The Long-Run Effects of Childhood Insurance: Medicaid Implementation, Adult Health, and Labor Market Outcomes

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Publicly Insured and Uninsured Children, 1950-2012

Uninsured: NHIS SHSUE
Publicly Insured: NHIS DHEW CMS

Sources: DHEW (various years); CMS (2012); NORC (1984); HHS, CHC, NCHS (2010); MPRC/SHADAC (2012)
Publicly Insured and Uninsured Children, 1950-2012

Medicaid Implementation

Outcome Data

Year

Share of Children Ages 0 to 19

Sources: DHEW (various years); CMS (2012); NORC (1984); HHS, CHC, NCHS (2010); MPRC/SHADAC (2012)
Medicaid Implementation
Share of Children with Annual MD Visit by Income,

Medicaid’s Passage, 1965 SSA

1. Open-ended federal financing
Medicaid’s Passage, 1965 SSA

1. Open-ended federal financing

2. “Essential Health Benefits”

Inpatient, Outpatient, Physician, Lab/X-ray, Nursing Home

Optional: Drugs (42), clinic services, dental, vision/hearing

Post-1967: outreach, screening and treatment (EPSDT)
Medicaid’s Passage, 1965 SSA

1. Open-ended federal financing

2. “Essential Health Benefits”

3. Coverage Mandate: welfare recipients
   89% of Medicaid kids were on AFDC (DHEW)
Share of Children with Annual MD Visit by Income,

Why should Medicaid have long-run effects?

1. “Black box” correlations
Why should Medicaid have long-run effects?

1. “Black box” correlations

Smith (1999)

**Figure 1.**—Self-reported health status excellent or very good by health status before age 16
Why should Medicaid have long-run effects?

1. “Black box” correlations

2. Specific conditions

   - Pneumonia (sulfa, 1937) (Bhalotra and Venkataramani 2015)
   - Hookworm (eradication, 20s) (Bleakley 2007)
   - Malaria (Barreca 2010)
   - Meningitis (Roed et al. 2013)
   - Goiter/iodine deficiency (salt) (Adhvaryu et al 2015)
   - Burden of infection (Crimmins and Finch 2005)
   - Low birth weight (lots)
   - Neonatal respiratory distress (Bharadwaj, Loken and Neilson 2015)
Why should Medicaid have long-run effects?

1. “Black box” correlations
2. Specific conditions
3. Policy effects
   - Food stamps (Almond, Hoynes, Schanzenbach 2014)
   - Hospital desegregation (Chay, Guryan, Mazumder 2009, 2014)
Why should Medicaid have long-run effects?

1. “Black box” correlations
2. Specific conditions
3. Policy effects
4. Unhealthy target group in 1960s

The most significant finding of the Task Force about the Medical Rejectee is that 75 percent of all persons rejected for failure to meet the medical and physical standards would probably benefit from treatment.
Why should Medicaid have long-run effects?

1. “Black box” correlations
2. Specific conditions
3. Policy effects
4. Unhealthy target group in 1960s
5. Huge policy change
Publicly Insured and Uninsured Children, 1950-2012

Sources: DHEW (various years); CMS (2012); NORC (1984); HHS, CHC, NCHS (2010); MPRC/SHADAC (2012)
Why should Medicaid have long-run effects?

1. “Black box” correlations
2. Specific conditions
3. Policy effects
4. Unhealthy target group in 1960s
5. Huge policy change
6. Short-run health effects (Goodman-Bacon 2016)
Measuring Childhood Eligibility
1967 AFDC STUDY — CASE SCHEDULE

TO THE CASEWORKER: The following case from your AFDC caseload is in the random sample of cases to be included in the 1967 AFDC Study. Please complete all of the items (except those in italics) by filling in the blanks or circling the code for the correct information. Please take your time, and read the questions carefully. Answer the questions on the basis of information in the case record or in other agency records, or on the basis of your personal knowledge of the case. If you are unable to determine the correct information requested, do not base the answer on your guess, but give the answer as "unknown," unless instructions call for your estimate or opinion. Please recheck your answers and be sure all items are completed before you return the schedule. Answer all questions according to directions in the "Instructions to Caseworker." If you still have questions, ask your supervisor to request clarification from the State office.

Name of payee __________________________________________ Case number _______________________

Home address ____________________________________________

poprst
Annual Categorical Medicaid Eligibility

Wide cross-state variation

\[ Elig_{st} = AFDC_{st} \times POST_{st} \]

Sharp change in eligibility across calendar years
Annual Categorical Medicaid Eligibility

Year Before Medicaid

Years Since Medicaid Implementation

AFDC-Based Categorical Medicaid Eligibility
Annual Categorical Medicaid Eligibility

Year Before Medicaid

Born 10 years before Medicaid
Location of Whites Born in New York in 1960

Share of Whites in the 1960 New York Birth Cohort

Source: IPUMS/Ruggles et al.
Location of Whites Born in New York in 1960

Source: IPUMS/Ruggles et al.
1970 Location of Whites Born in New York in 1960

(Darker = higher migration)

Source: IPUMS/Ruggles et al.
1970 Location of Whites Born in Michigan in 1960

(Darker = higher migration)

Source: IPUMS/Ruggles et al.
1970 Location of Whites Born in California in 1960

(Darker = higher migration)

Source: IPUMS/Ruggles et al.
Cohort-Level Cumulative Eligibility

Cumulative Eligibility by Event Cohort

Annual ($y$) state-of-residence ($\ell$) distribution: race $r$, born in year $c$, in state $s$

Categorical eligibility for race $r$, in state $\ell$, in year $y$

$$m_{rsc} = \sum_{\substack{y = c+18 \\ y = c}} \sigma_{rsc}^y(\ell) \cdot 1\{y \geq t^*_\ell\} \cdot AFDC_{r\ell y}$$
Cumulative Eligibility by Event Cohort

\[ m_{rsc} = \sum_{y=c}^{y=c+18} \sum_{\ell} \sigma_{rsc}^y(\ell) \cdot 1\{y \geq t^*_\ell\} \cdot AFDC_{r\ell y} \]

What does “1 year” mean?

