid policy: when states implemented the program and the AFDC participation rates that defined child eligibility.[2] Cross-state patterns of AFDC participation also differed strongly by race, so we focus on white respondents for whom we have sufficient sample size to detect effects.[3] The design compares changes in outcomes across cohorts at different times

[2] Almost all categorically eligible children (89 percent) qualified through the Aid to Families with Dependent Children (AFDC) program (DHEW 1976).

[3] I construct each state's nonwhite share of AFDC children using printed tables for 1958 and 1961 (Mugge 1960, DHEW1963), microdata on AFDC recipients from 1967-1997 (DHEW 2000, 2011, United States Department of Health and Human Services 2013). I interpolate the race shares between missing years, multiply by average monthly counts of AFDC children (U.S. Department of Health and Human Services 2012), and divide by population (Haines and ICPSR 2010, Surveillance of Epidemiological End Results 2013) to calculate $AFDC_{ry\ell}$.

relative to Medicaid's introduction ($t_s^*$; first difference) in states with different child AFDC rates in the *year of* Medicaid implementation, ($AFDC_s^*$; second difference).[4]

The evidence presented in Goodman-Bacon (2018) shows that longer-run institutional features of states drove the AFDC rates we use for identification. They are empirically unrelated to a wide range of pre-Medicaid measures of cohort health, SES, state public health efforts, and health attitudes, and to the concomitant expansion of other War on Poverty programs (Goodman-Bacon 2017). Nevertheless, figure 1, reproduced from Goodman-Bacon (2017), shows that after Medicaid's introduction, $AFDC_s^*$ corresponds to a sharp increases in the share of children who actually received public insurance benefits.

We construct cohort-level cumulative Medicaid eligibility using data on AFDC rates (the basis of child eligibility) and cohort mobility. Cohorts are defined by their year of birth ($c$) and state of birth ($s$). Cumulative Medicaid eligibility between ages $a$ and $b$ equals the weighted sum across a cohort's childhood years ($y$) *and* the states of residence ($\ell$) of that cohort:

$$m_{sc}(a,b) = \sum_{y=c+a}^{y=c+b} \sum_{\ell} \sigma_{sc}^{y}(\ell) \cdot AFDC_{y\ell} \cdot 1\{y \geq t_\ell^*\} \qquad (1)$$

$1\{y \geq t_\ell^*\}$ equals one if year $y$ is after state $\ell$'s Medicaid implementation date ($1966 \leq t_\ell^* \leq 1970$), and $AFDC_{y\ell}$ denotes the average monthly child AFDC participation rate in state ($\ell$), and year ($y$).[5] $\sigma_{rsc}^{y}(\ell)$ is the distribution of state of residence which we observe every five years in the 1970-2000 Censuses and linearly interpolate to an annual frequency.

---

[4] This provides a fixed ranking of states by which to compare adult outcomes and avoids comparisons between earlier and later Medicaid-adopting states, which differed on a range of characteristics.

[5] All eligibility measures refer to the expected number of *full* years of Medicaid eligibility. Because of churning in AFDC caseloads, the expected number of years with *any* Medicaid eligibility is higher. Given sample size limitations in the SIPP and our consequent focus on whites, AFDC rates in the text always refer to white AFDC rates. Goodman-Bacon (2018) calculates race shares of AFDC children using printed tables for 1958 and 1961 (Mugge 1960, DHEW1963), microdata on AFDC recipients from 1967-1997 (DHEW 2000, 2011, United States Department of Health and Human Services 2013). These are interpolated between missing years, multiplied by

Actual cumulative eligibility varies for a range of reasons that may independently affect adult DI applications, including policy changes or economic circumstances that change AFDC rates or selective cohort migration. We formalize the DD model described above by constructing predicted eligibility instrument based only on year of birth relative to Medicaid and initial AFDC rates:

$$z_{sc}(a,b) = \sum_{y=c+a}^{y=c+b} AFDC_s^* \cdot 1\{y \geq t_s^*\} \tag{2}$$

$z_{sc}$ grows linearly for cohorts born closer to Medicaid's start date in their state of birth ($t_s^*$), and does so at a faster rate for cohorts from higher-AFDC states ($AFDC_s^*$). We measure childhood eligibility separately from ages 0-11 and ages 12-18.

