The Economics of Early Childhood Intervention: Evidence from the 1980s-1990s Expansion of the Medicaid Program

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Overview

- Inequality in mortality in the U.S. increased among adults but *declined* among children and approached the low levels seen in countries such as Canada.

- The U.S. expansion of public health care for pregnant women and children is likely responsible for much of this improvement, and provides a case study of how increasing access can improve health long-term.
Research Highlights Stalling Life Expectancy and *Increases* in Inequality in Mortality

There has been a great deal of research and publicity about stalling life expectancy and *increases* in inequality in life expectancy and mortality in adults 45+ over the past 20 years (Chetty et al. 2015; Lee et al. 2015; Case/Deaton 2015, 2017).


Photo Credit: Joshua Bright for The NYTs
Currie and Schwandt (2016a,b) look at all deaths at all ages

- Ranking people by earnings or education creates a selected sample because not everyone has these measures in every period.
- Selection can change over time.
- Problematic for children, the disabled, and those with weaker labor force attachment (women?).
- Every death is associated with a place. We can rank places from richest to poorest (group counties to looked at ~fixed percentiles of the population).
Male U.S. Infant Mortality by County Poverty Percentile (lower and flatter is better!)

![Graph showing male U.S. infant mortality by county poverty percentile from 1990 to 2010. The graph compares different years with trend lines and data points.](image-url)
U.S. 3-Year Mortality Rates by Race and Gender, County Groups Ranked by Poverty Rates (Blue=1990, Green=2010, Red=2010 multi race)

(A) Age 0-4

- White females
- Black females
- White males
- Black males
U.S. 3-Year Mortality Rates by Race and Gender, County Groups Ranked by Poverty Rates
(Blue=1990, Green=2010, Red=2010 multi race)

(B) Age 5-19
### Male Mortality Gradients by 5-Year Age Categories - Children

<table>
<thead>
<tr>
<th>Age Category</th>
<th>1990</th>
<th>2010</th>
<th>P-value of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>.083</td>
<td>.036</td>
<td>&lt;.001</td>
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<tr>
<td>1-4</td>
<td>.008</td>
<td>.003</td>
<td>&lt;.001</td>
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<tr>
<td>5-9</td>
<td>.004</td>
<td>.002</td>
<td>&lt;.001</td>
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<tr>
<td>10-14</td>
<td>.009</td>
<td>.004</td>
<td>&lt;.001</td>
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<tr>
<td>15-19</td>
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<tr>
<td>20-24</td>
<td>.034</td>
<td>.005</td>
<td>&lt;.001</td>
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## Female Mortality Gradients by 5-Year Age Categories - Children

<table>
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These results suggest that...

- There are very different trends in inequality in mortality for U.S. children and adults.
- What changed?
  - One of the biggest differences is the larger shares covered by insurance prenatally and in childhood under the Medicaid program.
Medicaid is the Largest Social Programs Affecting Children (billions $2015)

Note: Only Medicaid for children and non-disabled adults is included. Assumed that ½ of Food Stamp/SNAP payments go to families with children.
Rising Fraction 18-44 Year Old Women Eligible for Medicaid Coverage of Pregnancy, 1979-1993

Fraction Eligible in Utero


0.1 0.2 0.3 0.4 0.5 0.6 0.7

.12 .43
Child Medicaid Eligibility Rose
How can we see whether improvements in mortality are likely to be due to expansions of insurance for U.S. children?

- Canada is a good comparison
- Factors such as access to technology, smoking, driving, product safety are similar in the two countries, and poverty rates showed similar declines.
- Canadian children had health insurance throughout the period.
- Compare trends in mortality and mortality inequality by age across the two countries.
Males: Canada (red) vs. US (blue) mortality, 1990/91 (thin) vs. 2010/11 (thick) by poverty (Baker, Currie, and Schwandt, 2018)

Age 0-4

Age 40-44

Age 60-64
Females: Canada (red) vs. US (blue) mortality, 1990/91 (thin) vs. 2010/11 (thick) by poverty
Within the U.S., Staggered Phase-in of Medicaid Expansions for Pregnant Women Can be Used to Identify Effects

Change Fraction 18-44 Year Old Pregnant Women Eligible for Medicaid, 1979-1993
(Miller & Wherry, 2018)
Short Term Effects of Medicaid Eligibility Expansions for Pregnant Women of late 80s, early 90s.

Currie and Gruber (1996)
- Use “simulated eligibility” measure to capture changes in the generosity of state Medicaid programs.
- 8.5% reduction infant mortality
- 50% reduction in delay in obtaining prenatal care among highest poverty group.
New Evidence on Long-Term Effects Prenatal and Infant Coverage

Miller and Wherry (2018): Young adult children of mothers who were eligible are overall:
- 1/3 of an SD less likely to have a chronic condition
- Have 0.56 fewer hospital visits (on a mean of 25.3 per 1,000)
- Are 0.011pp more likely to graduate high school (mean is 0.92).
Bigger Effects Among the Poorest…

- 2/3 of an SD less likely to have a chronic condition
- Have 0.83 fewer hospital visits
- Are 0.031pp more likely to graduate high school
- Increase of .04pp in probability some college
- 0.20 increase in ln(personal income)
- -0.041 decrease in probability of using SNAP (Food Stamps)
- Decline of -2.185 on the Kessler 6 mental distress score (out of a possible 24).
Among U.S. children, a sharp cutoff in eligibility can be used to identify the effects of public insurance

Only children born after September 1, 1983 were eligible for expansions, creating a discontinuity.

Much research shows long term effects on the health of children who became eligible (Currie, Decker, Lin, 2008; Wherry et al. 2015; Meyer and Wherry, 2016; Kowalski et al. 2015: Goodman-Bacon, 2016, Cohodes et al. 2015)
Effect of Years of Medicaid Eligibility 0-18 (Brown, Kowalski, and Lurie, 2018)

Cumulative Tax Paid 19-28 (2011$)

Age

Family Poverty

15-18

<200%

200-500%

>500%
Estimated % increase in access in 12 mo. after switch to MMC in SC, child FE models

- Well-Child (m=.439)
- Dev. Screen (m=.029)
- Vaccinations (m=.307)
- Sick Visits (m=.244)
Estimated % rise in diagnoses in 12 mo. after Switch to Medicaid Managed Care, Child FE Models

- ADHD (m=0.061)
- Depression (m=0.016)
- Asthma (m=0.154)
- Mild Infection (m=0.369)
- ENT (m=0.172)
- Autoimmune (m=0.105)
Summary and Conclusions:

- Access to health care starting in the prenatal period improves child and adult health and productivity.
- The roll out of public insurance for pregnant women and children reduced mortality and improved adult health.
- U.S. reductions in inequality in mortality among children occurred against a backdrop of increasing inequality in mortality among adults, and brought child mortality rates close to much lower Canadian levels.
- Although measures of chronic diagnoses in children are increasing, this may be largely due to the improvements in access to screening, diagnosis, and treatment.