Birth Year Relative to Medicaid
Long-Run Research Design
Can we use actual eligibility, $m_{rsc}$?

Probably not.

a. AFDC policy: OBRA ’81
b. Labor demand: $\text{cov}(AFDC, \text{unemp}) > 0$
c. Demographics: SFH $\uparrow$ AFDC, $\downarrow$ adult outcomes
d. Migration: moves may respond to Medicaid
Use Initial AFDC Rates

Share of children on AFDC in your *birth* state’s Medicaid implementation year ($t_s^*$) by race ($r$):

$$AFDC^{*}_{rs}$$
Annual Categorical Medicaid Eligibility

AFDC-Based Categorical Medicaid Eligibility

Years Since Medicaid Implementation

Year Before Medicaid

AFDC<sub>r_s</sub>
Use Initial AFDC Rates

Share of children on AFDC in your *birth* state’s Medicaid implementation year \((t^*_s)\) by race \((r)\):

\[
AFDC^*_{rs}
\]

→ **Diff-in-diff:**

compare cohorts born at different times relative to Medicaid \((c - t^*_s)\) and in states with different \(AFDC^*_{rs}\)
Where does $AFDC^*_r$ come from?

Historical variation in institutions/de facto welfare systems:

1. *Industrial structure* (Alston and Ferrie)
2. *Discrimination* (Bell)
3. *Traditions of aid* (Moehling)
4. *Constitutional structure* (Fox)

Historically stable, largely arbitrary w.r.t. children’s circumstances.
Why is this a good idea?

1. $AFDC^*_r$ pre-Medicaid health trends
**AFDC*rs** and Infant Health

**A. White Infant Health Index**

- Linear Trend (Year*AFDC*rs):
  - 0.0022 (s.e. = 0.0041)
- Pooled Levels (AFDC*rs):
  - -0.038 (s.e. = 0.042)

**B. Nonwhite Infant Health Index**

- Linear Trend (Year*AFDC*rs):
  - -0.0003 (s.e. = 0.0004)
- Pooled Levels (AFDC*rs):
  - -0.004 (s.e. = 0.005)

Cohorts exposed to Medicaid weren’t systematically getting healthier.

Notes: The infant health index is an equally weighted mean of the following variables standardized by their 1950 mean and standard deviation: low and very low birth weight rates, neonatal and postneonatal infant mortality rates, the sex ratio at birth, and the share of births in a hospital.
Why is this a good idea?

1. \( AFDC^*_{rs} \rightarrow \) pre-Medicaid health trends
2. \( AFDC^*_{rs} \rightarrow \) pre-Medicaid SES trends
**AFDC*_{rs} and Child SES**

**C. White SES Index**

- Linear Trend (Year*AFDC*_{rs}): 0.0024 (s.e. = 0.0039)
- Pooled Levels (AFDC*_{rs}): -0.11 (s.e. = 0.11)

**D. Nonwhite SES Index**

- Linear Trend (Year*AFDC*_{rs}): 0.0021 (s.e. = 0.0010)
- Pooled Levels (AFDC*_{rs}): 0.05 (s.e. = 0.03)

Cohorts exposed to Medicaid weren’t systematically living in better conditions.

The SES index is constructed similarly (for children under age 10) and includes the 25th, 50th, and 75th percentiles of children’s household incomes; the child poverty rate; the share of children in households whose head has a high school degree or more, is in the labor force, and is employed; the share of children who live with no parents or both parents; household size; and the share of children ages 4-6 enrolled in school.
Why is this a good idea?

1. $AFDC_{rs}^*$ ↞ pre-Medicaid health trends
2. $AFDC_{rs}^*$ ↞ pre-Medicaid SES trends
3. $AFDC_{rs}^*$ ↞ pre-Medicaid public health efforts
White AFDC and Polio Incidence/Vaccination

A. Total Vaccines Shipped, 8/30/1957

B. Infantile Paralysis Case Rate, 1945

C. Log Change in Infantile Paralysis Case Rate, 40-50

D. Log Change in Polio Rate, 1955-1956

Notes: Panel A uses data on total Salk vaccines shipped from FDA approval (1955) through 8/30/1957. Panel B uses data on reported cases of infantile paralysis (a subset of polio cases) in 1945. Panel C uses data on the change in the infantile paralysis case rate from 1940-1950. Panel C uses data on the change in the polio incidence rate between 1955 (mostly pre-vaccine) and 1956 (post-vaccine). Source: March of Dimes Archive.
Nonwhite AFDC and Polio Incidence/Vaccination

A. Total Vaccines Shipped, 8/30/1957

Slope = -0.002 (s.e. = 0.006)

B. Infantile Paralysis Case Rate, 1945

Slope = 0.062 (s.e. = 0.095)

C. Log Change in Infantile Paralysis Case Rate, 1940-50

Slope = -0.011 (s.e. = 0.025)

D. Log Change in Polio Rate, 1955-1956

Slope = -0.013 (s.e. = 0.013)

Notes: Panel A uses data on total Salk vaccines shipped from FDA approval (1955) through 8/30/1957. Panel B uses data on reported cases of infantile paralysis (a subset of polio cases) in 1945. Panel C uses data on the change in the infantile paralysis case rate from 1940-1950. Panel C uses data on the change in the polio incidence rate between 1955 (mostly pre-vaccine) and 1956 (post-vaccine). Source: March of Dimes Archive.
Why is this a good idea?

1. $AFDC_{rs}^*$ \( \Rightarrow \) pre-Medicaid health trends
2. $AFDC_{rs}^*$ \( \Rightarrow \) pre-Medicaid SES trends
3. $AFDC_{rs}^*$ \( \Rightarrow \) pre-Medicaid public health efforts
4. $AFDC_{rs}^*$ \( \Rightarrow \) actual Medicaid use
Relevance: $AFDC^*_r$ and Medicaid Use

Sources: DHEW Medical Vendor Payment and Medicaid Tables, 1963-1976.
Why is this a good idea?