We estimate 2SLS models treat early-childhood and later childhood eligibility—$m_{sc}(0,11)$ and $m_{sc}(12,18)$—as endogenous variables and use $z_{sc}(0,11)$ and $z_{sc}(12,18)$ as instruments. Our specifications include fixed effects for state of birth and year of birth, as well as region-by-cohort fixed effects and Medicaid-year-by-cohort fixed effects ($\boldsymbol{\mu}_{\boldsymbol{t_s^*,c}}$) (which eliminate comparisons between earlier and later Medicaid-adopting states). We also present reduced-form event-study estimates that interact dummies for "event-cohorts" (that is, year of birth relative to Medicaid) with initial eligibility, but we note that unlike in larger Census datasets, these kinds of semiparametric estimates from the SIPP are quite noisy.

## IV. RESULTS

Figure 2 and table 1 document the first-stage relationship between predicted Medicaid eligibility and our measure of actual cohort-level cumulative eligibility. The first-stage event-study

average monthly counts of AFDC children (U.S. Department of Health and Human Services 2012), and divided by population (Haines and ICPSR 2010, Surveillance of Epidemiological End Results 2013) to calculate race-specific AFDC rates.

estimates show that cohorts born within about 11 years of Medicaid's introduction and in states one percentage point apart in initial AFDC rates gain about 0.02 years more early childhood eligibility (under age 12) for each year they are exposed to any Medicaid program, amounting to about 0.08 additional years for cohorts exposed throughout their childhood. Table 1 shows that the partial correlation between predicted and actual early childhood eligibility is 0.68 (s.e. = 0.22) with an Angrist/Pischke $F$-statistic of 27.8. Predicted eligibility based on initial AFDC rates is therefore a strong instrument.

Extensive evidence on the validity of this design is provided in Goodman-Bacon (2017) and Goodman-Bacon (2018). Briefly, initial AFDC rates provide plausibly exogenous variation in Medicaid eligibility because they are highly persistent over time and derive mainly from institutional factors in place at the state level decades before Medicaid's passage. Empirically, $AFDC_s^*$ is uncorrelated with poverty rates, pre-Medicaid levels and trends in infant and child health and socioeconomic status, mid-century public health campaigns (such as the dissemination of the Salk polio vaccine), and the concomitant roll-out of other War on Poverty programs like Community Health Centers, Head Start, and Food Stamps.

Table 2 presents the main IV estimates for later life disability program participation. As in earlier work, we find that early childhood Medicaid exposure reduces later life DI participation, in this case by -2.85 percentage points per year of early childhood eligibility (s.e. = 1.56). We find no effect on receipt of SSI benefits. Our central result is that essentially all of this effect in the SIPP sample can be explained by a reduction in the probability of a recent DI application. The third column in table 2 shows that this probability falls by 2.84 percentage points per year of childhood eligibility (s.e. = 1.35). (As with the probability of SSI receipt, we find no effect on SSI applications.) Figure 3 presents the event-study estimates that correspond to the IV results. While this estimator is quite imprecise in the SIPP sample, it does demonstrate that differential changes in DI applications for cohorts from higher AFDC states appear only for those exposed around age 11 and are not the result of an ongoing trend across cohorts not exposed to Medicaid.

If DI applications fall because of Medicaid-induced health improvements, these must be apparent enough that treated adults recognize them. Table 3 presents IV estimates for a range of specific physical limitations and shows that treated cohorts report lower levels of difficulty with common activities of daily living. Column 1 presents a disability measure constructed to be comparable to the “ambulatory difficulty” question in the Census and American Community Survey. It equals the share of respondents who report having trouble lifting 10 pounds, reaching over their head, or walking up a flight of 10 stairs. One year of early childhood Medicaid eligibility is associated with a reduction of 3.97 percentage points (s.e. = 1.97) in the probability of “ambulatory difficulty”, nearly identical to the result using Census data in Goodman-Bacon (2018): -4.26 percentage points (s.e. = 1.06).

The rest of the table shows broad improvements in basic, salient physical functions. Difficulty with lifting 10 pounds, reaching over one’s own head, standing on one’s feet for an hour, and walking up 10 stairs all fall by between 3 and 5 percentage points. Interestingly, we find no effect on the probability of lifting 25 pounds. This is consistent with improvements at the “low end” of health. Medicaid helps people avoid the kinds of fairly severe limitations that may induce a DI application, but does not detectably improve their ability to perform more stringent tasks.

