

Does More Public Health Spending Lead to Better Public Health?

Jim Marton
Economics Dept.
GA Health Policy Center
Andrew Young School
Georgia State University

Peggy Honore
U.S. Dept. of Health and
Human Services

Chris Parker
GA Health Policy Center
Andrew Young School
Georgia State University

Karen Minyard
GA Health Policy Center
Andrew Young School
Georgia State University

Background 1

Mays and Smith (2007)

- Activities in the public health domain designed to promote health and prevent both disease and disability at the population level are relatively under-funded in the U.S.
- Funding mechanisms vary across states and local communities
- “On balance, very little empirical evidence exists about the extent to which differences in public health spending levels contribute to disparities in population health”

Background 2

Mays and Smith (2007)

- Using a panel of data on U.S. public health agencies in which values for public health funding and health outcomes are given at 3 points in time (1993, 1996-97, and 2003), Mays and Smith (2007) find negative associations between public health spending and rates of infant mortality, deaths due to cardiovascular disease, deaths due to diabetes, and deaths due to cancer.
- We are interested in examining this relationship in greater detail within counties in Georgia.

Why Georgia? 1

- An important methodological issue that arises in this context is the potential endogeneity of county public health expenditures. It may be the case that counties with more health problems receive more public health dollars than other counties. If this were true we would not be able to say whether changes in expenditures influence health outcomes or vice versa.
- In Georgia, general grant in aid (GGIA) dollars allocated to counties for public health are NOT allocated on the basis of current health problems within each county. In fact, they are allocated base on a funding formula that is arguably not very related to current health problems!

Why Georgia? 2

- In Georgia, general grant in aid (GGIA) dollars are allocated to counties using a funding formula based on county population and relative wealth as measured in 1970. Thus the percent of all GGIA dollars a particular county receives has for the most part not changed in several decades.

| Year | Total GA GGIA |
|-------------|----------------------|
| 2000 | \$70,000,000 |
| 2001 | \$74,000,000 |
| 2002 | \$71,000,000 |
| 2003 | \$71,000,000 |
| 2004 | \$67,000,000 |
| 2005 | \$64,000,000 |
| 2006 | \$64,000,000 |

Why Georgia? 3

- We argue that county GGIA allocations are exogenously related to current health outcomes in Georgia counties, so we avoid this endogeneity problem.
- We have built a 7 year panel of data for Georgia's 159 counties (2000-2006) with values of each variable updated on an annual basis.

Methods

Public_Health_Outcome_{it}

$$= \beta_0 + \beta_1 * GGIA_{it} + X_{it} \beta_2 + Year_t \beta_3 + \alpha_i + \varepsilon_{it}$$

- The vector of additional county controls (X) includes county per capita income and the county unemployment rate.
- We have estimated cross-sectional versions of this model, a pooled OLS version, a pooled version with year dummies but no county fixed effects, as well as this specification.

| Impact of an extra \$1,000 of GGIA PC on: | infant deaths PC: | early deaths PC: | heart disease deaths PC: | cancer deaths PC: | influenza deaths PC: | diabetes deaths PC: |
|--|--------------------------|-------------------------|---------------------------------|--------------------------|-----------------------------|----------------------------|
| 2000 CS | 0.0046 * | 0.003 | N/A | 0.04 ** | 0.00 | 0.00 |
| 2001 CS | 0.0052 ** | 0.014 ** | 0.06 *** | 0.02 | 0.00 | 0.00 |
| 2002 CS | 0.0067 *** | 0.003 | 0.07 *** | 0.02 | 0.00 | 0.00 |
| 2003 CS | 0.0031 | 0.031 *** | 0.09 *** | 0.07 *** | 0.01 *** | 0.01 ** |
| 2004 CS | 0.0040 | 0.009 | 0.07 *** | 0.04 *** | 0.01 ** | 0.00 |
| 2005 CS | 0.006 ** | 0.019 *** | 0.08 *** | 0.06 *** | 0.01 ** | 0.01 ** |
| 2006 CS | 0.0051 ** | 0.013 ** | 0.09 *** | 0.07 *** | 0.01 * | 0.00 |
| Pooled OLS | 0.0047 *** | 0.020 *** | 0.11 *** | 0.04 *** | 0.01 ** | 0.00 |
| Add year FE | 0.0050 *** | 0.016 *** | 0.08 *** | 0.04 *** | 0.01 ** | 0.01 ** |
| Add county FE | 0.0071 | 0.045 *** | 0.11 *** | 0.02 | 0.01 | 0.02 |
| <i>means</i> | <i>.0001372</i> | <i>.0007758</i> | <i>.0025815</i> | <i>.0020269</i> | <i>.0020269</i> | <i>.000256</i> |

Other Outcome Measures

We also examined :

- number of teen pregnancies
- deaths due to stroke, accidents, respiration problems, Alzheimer's, and nephritis
- number of current health conditions (Chlamydia, cancer, heart disease, stroke, and diabetes)

The only negative coefficient we found in our fixed effect models was on respiratory deaths, but it was not statistically significant.

Next Steps

- Try a more detailed set of additional county level controls
- Try to expand the panel to include more years
- Try lagging the GGIA variable
- Try estimating a log-log specification like Mays and Smith (2007)
- Consider other public health funding sources for the county besides GGIA.

Conclusions

- Our very preliminary analysis finds no effect of general grant in aid dollars on infant deaths per capita, cancer deaths per capita, influenza deaths per capita, or diabetes deaths per capita in Georgia counties.
- In addition, we find a positive correlation between general grant in aid dollars and the number of early deaths per capita and the number of heart disease deaths per capita in Georgia counties.
- These preliminary findings for Georgia do not match the national findings reported in the literature, but there are many additional steps we need to take before we start making any policy recommendations.