1. $AFDC_{rs}^* \Rightarrow$ pre-Medicaid health trends
2. $AFDC_{rs}^* \Rightarrow$ pre-Medicaid SES trends
3. $AFDC_{rs}^* \Rightarrow$ pre-Medicaid public health efforts
4. $AFDC_{rs}^* \Rightarrow$ actual Medicaid use
5. $AFDC_{rs}^* \Rightarrow$ child health (Goodman-Bacon 2016)
Why is this a good idea?

1. $AFDC_{rs}^*$ $\Rightarrow$ pre-Medicaid health trends
2. $AFDC_{rs}^*$ $\Rightarrow$ pre-Medicaid SES trends
3. $AFDC_{rs}^*$ $\Rightarrow$ pre-Medicaid public health efforts
4. $AFDC_{rs}^*$ $\Rightarrow$ actual Medicaid use
5. $AFDC_{rs}^*$ $\Rightarrow$ child health (Goodman-Bacon 2016)

No systematic differences by $AFDC_{rs}^*$ except in Medicaid exposure!
Event-Study Specification

\[ y_{rs,c} = X'_{rs} \beta + AFDC_{rs}^{*}\left[ \sum_{j=-23}^{-20} \pi_j 1\{c - t_s^* = j\} + \sum_{j=-18}^{5} \phi_j 1\{c - t_s^* = j\} \right] + \epsilon_{rs,c} \]

Pre-Trends (Falsification test)
Sign/magnitude/significance
Estimate trend

Intention to Treat Effects (relative to \( j = -19 \))
\( \phi_j \) represents different:

a. Dose \( = AFDC_{rs}^{*} \cdot (19 - \max\{0, t_s^* - c\}) \)
b. Age at exposure \( = \max\{0, t_s^* - c\} \)
Event-Study Specification

\[ y_{rsc} = X'_{rsc}\beta + \text{AFDC}_{rs}^* \left[ \sum_{j=-20}^{23} \pi_j 1\{c - t_s^* = j\} + \sum_{j=-18}^{5} \phi_j 1\{c - t_s^* = j\} \right] + \varepsilon_{rsc} \]

**Pre-Trends (Falsification test)**
- Sign/magnitude/significance
- Estimate trend

**Intention to Treat Effects (relative to \( j = -19 \))**
\( \phi_j \) represents different:
  a. Dose \( = \text{AFDC}_{rs}^* \cdot (19 - \max\{0, t_s^* - c\}) \)
  b. Age at exposure \( = \max\{0, t_s^* - c\} \)

\( t_s^* - c \in (1,18) \) provide information about the effects
Event-Study Specification

\[ y_{rsc} = X'_{rsc} \beta + AFD C_{rs}^* \left[ \sum_{j=-23}^{-20} \pi_j 1\{c - t_s^* = j\} + \sum_{j=-18}^{5} \phi_j 1\{c - t_s^* = j\} \right] + \epsilon_{rsc} \]

**Pre-Trends (Falsification test)**
- Sign/magnitude/significance
- Estimate trend

**Intention to Treat Effects** (relative to \( j = -19 \))
- \( \phi_j \) represents different:
  - a. Dose \( = AFD C_{rs}^* \cdot (19 - \max\{0, t_s^* - c\}) \)
  - b. Age at exposure \( = \max\{0, t_s^* - c\} \)

\( t_s^* - c \in (1,18) \) provide information about the effects

\( t_s^* \leq c \) is another test: \( \phi_j \) should be similar b/c (a) dose and (b) age-at-exposure are same
Adult Outcomes by Cohort and Birth State

   - # deaths by cohort/state of birth
   - # pop in 1980 by cohort/state of birth

   b. Labor Supply
   c. Program Participation (cash and public insurance)
   d. Income by Source

\[ y_{rsc} \text{ are birth state/birth cohort averages} \]
\[ \Rightarrow \sim 41 \times 49 = 2,009 \text{ observations} \]
First Stage:

*Do initial AFDC rates predict cumulative eligibility?*
Event-Study Estimates for Cumulative Eligibility

Notes: the model includes state, region-by-cohort, and Medicaid-year-by-cohort fixed effects and the birth-year infant mortality rate, general fertility rate, and per-capita income and hospital beds. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Standard errors are clustered by state and the regression is weighted by the sum of the Census survey weights within each state/cohort cell. These estimates use 2000 Census data only.
Results 1:

Do initial AFDC rates predict adult health?
Notes: Dependent variable the log 20-year mortality rate (1980-1999) by cohort. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. The model includes state, region-by-cohort, and Medicaid-year-by-cohort fixed effects and the birth-year general fertility rate, and per-capita income and hospital beds. Source: Multiple Cause of Death files and 1980 Census.

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White
Pre-Trend (-30,-10): 0.02 (s.e. = 0.05)
Phase-In Trend Break [-10,0): -0.20 (s.e. = 0.14)

Notes: Dependent variable the log 20-year mortality rate (1980-1999) by cohort. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. The model includes state, region-by-cohort, and Medicaid-year-by-cohort fixed effects and the birth-year general fertility rate, and per-capita income and hospital beds. Source: Multiple Cause of Death files and 1980 Census.

Nonwhite
Pre-Trend (-30,-9): 0.01 (s.e. = 0.03)
Phase-In Trend Break [-9,0): -0.15 (s.e. = 0.06)
Post-Medicaid Trend Break: -0.01 (s.e. = 0.09)

White
Pre-Trend (-30,-10): 0.02 (s.e. = 0.05)
Phase-In Trend Break [-10,0): -0.20 (s.e. = 0.14)
Post-Medicaid Trend Break: 0.09 (s.e. = 0.11)

Notes: Dependent variable the log 20-year mortality rate (1980-1999) by cohort. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. The model includes state, region-by-cohort, and Medicaid-year-by-cohort fixed effects and the birth-year general fertility rate, and per-capita income and hospital beds. Source: Multiple Cause of Death files and 1980 Census.

Notes: Dependent variable the log 20-year mortality rate from non-AIDS-related causes (1980-1999). Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. The model includes state, region-by-cohort, and Medicaid-year-by-cohort fixed effects and the birth-year general fertility rate, and per-capita income and hospital beds. Source: Multiple Cause of Death files and 1980 Census.