## V. Discussion

That early childhood Medicaid coverage not only reduces DI participation, but also DI applications helps to clarify how Medicaid works, to refine our understanding of the ways in which it improves its recipients' well-being, and how health programs have long-run effects on the way disability programs operate.

At least when measured by DI applications in the last year, Medicaid appears to reduce DI participation through reduced applications rather than increased rejections. One caveat to this result is that the SIPP does not ask whether respondents have *ever* applied for DI. Presumably those rejected several years before the survey would neither receive DI nor recently have applied. Future research using administrative data on DI applications could overcome this limitation.

Nevertheless, knowing that applications fall clarifies how Medicaid affects adults' experience with DI: they are more likely to avoid it completely. This suggests another channel through which Medicaid increases adult employment (as in Goodman-Bacon 2018). Not only does Medicaid improve health directly and help adults avoid the negative work incentives of actually receiving DI, it also helps them avoid the human capital decay that occurs while waiting for a decision on their DI application.

Finally, these results point to important spillovers across programs and over time. Proposed DI reforms often seek to reduce participation, increase employment, and address case processing backlogs (Autor and Duggan 2006, Liebman 2015). By creating healthier adult cohorts, childhood Medicaid coverage appears to achieve all three, at least with respect to the program's introduction.

## VI. CONCLUSION

This paper evaluates the effect of childhood Medicaid coverage on the probability of applying for Social Security Disability Insurance later in life. We identify these effects using variation in childhood coverage induced by Medicaid's introduction in the 1960s and its statutory link to cash welfare programs. Our results suggest that previously documented reductions in DI participation come from nearly identically sized reductions in DI applications. Additional evidence links these changes to improvements in easily observable health problems that limit common activities of daily living.

## VII. References


Autor, David H., and Mark G. Duggan. 2006. "The Growth in the Social Security Disability Rolls: A Fiscal Crisis Unfolding." *Journal of Economic Perspectives* 20 (3):71-96.

Autor, David H., Nicole Maestas, Kathleen J. Mullen, and Alexander Strand. 2015. "Does Delay Cause Decay? The Effect of Administrative Decision Time on the Labor Force Participation and Earnings of Disability Applicants." *National Bureau of Economic Research Working Paper Series* No. 20840. doi: 10.3386/w20840.

Brown, David W., Amanda E. Kowalski, and Ithai Z. Lurie. 2015. "Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts?" *National Bureau of Economic Research Working Paper Series* No. 20835. doi: 10.3386/w20835.

Cohodes, Sarah, Samuel Kleiner, Michael F. Lovenheim, and Daniel Grossman. 2014. "The Effect of Child Health Insurance Access on Schooling: Evidence from Public Insurance Expansions." *National Bureau of Economic Research Working Paper Series* No. 20178. doi: 10.3386/w20178.

Department of Health, Education, and Welfare. 1963. Characteristics of Families Receiving Aid to Families with Dependent Children, November-December 1961. edited by Bureau of Family Services Welfare Administration, Division of Program Statistics and Analysis.

Department of Health, Education, and Welfare. 1976. Medicaid State Tables Fiscal Year 1976: Recipients, Payments, and Services. edited by Office of Policy Health Care Financing Administration, Planning, and Research. Washington D.C.

Department of Health, Education, and Welfare. 2000. AFDC Data for Assistance Units and Persons, 1979. U.S. Department of Health and Human Services. Office of the Assistant Secretary for Planning and Evaluation.

Department of Health, Education, and Welfare. 2011. Surveys of Recipients of Aid to Families with Dependent Children, 1967-1977. edited by National Center for Social Statistics Social and Rehabilitation Service, Population Surveys Branch: National Archives and Records Administration. Social Security Agency.

Deshpande, Manasi, and Yue Li. 2017. "Who Is Screened Out? Application Costs and the Targeting of Disability Programs." *National Bureau of Economic Research Working Paper Series* No. 23472. doi: 10.3386/w23472.

Goodman-Bacon, Andrew. 2017. "Public Insurance and Mortality: Evidence from Medicaid Implementation." *Journal of Political Economy* 126 (1):216-262. doi: 10.1086/695528.

Goodman-Bacon, Andrew. 2018. "The Long-Run Effects of Childhood Insurance Coverage: Medicaid Implementation, Adult Health, and Labor Market Outcomes." *Working Paper*.