<table>
<thead>
<tr>
<th>Childhood Medicaid Eligibility:</th>
<th>White</th>
<th>Nonwhite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0-10</td>
<td>-15.5</td>
<td>-19.6</td>
</tr>
<tr>
<td></td>
<td>[5.4]</td>
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<tr>
<td>Ages 11-18</td>
<td>-11.0</td>
<td>4.8</td>
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<td>[7.2]</td>
<td>[6.9]</td>
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<tr>
<td>H₀: 0-10 = 11-18 (p-val)</td>
<td>0.70</td>
<td>0.06</td>
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<td>Mean Dependent Variable (deaths per 100,000)</td>
<td>3,090</td>
<td>5,600</td>
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</table>

1. Proportional effect on treated kids:
   1. White: -16% (2 years on AFDC)
   2. Nonwhite: -30% (3.33 years on AFDC)

2. Whites: no effect on homicide or accidents

3. Spread across causes
   a. Suicide (Case and Deaton 2015)
Effect of 1 p.p. difference in initial eligibility

Notes: State/cohort means from 2000 Census and 2001-2007 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Coefficients are multiplied by 100. "Does this person have any of the following long-lasting conditions: ...A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?"
Event-Study Estimates: Ambulatory Difficulty

Notes: State/cohort means from 2000 Census and 2001-2007 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Coefficients are multiplied by 100. "Does this person have any of the following long-lasting conditions: ...A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?"
Event-Study Estimates: Ambulatory Difficulty

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Notes: State/cohort means from 2000 Census and 2001-2007 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Coefficients are multiplied by 100. "Does this person have any of the following long-lasting conditions: ...A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?"
Result 1: Childhood Medicaid Eligibility Improves Health

- Saved ~346,000 lives
  - Worth at least $290 billion
    - $840k VSL, l.b. in Ashenfelter and Greenstone (2004)

- Reduced physical limitations among the treated by 1/3
  - Hard to value, strongly correlated with happiness

- Spread across causes/conditions
Results 2:

*Do initial AFDC rates predict adult labor market outcomes?*
Any Employment
Pre-Trend (-23,-10): -0.002 (s.e. = 0.011)
Phase-In Trend Break [-10,0): 0.048 (s.e. = 0.015)
Post-Medicaid Trend Break: -0.035 (s.e. = 0.016)

Any Disability Benefits
Pre-Trend (-23,-10): -0.012 (s.e. = 0.012)
Phase-In Trend Break [-10,0): -0.022 (s.e. = 0.015)
Post-Medicaid Trend Break: 0.036 (s.e. = 0.007)

Notes: State/cohort means from 2000 Census and 2001-2014 ACS data. Each point is the interaction between the continuous value of initial Medicaid eligibility and an event-time indicator. Employment refers to any employment in the previous year. Disability benefits include Social Security Disability and Supplemental Security Income.
## IV Estimates for White Program Participation

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<td></td>
<td>Any Public Assistance</td>
<td>Disability Benefits (SSDI/SSI)</td>
<td>TANF or General Assistance</td>
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Notes: State/cohort means from 2000 Census and 2001-2014 ACS data. Predicted cumulative Medicaid eligibility (ages 0-10 or 11-18) are used as instruments for actual, cohort-level, migration-adjusted, cumulative Medicaid eligibility. Standard errors clustered by birth state. N=24,411

### Disabled, poor, single mothers prefer disability:
- Average TANF benefit (2010): $392
- Federal SSI benefit (2010): $674
## IV Estimates for White Program Participation

<table>
<thead>
<tr>
<th></th>
<th>(1) Any Public Assistance</th>
<th>(2) Disability Benefits (SSDI/SSI)</th>
<th>(3) TANF or General Assistance</th>
<th>(4) Public Insurance</th>
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<td>Ages 0-10</td>
<td>-5.09</td>
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<td>Ages 11-18</td>
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# IV Estimates for White Employment Outcomes

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<td>74.2</td>
<td>80.9</td>
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Event-Study Estimates Across the Earnings Distribution, Whites

Notes: State/cohort means from 2000 Census and 2001-2014 ACS data. Predicted cumulative Medicaid eligibility (ages 0-10 or 11-18) are used as instruments for actual, cohort-level, migration-adjusted, cumulative Medicaid eligibility. Standard errors clustered by birth state. N=24,411
Notes: State/cohort means from 2000 Census and 2001-2014 ACS data. Each point is an instrumental variables estimate using predicted cumulative Medicaid eligibility (up to age 10) as an instrument for actual, cohort-level, migration-adjusted, cumulative Medicaid eligibility (up to age 10). The outcome variable at each point is the probability that respondents report income at or below a given dollar amount. N=24,411.
Result 2: Medicaid Increases Adult Employment, Reduces Program Participation

• Health the most likely channel
  – Not education (contrast w/ Cohodes et al./BKL)

• DI effects are big
  – 12% of current (white) participation
  – Role of health in SSI/SSDI:
    • Participation decompositions (cf. Autor and Duggan 2006)
    • Labor supply q-experiments (cf. Maestas, Mullen and Strand 2013)
Discussion: Public Return to Medicaid Spending

• $21.2b annual savings
  – $6.1b increase in federal taxes per year (TaxSim)
  – $2.9b savings in public insurance spending
    • Median disabled Medicare recipient: $3,326
  – $12.2b savings in cash assistance

• $132b total cost (cohorts born before 1976)
Discussion: Public Return to Medicaid Spending

- $21.2b annual savings
  - $6.1b increase in federal taxes per year (TaxSim)
  - $2.9b savings in public insurance spending
    - Median disabled Medicare recipient: $3,326
  - $12.2b savings in cash assistance
- $132b total cost (cohorts born before 1976)
- 5.6-8.5% discounted annual return (at 3%)
  - Earned back 104% from 2000-2014
- 1.6-2.6% annual return (at actual treasury rates)
  - Earn back 28% from 2000-2014
Discussion: Potential Medicaid Reforms Today

Subtitle C—Per Capita Allotment for Medical Assistance

Sec. 121. Per Capita Allotment for Medical Assistance.

Title XIX of the Social Security Act is amended—


Data from 1963 through 1976 come from Department of Health, Education and Welfare reports and exclude recipients and spending in the Kerr–Mills program from 1963 through 1965 (see the Supplementary Appendix for details). Data from 1976 through 1980 come from the Medicare and Medicaid Statistical Supplement. Spending is inflated to 2014 dollars using the medical care Consumer Price Index available from the St. Louis Federal Reserve Bank.

Source: Goodman-Bacon and Nikpay, NEJM 2/1/2017
Thank You!
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

AFDC-Based Categorical Medicaid Eligibility

No eligibility in birth year.

NJ Medicaid (1970)
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

AFDC-Based Categorical Medicaid Eligibility

Year


NJ Medicaid (1970)
Cumulative Eligibility for One State/Cohort: 1965 New Jersey
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

AFDC-Based Categorical Medicaid Eligibility

Year

NJ Medicaid (1970)
Still no eligibility after 5 years.

NJ Medicaid (1970)
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

10% AFDC-based eligibility in the first year of Medicaid (age 5)

0.1 years of cumulative eligibility by the first year of Medicaid (age 5)
11% AFDC-based eligibility in the second year of Medicaid (age 6)

0.21 years of cumulative eligibility by the second year of Medicaid (age 6)

11% AFDC-based eligibility in the second year of Medicaid (age 6)
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

AFDC-Based Categorical Medicaid Eligibility

Year


NJ Medicaid (1970)
Cumulative Eligibility for One State/Cohort: 1965 New Jersey

New Jersey Medicaid (1970)

1.76 years of cumulative eligibility by age 18
Cumulative Eligibility for Two States, One Cohort: 1965 New Jersey and Indiana

New Jersey: 1.76 years of cumulative eligibility

Indiana: 0.83 years of cumulative eligibility

NJ and IN Medicaid (1970)
Cumulative Eligibility for All States, One (Event) Cohort:
Born 5 Years before Medicaid
Cumulative Eligibility for All States, One (Event) Cohort: Born 5 Years before Medicaid
Threats to Validity:

Do initial AFDC rates predict anything else?
Effect of 1 p.p. difference in initial eligibility Birth Year Relative to Medicaid

Crack Index (migration-adjusted, ages 15-30)

One S.D.
Relationship between AFDC* and u/e rate

Born 0-10 years before Medicaid are about 20 years old here: high-AFDC states actually have *higher* unemployment
Initial (Nonwhite) AFDC and Entry Unemployment

Relationship between AFDC and u/e rate
IV Estimate of the Effect of Medicaid on Adult Work Disability by Survey Year
IV Estimate of the Effect of Medicaid on Public Assistance Receipt by Survey Year
IV Estimate of the Effect of Medicaid on Adult Employment by Survey Year
## Median Cell Sizes

<table>
<thead>
<tr>
<th></th>
<th>2000 Census</th>
<th>2001-2013 ACS</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>288</td>
<td>2185</td>
</tr>
<tr>
<td>Nonwhite</td>
<td>38</td>
<td>309</td>
</tr>
</tbody>
</table>
This new State law for the care of patients under 65 is not “Medicaid”, as it is called. It is socialized medicine.

It will destroy the traditional doctor-patient relationship. It will create two classes of medical care—a superior class and an inferior class.

It is for these reasons that I find it impossible to cooperate with the implementation of this State law for patients under 65—as it is presently proposed—which operates to deprive my fellow physicians and me of our constitutional rights to practice medicine in a free society.

I am a Doctor...

This statement has been endorsed by the membership of the Suffolk County Medical Society
What did Medicaid provide?

### Primary Care Utilization Among Low-Income Children by Medicaid Status

<table>
<thead>
<tr>
<th>Income &lt; ~3k</th>
<th>Categorically Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1963-1965</strong></td>
<td><strong>1968-1969</strong></td>
</tr>
<tr>
<td>~48%</td>
<td>52.50%</td>
</tr>
<tr>
<td></td>
<td>Low-Income in Non-Medicaid State 36%</td>
</tr>
</tbody>
</table>

Source: NHES Cycle II, SHSUE, NHIS

Loewenstein (1971)
### Primary Care Utilization Among Low-Income Children by Medicaid Status

<table>
<thead>
<tr>
<th>Income &lt; ~3k</th>
<th>Categorically Eligible</th>
<th>Medicaid Recipients</th>
<th>Non-Medicaid Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>~48%</td>
<td>52.50%</td>
<td>80%</td>
<td>70% (+36% OPD)</td>
</tr>
</tbody>
</table>

| Source | NHES Cycle II, SHSUE, NHIS | Loewenstein (1971) | OEO 11 City Survey | DHEW Tables | Survey of Access to Medical Care | NHIS | NHIS |

Source: NHES Cycle II, SHSUE, NHIS

Loewenstein (1971)

OEO 11 City Survey

DHEW Tables

Survey of Access to Medical Care

NHIS

NHIS
Counterfactual Disability Among Treated Whites

Adjusting observed disability rate for treated sub-sample:

Census Mean (born 1955-1975): 0.057
Disability among adults with child welfare (PSID): 0.41
Disability among adults with child welfare (PSID): 0.15
Adjusted Census Mean: \( \frac{0.41}{0.15} \times 0.057 = 0.156 \)

Adding back in the treatment effect:

Years 0-10 with *any* welfare | *any* welfare (Smith and Yeung) 2.9
Share of year on AFDC | *any* AFDC (KY: Berger and Black) 0.68
Average *full years* of childhood elig. 1.97
IV effect per year -0.039
Effect among treated to add back in 0.076
Counterfactual Mean 0.23
F-Statistics on Trend Break Variables for Different Break Points, Ambulatory Difficulty