Haines, Michael R., and ICPSR. 2010. Historical, Demographic, Economic, and Social Data: The United States, 1790-2002. ICPSR [distributor].

Liebman, Jeffrey B. 2015. "Understanding the Increase in Disability Insurance Benefit Receipt in the United States." *Journal of Economic Perspectives* 29 (2):123-50.

Miller, Sarah, and Laura R. Wherry. 2014. "The Long-Term Health Effects of Early Life Medicaid Coverage." *University of Michigan Working Paper*.

Mugge, Robert. 1960. Characteristics and Financial Circumstances of Families Receiving Aid to Dependent Children, Late 1958. edited by Department of Health, Education, and Welfare. Washington, D.C.

Surveillance, Epidemiology, and End Results (SEER). 2013. Surveillance, Epidemiology, and End Results (SEER) Program Populations (1969-2011). edited by DCCPS National Cancer Institute, Surveillance Research Program, Surveillance Systems Branch.

Thompson, Owen. 2017. "The long-term health impacts of Medicaid and CHIP." *Journal of Health Economics* 51:26-40. doi: https://doi.org/10.1016/j.jhealeco.2016.12.003.

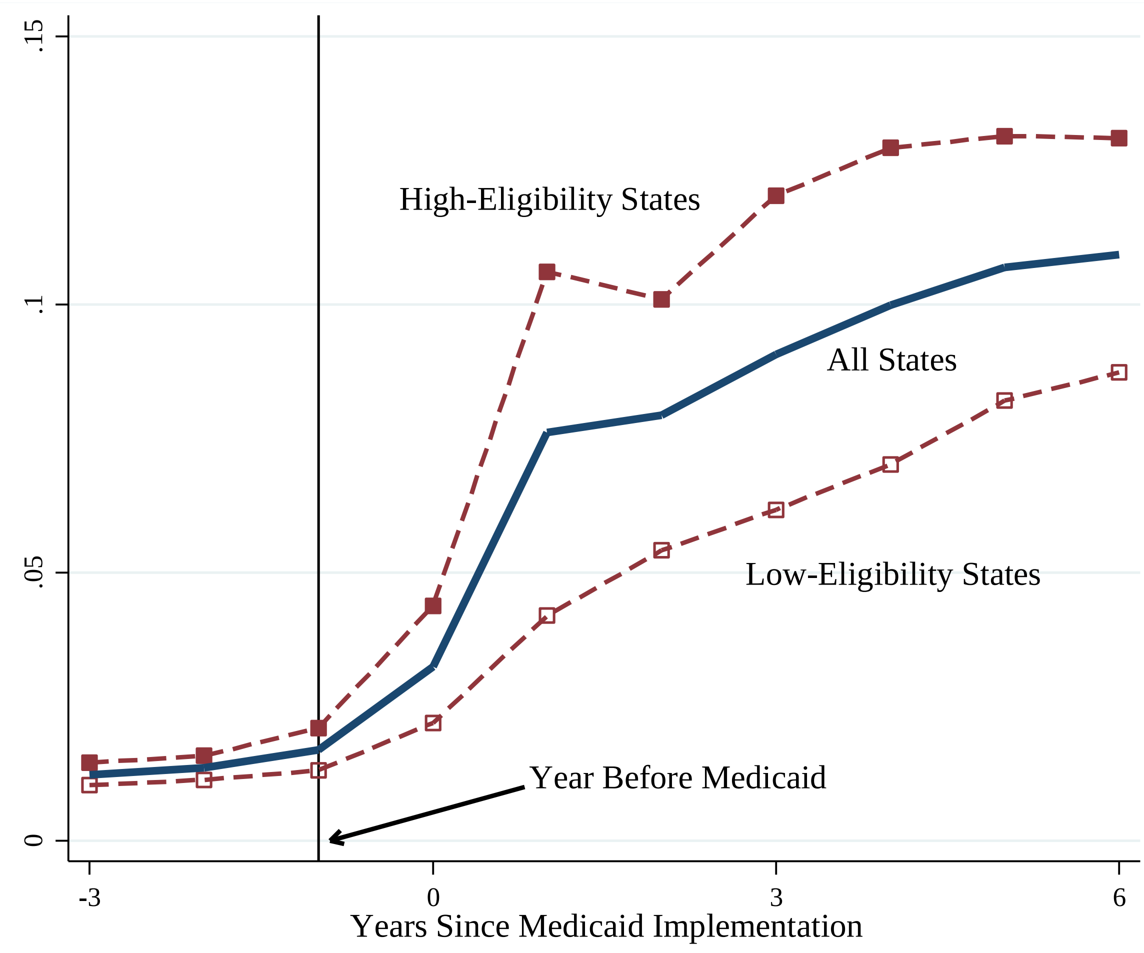
United States Department of Health and Human Services. 2013. AFDC Quality Control Data. edited by Office of Family Assistance and Administration for Children and Families.