Break Point for Phase-in Trend
### IV Estimates for Educational Attainment

<table>
<thead>
<tr>
<th>Childhood Medicaid Eligibility</th>
<th>(1) High School Grad</th>
<th>(2) Any College</th>
<th>(3) Bachelor's Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0-10</td>
<td>1.15</td>
<td>1.59</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>[1.11]</td>
<td>[3.08]</td>
<td>[1.97]</td>
</tr>
<tr>
<td>Ages 11-18</td>
<td>0.42</td>
<td>-1.32</td>
<td>-1.99</td>
</tr>
<tr>
<td></td>
<td>[1.81]</td>
<td>[3.26]</td>
<td>[1.59]</td>
</tr>
<tr>
<td>( H_0: 0-10 = 11-18 ) (p-val)</td>
<td>0.76</td>
<td>0.60</td>
<td>0.37</td>
</tr>
<tr>
<td>Mean Dependent Variable</td>
<td>91.8</td>
<td>62.7</td>
<td>31.5</td>
</tr>
</tbody>
</table>

# First Stage by Age Group and Race

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>White</th>
<th>Nonwhite</th>
</tr>
</thead>
<tbody>
<tr>
<td>$z_{cs}$: ages 0-10</td>
<td>0.77</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>[0.23]</td>
<td>[0.20]</td>
</tr>
<tr>
<td>$z_{cs}$: ages 11-18</td>
<td>-0.04</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>[0.10]</td>
<td>[0.08]</td>
</tr>
<tr>
<td>Angrist/Pischke $F$-statistic</td>
<td>37.3</td>
<td>18.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>$m_{cs}$: ages 11-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>$z_{cs}$: ages 0-10</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>[-0.07]</td>
</tr>
<tr>
<td>$z_{cs}$: ages 11-18</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>[0.13]</td>
</tr>
<tr>
<td>$F$-statistic</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>14.5</td>
</tr>
</tbody>
</table>
### IV Estimates for Other Disabilities

<table>
<thead>
<tr>
<th></th>
<th>(1) Ambulatory Difficulty</th>
<th>(2) Hearing/Visio n Difficulty</th>
<th>(3) Mobility Difficulty</th>
<th>(4) Self-Care Difficulty</th>
<th>(5) Cognitive Difficulty</th>
<th>(6) Work Limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Childhood Medicaid Eligibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ages 0-10</strong></td>
<td>-3.87</td>
<td>-1.18</td>
<td>-1.36</td>
<td>-1.26</td>
<td>-1.72</td>
<td>-3.30</td>
</tr>
<tr>
<td></td>
<td>[1.17]</td>
<td>[0.29]</td>
<td>[0.36]</td>
<td>[0.29]</td>
<td>[0.4]</td>
<td>[0.81]</td>
</tr>
<tr>
<td><strong>Ages 11-18</strong></td>
<td>-1.06</td>
<td>0.31</td>
<td>-0.67</td>
<td>0.38</td>
<td>0.34</td>
<td>-2.54</td>
</tr>
<tr>
<td></td>
<td>[1.45]</td>
<td>[0.71]</td>
<td>[0.57]</td>
<td>[0.5]</td>
<td>[0.64]</td>
<td>[1.23]</td>
</tr>
<tr>
<td><strong>H₀: 0-10 = 11-18 (p-val)</strong></td>
<td>0.20</td>
<td>0.06</td>
<td>0.33</td>
<td>0.02</td>
<td>0.03</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>Mean Dependent Variable</strong></td>
<td>8.61</td>
<td>3.15</td>
<td>3.75</td>
<td>2.27</td>
<td>4.41</td>
<td>8.12</td>
</tr>
</tbody>
</table>

**Question Text**

Does this person have any of the following long-lasting conditions:

- Because of a physical, mental, or emotional condition lasting ≥ 6 months does this person have any difficulty:

- ...that substantially limits ≥ 1 basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?
- Blindness, deafness, or a severe vision or hearing impairment?
- Going outside the home alone to shop or visit a doctor's office?
- Dressing, bathing, or getting around inside the home?
- Learning, remembering, or concentrating?
- Working at a job or business?

**Notes:** State/cohort means from 2000 Census and 2001-2007 ACS data. IV estimates use predicted cumulative eligibility from ages 0-10 and 11-18 ($z_{rsc}$) as instruments for actual, migration-adjusted cumulative Medicaid eligibility ($m_{rsc}$) at the same ages. There are 14,331 observations, except column 6 (N=12,417), which omits the year 2000 because the work-limiting disability responses differ strongly from subsequent surveys.
Survival-Adjusted Bounds on Disability Effects

- Survival-Adjusted White Effect
- Survival-Adjusted Nonwhite Effect

Effect of Age 0-10 Eligibility Among Always-Survivors

Disability Rate Among Induced Survivors

Percent

Survival-Adjusted Nonwhite Effect

Unadjusted White Effect

-0.06

Effect of Age 0-10 Eligibility Among Always-Survivors

0.02
Event-Study Estimates for HS and BA

**HS Grad**
- Pre-Trend (-23, -10): 0.006 (s.e. = 0.006)
- Phase-In Trend Break [-10, 0): -0.004 (s.e. = 0.009)
- Post-Medicaid Trend Break: 0.017 (s.e. = 0.011)

**BA**
- Pre-Trend (-23, -10): -0.005 (s.e. = 0.009)
- Phase-In Trend Break [-10, 0): 0.012 (s.e. = 0.011)
- Post-Medicaid Trend Break: -0.040 (s.e. = 0.024)
Ratio of reduced-form to first-stage event-study coefficients

Effect of 1 p.p. difference in initial eligibility

Birth Year Relative to Medicaid

Ambulatory Difficulty
Employment
Disability PA
## IV Estimates for Disability, Infant vs. Child Exposure

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ambulatory Difficulty</td>
<td>Hearing/Vision Difficulty</td>
<td>Mobility Difficulty</td>
<td>Self-Care Difficulty</td>
<td>Cognitive Difficulty</td>
<td>Work Limitation</td>
</tr>
<tr>
<td><strong>A. White Adults, 2000-2007</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ages 0-1</td>
<td>-6.50</td>
<td>0.73</td>
<td>-3.42</td>
<td>-3.61</td>
<td>-5.32</td>
<td>-4.67</td>
</tr>
<tr>
<td></td>
<td>[3.52]</td>
<td>[1.02]</td>
<td>[1.25]</td>
<td>[1.62]</td>
<td>[1.47]</td>
<td>[1.71]</td>
</tr>
<tr>
<td>Ages 2-10</td>
<td>-3.08</td>
<td>-1.76</td>
<td>-0.74</td>
<td>-0.54</td>
<td>-0.62</td>
<td>-2.51</td>
</tr>
<tr>
<td></td>
<td>[0.84]</td>
<td>[0.38]</td>
<td>[0.49]</td>
<td>[0.44]</td>
<td>[0.44]</td>
<td>[0.72]</td>
</tr>
<tr>
<td>Ages 11-18</td>
<td>-1.38</td>
<td>0.54</td>
<td>-0.92</td>
<td>0.09</td>
<td>-0.10</td>
<td>-2.27</td>
</tr>
<tr>
<td></td>
<td>[1.28]</td>
<td>[0.65]</td>
<td>[0.64]</td>
<td>[0.43]</td>
<td>[0.56]</td>
<td>[1.12]</td>
</tr>
<tr>
<td>H₀: 0-1 = 2-10 (p-val)</td>
<td>0.33</td>
<td>0.04</td>
<td>0.08</td>
<td>0.12</td>
<td>0.01</td>
<td>0.22</td>
</tr>
</tbody>
</table>
Share of White Women on AFDC in the Year Of Medicaid Implementation

White range: 0.001 (DC) to 0.044 (WV)

Share of Nonwhite Women on AFDC in the Year Of Medicaid Implementation

Nonwhite range: 0.004 (VT) to 0.26 (SD)

Validity: Stability in White AFDC Rates

H\_0: Slopes are equal (p-value) = 0.55

1961: 0.85, s.e. = 0.06
1958: 0.81, s.e. = 0.10
1948: 0.63, s.e. = 0.20

Notes: The figure presents scatter plots and fitted values of the relationship between the paper’s primary measure of categorical eligibility—the AFDC rate in the year of Medicaid implementation (y-axis)—and three measures of AFDC rates in years prior to each state’s Medicaid year. The p-values from a test that the slopes are equal (i.e. that AFDC variation is stable over time) are 0.55 and 0.32 using robust regression (Berk 1990).
Validity: Stability in Nonwhite AFDC Rates

Notes: The figure presents scatter plots and fitted values of the relationship between the paper’s primary measure of categorical eligibility—the AFDC rate in the year of Medicaid implementation (y-axis)—and three measures of AFDC rates in years prior to each state’s Medicaid year. The $p$-values from a test that the slopes are equal (i.e. that AFDC variation is stable over time) are 0.82 and 0.34 using robust regression (Berk 1990).
Validity: Trends in White Child Poverty

H₀: Equal slopes (p-val) = 0.67

1950: \(0.38 + -0.005 \times AFDC_s\)
\[(0.04)\] \[\text{AFDC}_s\]

1960: \(0.22 + -0.005 \times AFDC_s\)
\[(0.04)\] \[\text{AFDC}_s\]

1970: \(0.10 + 0.005 \times AFDC_s\)
\[(0.02)\] \[\text{AFDC}_s\]

Source: Ruggles et al. (2015)
Validity: Trends in Nonwhite Child Poverty

1950: $0.96 + -0.007 \text{AFDC}_s$

1960: $0.87 + -0.011 \text{AFDC}_s$

1970: $0.55 + -0.006 \text{AFDC}_s$

$H_0$: Equal slopes ($p$-val) = 0.43

Source: Ruggles et al. (2015)
Validity: Trends in Public Expenditures

White AFDC Rate

\[ H_0: \text{Equal slopes (p-val)} = 0.95 \]

\[
\begin{align*}
\text{1932: } & 13.32 + 0.11 \text{ AFDC}^*_s \\
& (0.28) \quad (0.13) \\
\text{1942: } & 13.92 + 0.14 \text{ AFDC}^*_s \\
& (0.32) \quad (0.13) \\
\text{1962: } & 15.06 + 0.17 \text{ AFDC}^*_s \\
& (0.33) \quad (0.15)
\end{align*}
\]

Source: Sylla, Legler and Wallis (1993)
Validity: Trends in Public Expenditures

Nonwhite AFDC Rate

\[ 1942: \ 13.60 + 0.03 \ \text{AFDC}^*_s \]
\[ (0.36) \ (0.02) \]

\[ 1962: \ 15.21 + 0.02 \ \text{AFDC}^*_s \]
\[ (0.32) \ (0.02) \]

\[ 1932: \ 13.03 + 0.03 \ \text{AFDC}^*_s \]
\[ (0.37) \ (0.02) \]

\[ \text{H}_0: \ \text{Equal slopes (p-val)} = 0.79 \]

Source: Sylla, Legler and Wallis (1993)
Event-Study Estimates of Medicaid’s Effect on Log Age-Adjusted Child Mortality by Race (Ages 0-14)

A. Nonwhite Child Mortality

Notes: Standard errors clustered by state.
Event-Study Estimates of Medicaid’s Effect on Log Age-Adjusted Child Mortality by Race (Ages 0-14)

**B. White Child Mortality**

White DD Estimate: -1.50 (s.e. = 1.90)
IV Specification

Instrument (dose predicted by $AFDC^*_{rs}$)

$$z_{rsc} = AFDC^*_{rs} \cdot (19 - \max\{0, t^*_s - c\})$$

First stage (predicted year $\rightarrow$ actual years of eligibility):

$$m_{rsc} = X'_{rsc} \alpha + \pi z_{rsc} + \nu_{rsc}$$

Reduced form (predicted year $\rightarrow$ adult outcomes):

$$y_{rsc} = X'_{rsc} \beta + \phi z_{rsc} + \varepsilon_{rsc}$$
## Validity: Fertility and Infant Mortality