United States Department of Health and Human Services, Administration for Children and Families, and Office of Family Assistance. 2012. "Caseload Data 1960 - 1999."

Wherry, Laura R., and Bruce D. Meyer. 2013. "Saving Teens: Using a Policy Discontinuity to Estimate the Effects of Medicaid Eligibility." *National Bureau of Economic Research Working Paper Series* No. 18309.

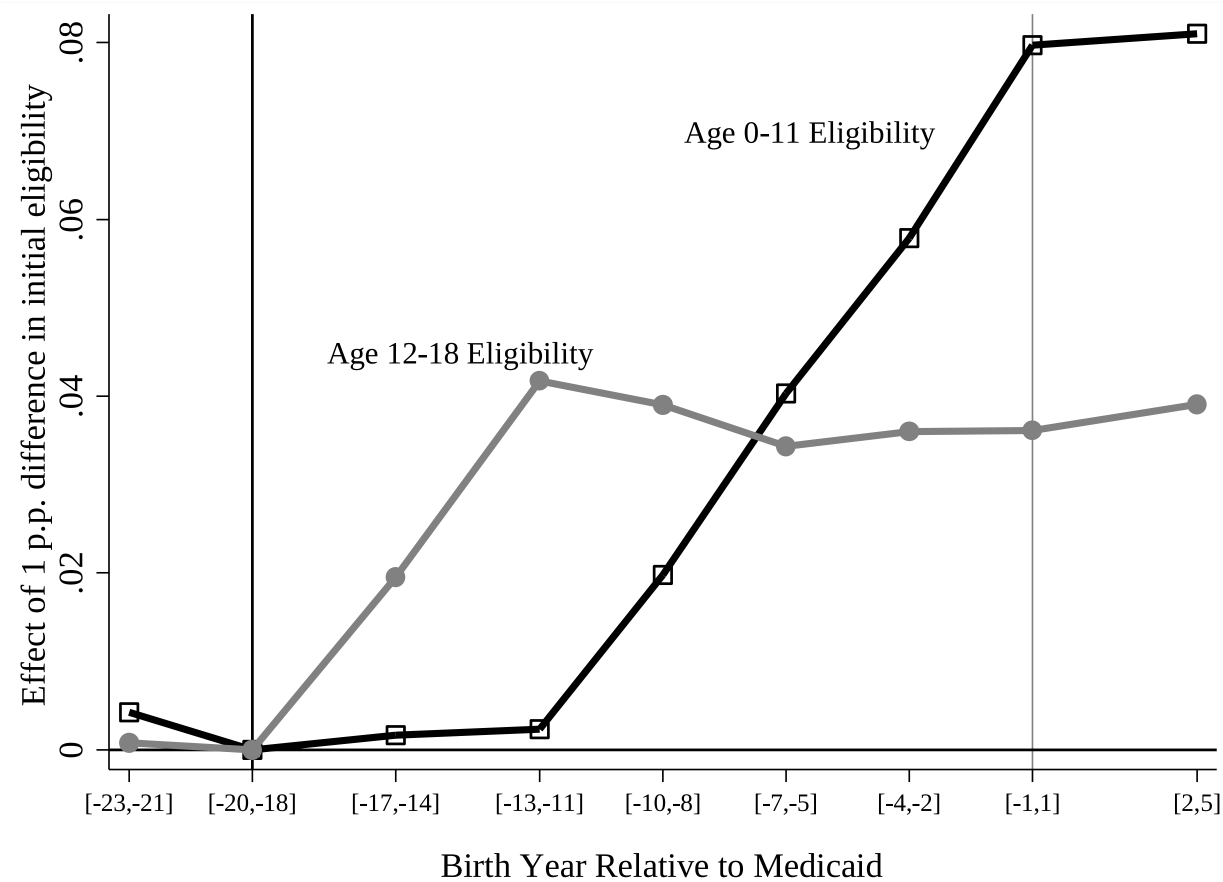
Wherry, Laura R., Sarah Miller, Robert Kaestner, and Bruce D. Meyer. 2015. "Childhood Medicaid Coverage and Later Life Health Care Utilization." *National Bureau of Economic Research Working Paper Series* No. 20929. doi: 10.3386/w20929.

**Figure 1. The Share of Children Using Public Health Insurance Before and After Medicaid**



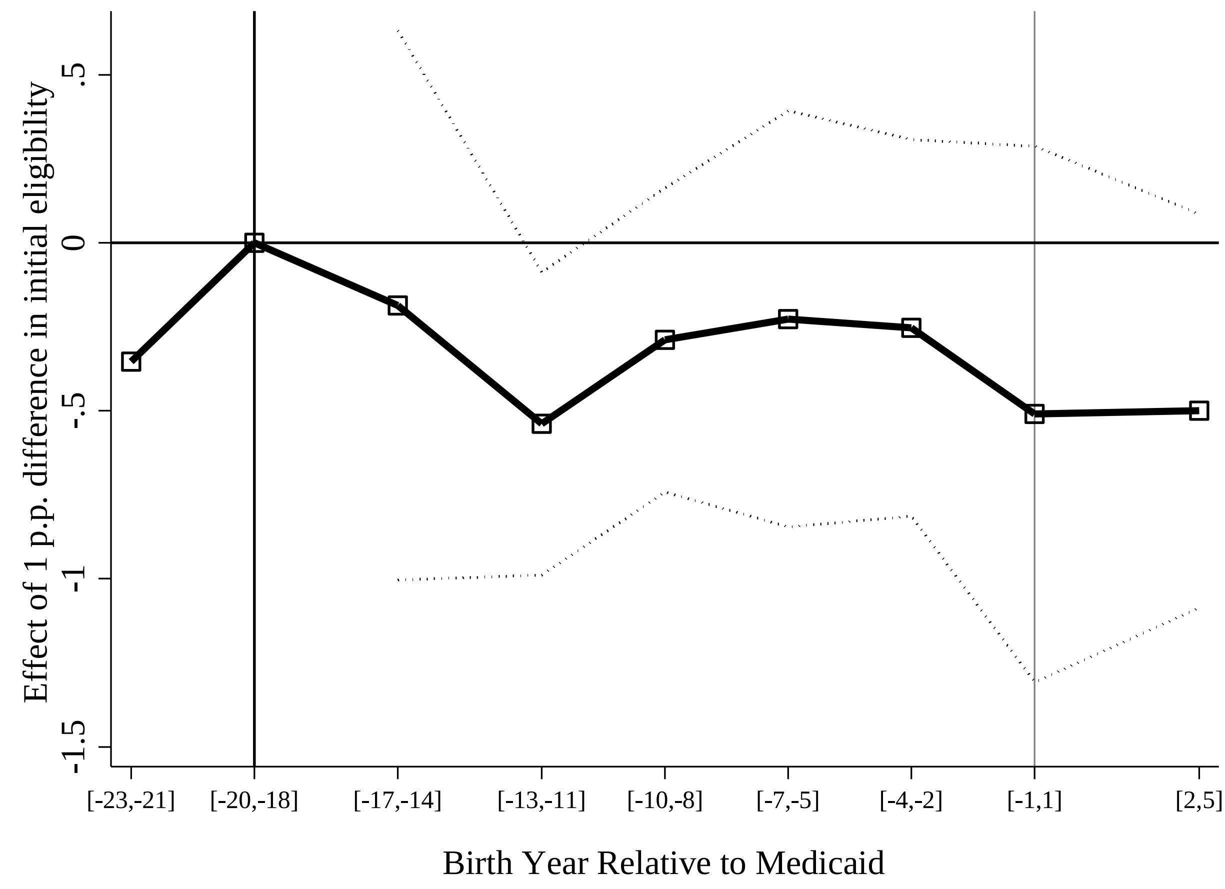

Notes: The figure plots the share of children ages 0-19 who received medical services paid for by a means-tested public insurance program in the years before and after states implemented Medicaid. High- and low-eligibility states are defined by the median value of AFDC rates in the year states implemented Medicaid ($AFDC_S^*$). Sources: AFDC cases are from Health and Human Services Caseload Data 1960-1999 (HHS 2012); population data are from 1960 population estimates (Haines and ICPSR 2005) and the Survey of Epidemiological End Results (SEER 2009); data on public insurance use are collected from various editions of “Recipients of Medical Vendor Payments Under Public Assistance Programs” and “Medicaid State Tables” (DHEW 1963-1976).