<table>
<thead>
<tr>
<th>Outcome/year:</th>
<th>Infant Mortality Rate</th>
<th></th>
<th>General Fertility Rate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Mean</td>
<td>Coef. on Initial White AFDC</td>
<td></td>
</tr>
<tr>
<td>1947</td>
<td>29.72</td>
<td>0.09</td>
<td>47.89</td>
<td>-0.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.55]</td>
<td></td>
<td>[0.13]</td>
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<tr>
<td>1957</td>
<td>22.86</td>
<td>0.15</td>
<td>43.43</td>
<td>-0.03</td>
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<td>[0.25]</td>
<td></td>
<td>[0.09]</td>
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<tr>
<td>1965</td>
<td>21.65</td>
<td>-0.05</td>
<td>40.55</td>
<td>-0.02</td>
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<tr>
<td></td>
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<td>[0.21]</td>
<td></td>
<td>[0.1]</td>
</tr>
<tr>
<td>( H_0: ) Equal slopes (( p )-val)</td>
<td>0.93</td>
<td></td>
<td>0.49</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Childhood Medicaid Eligibility:</th>
<th>Non-AIDS-Related Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
</tr>
<tr>
<td>Ages 0-10</td>
<td>-15.5</td>
</tr>
<tr>
<td></td>
<td>[5.4]</td>
</tr>
<tr>
<td>Ages 11-18</td>
<td>-11.0</td>
</tr>
<tr>
<td></td>
<td>[7.2]</td>
</tr>
</tbody>
</table>

$H_0: 0-10 = 11-18$ ($p$-val)

Mean Dependent Variable (deaths per 100,000)

3,090

5,600

$DD^{ITT} \approx \delta(1 + \sigma)$

$\frac{\gamma_{treated}}{\gamma_{untreated}} = (1 + \sigma)(1 + \delta m^*)$

ATET

<table>
<thead>
<tr>
<th>Childhood Medicaid Eligibility:</th>
<th>Non-AIDS-Related Causes</th>
<th>White</th>
<th>Nonwhite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0-10</td>
<td>-15.5</td>
<td>-19.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[5.4]</td>
<td>[9.4]</td>
<td></td>
</tr>
<tr>
<td>Ages 11-18</td>
<td>-11.0</td>
<td>4.8</td>
<td></td>
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<tr>
<td></td>
<td>[7.2]</td>
<td>[6.9]</td>
<td></td>
</tr>
<tr>
<td>$H_0$: 0-10 = 11-18 ($p$-val)</td>
<td>0.70</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Mean Dependent Variable</td>
<td>3,090</td>
<td>5,600</td>
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White:

\[
DD^{ITT} \approx \delta (1 + \sigma)
\]

\[
1.55 = (1 + \sigma)(1 + \delta m^*)
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(NLMS)

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\[ DD^{ITT} \approx \delta(1 + \sigma) \]

1.55 = (1 + \sigma)(1 + \delta^2)

(NLMS) (PSID + AFDC spell data)

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White:

\[-0.155 \approx \delta(1 + \sigma)\]

(IV ITT)

\[1.55 = (1 + \sigma)(1 + \delta^2)\]

(NLMS)

(PSID + AFDC spell data)

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White:

\[-0.155 \approx \delta(1 + \sigma)\]

(IV ITT) \[\Rightarrow \delta^W = -0.08\]

1.55 = (1 + \sigma)(1 + \delta_2)

(NLMS) (PSID + AFDC spell data)

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White:

$$-0.155 \approx \delta (1 + \sigma)$$

(IV ITT)

$$\Rightarrow \delta^W = -0.08$$

$$1.55 = (1 + \sigma)(1 + \delta_2)$$

(NLMS) 

(PSID + AFDC spell data)

Nonwhite:

$$-0.196 \approx \delta (1 + \sigma)$$

(IV ITT)

$$\Rightarrow \delta^{NW} = -0.09$$

$$1.19 = (1 + \sigma)(1 + \delta_3.33)$$

(NLMS) 

(PSID + AFDC spell data)
Notes: State/cohort means from 2000 Census and 2001-2007 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Coefficients are multiplied by 100. "Does this person have any of the following long-lasting conditions: ...A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?"
Effect of 1 p.p. difference in initial eligibility

Birth Year Relative to Medicaid

IV Effect per year of eligibility, 0-10 : \textbf{-3.80} (s.e. = 1.15)

Notes: State/cohort/state-of-residence means from 2000 Census and 2001-2007 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Coefficients are multiplied by 100. "Does this person have any of the following long-lasting conditions: ...A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting,
Effect of 1 p.p. difference in initial eligibility

Birth Year Relative to Medicaid

IV Effect per year of eligibility, 0-10: -2.75 (s.e. = 0.76)

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Event-Study Estimates for Employment and Any Cash Benefits, Whites, Extended Sample

Notes: State/cohort means from 1980, 1990, 2000 Censuses and 2001-2014 ACS data. Each point is the interaction between initial AFDC-based Medicaid eligibility and an event-time indicator. Infant mortality, general fertility rate and per-capita income are omitted. IV estimates for eligibility under age 10 are 6.41 (s.e. = 1.22) for employment and -3.84 (s.e. = 0.97) for public assistance receipt.
Sketch of a Grossman Model Explanation

ROR on health investment:
- \( \frac{\$MU + \$\text{time}}{\pi_t} \)
- does not differ by race

\[
H^W_t \\
H^W_t + \delta^W_{t+1} + \tilde{\pi}_t
\]

\[
H^N_t \\
H^N_t + \delta^N_{t+1} + \tilde{\pi}_t
\]
Sketch of a Grossman Model Explanation

\[ \text{Medicaid} = r + \delta_{t+1} + \tilde{\pi}_t \]
If this is $H^{\text{min}}$

$\Rightarrow$ Fewer NW deaths

$\Rightarrow$ No $\Delta$ in white deaths

\[
\text{Medicaid} = \downarrow \pi_t
\]

\[
r + \delta_{t+1}^{NW} + \tilde{\pi}_t
\]

\[
r + \delta_{t+1}^{W} + \tilde{\pi}_t
\]
Long Run

Medicaid = $\downarrow \pi_t$

$r + \delta_{t+1} + \tilde{\pi}_t$

$\Delta H_t^{NW} < \Delta H_t^W$