**Figure 2. First-Stage Relationship Between AFDC* and Expected Years of Medicaid Eligibility**




Notes: The dependent variable is each cohort's cumulative, migration-adjusted Medicaid eligibility for ages 0-11 and 12-18. Outcomes are constructed using historical data on AFDC participation and cohort mobility. The figure plots the estimated coefficients on interactions between $AFDC^{*}_{rs}$ and event-time dummies with time -19 is omitted. The model includes birth-state, region-by-birth-year, and Medicaid-year-by-birth-year fixed effects; birth year per-capita income and general fertility rate.

**Figure 3. Event-Study Estimates of Medicaid's Effect on the Probability of SSDI Application in the Last Year using SIPP Data**




Notes: The figure plots the estimated coefficients on interactions between event-cohort dummies and initial AFDC rates. Event cohorts are grouped as follows: more than 23 years before Medicaid, [-23,-21], [-20,-18] (omitted), [-17,-14], [-13,-11], [-10,-8], [-7,-5], [-4,-2], [-1,1], and [2,5], more than 5 years after Medicaid. The model includes birth-state, region-by-birth-year, and Medicaid-year-by-birth-year fixed effects; birth year per-capita income and general fertility rate. The dashed lines are 95-percent pointwise confidence intervals based on standard errors clustered by state of birth. Coefficients are multiplied by 100.

**Table 1. First-Stage Relationship between Predicted Eligibility and Migration-Adjusted Cumulative Medicaid Eligibility**

| | Cumulative Eligibility, Ages 0 - 11 | Cumulative Eligibility, Ages 12 -18 |
|---|---|---|
| Predicted Eligibility at: | | |
| Ages 0-11 | 0.68 | 0.00 |
| | [0.22] | [0.05] |
| Ages 12-18 | -0.04 | 0.58 |
| | [0.13] | [0.16] |
| Mean Eligibility\|Any | 0.41 | 0.35 |
| Angrist/Pischke F-statistic | 27.8 | 11.9 |

Notes: The table presents first-stage estimates for both age ranges of cumulative eligibility, $m_{sc}(0,11)$ and $m_{sc}(12,18)$. Outcomes are constructed using historical data on AFDC participation and cohort mobility. The specification is described in the text.

**Table 2. Instrumental Variables Estimates of the Effect of Cumulative Medicaid Coverage on Adult Disability Receipt and Applications using SIPP Data**

| | (1)<br>Receives SSDI | (2)<br>Receives SSI | (3)<br>Applied for SSDI in the last year | (4)<br>Ever Applied for SSI |
|---|---|---|---|---|
| Early Medicaid Eligibility (0-11) | -2.85 | 0.12 | -2.84 | 0.42 |
| | [1.56] | [1.06] | [1.34] | [0.97] |
| Mean Dependent Variable | 11.7 | 1.2 | 8.9 | 3.1 |

Notes: The table presents IV estimates of the effect of early Medicaid eligibility on disability benefit receipt and application behavior. Outcomes are cohort-level means constructed from the SIPP data. The specification is described in the text.

**Table 3. Instrumental Variables Estimates of the Effect of Cumulative Medicaid Coverage on Specific Physical Limitations using SIPP Data**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Respondent has difficulty with:* | Reaching, Lifting, or Carrying ("Ambulatory Difficulty") | Carrying 25 Pounds | Carrying 10 Pounds | Standing on Feet for 1 Hour | Reaching Over Head | Walking Up a Flight of 10 Stairs |
| Early Medicaid Eligibility (0-11) | -3.97 | 0.66 | -4.13 | -3.80 | -3.23 | -4.90 |
| | [1.97] | [1.75] | [1.31] | [1.60] | [1.22] | [1.84] |
| Mean Dependent Variable | 8.5 | 5.1 | 4.5 | 7.1 | 3.7 | 6.1 |