Update on Public Health Financing and Economics Studies from the PHSSR and PBRN Programs

Glen Mays, University of Kentucky

Available at: http://works.bepress.com/glen_mays/118/
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Glen Mays, PhD, MPH
University of Kentucky

glen.mays@uky.edu
publichealtheconomics.org

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Acknowledgement

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What we do

Research to reveal how to improve the organization, financing, and delivery of public health services at local, state and national levels, and the impact of these activities on population health

http://www.publichealthsystems.org/research-agenda.aspx
Public Health
Practice-Based Research Networks (PBRNs)

First cohort (December 2008 start-up)
Second cohort (January 2010 start-up)
Affiliate/Emerging PBRNs (2011-13)

New in 2013
Updates on two streams of research

- Understanding the *effects of the recession* on public health financing and service delivery
- Estimating *health and economic effects* attributable to changes in public health financing
Economic shocks to public health delivery

- Recessionary impact on state and local fiscal capacity, 2008-present
- Growth in demand for public services
- Estimated 55,000 state and local public health jobs lost since 2008
- Expiration of federal stimulus spending, 2011-12
- Diversion of ACA Prevention & Public Health funds
- 2013 Sequester
What we know, sort of…

Governmental Expenditures for Public Health Activity, USDHHS National Health Expenditure Accounts

- Percent of NHE (x100)
- Percent of GDP (x1000)
- Per capita ($100s nominal)
- Per capita ($100s constant)

U.S. Centers for Medicare and Medicaid Services, Office of the Chief Actuary
Public health responses

- Changes in scope and scale of services delivered
- **Intensive margin**: effort exerted by governmental public health
- **Extensive margin**: other organizations contributing to public health
- **Quality/effectiveness**: degree to which services meet community needs
Data used in empirical work

National Longitudinal Survey of Public Health Systems

- Cohort of 360 communities with at least 100,000 residents
- Measures reported by local public health officials:
  - **Scope**: availability of 20 recommended PH activities
  - **Intensive Margin**: effort contributed by the local PH agency
  - **Extensive Margin**: other organizations contributing to PH
  - **Quality**: perceived effectiveness of each activity
- Linked with secondary data on agency and community characteristics
Data used in empirical work

- Residual state and federal spending estimates from US Census of Governments and Consolidated Federal Funding Report
- Community characteristics obtained from Census and Area Resource File (ARF)
- Community mortality data obtained from CDC’s Compressed Mortality File
- Medical care spending data from CMS and Dartmouth Atlas (Medicare claims data, HSA-level)
Results: Delivery of recommended public health activities

Results: Delivery of recommended public health activities

Results: changes in intensive and extensive margins

<table>
<thead>
<tr>
<th></th>
<th>% Change 2006-2012</th>
<th>Scope of Delivery 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local health agency</td>
<td></td>
<td></td>
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<tr>
<td>Other local government</td>
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<tr>
<td>State health agency</td>
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<tr>
<td>Other state government</td>
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<tr>
<td>Hospitals</td>
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<tr>
<td>Physician practices</td>
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<tr>
<td>Community health centers</td>
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<tr>
<td>Health insurers</td>
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<tr>
<td>Employers/business</td>
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<tr>
<td>Schools</td>
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<td>CBOs</td>
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Results: Effects of economic indicators on PH spending

Elasticity estimates

- Unemployment
- Income per capita
- Housing price index

GEE regression estimates with logarithmic link function, controlling for population size, age composition, racial composition, physician and hospital supply, and governance structure.
Results: Effects of economic indicators on PH delivery

GEE regression estimates with logarithmic link function, controlling for population size, age composition, racial composition, physician and hospital supply, and governance structure.
Estimating health & economic effects of spending changes

- Who benefits from public health spending and how long does it take?
  - Larger gains in low-resource communities
  - Larger gains in communities that offer a broader scope of public health activities
  - Effects accumulate over time: largest with 10-year lag periods

- Tuesday at 3:30pm, BCEC Room 160C
Effects of public health spending on medical care spending 1993-2008

Change in Medical Care Spending Per Capita Attributable to 1% Increase in Public Health Spending Per Capita

<table>
<thead>
<tr>
<th>Model</th>
<th>N</th>
<th>Elasticity</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year lag</td>
<td>8532</td>
<td>-0.088</td>
<td>0.013***</td>
</tr>
<tr>
<td>Five year lag</td>
<td>6492</td>
<td>-0.112</td>
<td>0.053**</td>
</tr>
<tr>
<td>Ten year lag</td>
<td>4387</td>
<td>-0.179</td>
<td>0.096*</td>
</tr>
</tbody>
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log regression estimates controlling for community-level and state-level characteristics

*p<0.10       **p<0.05       ***p<0.01

Mays et al. forthcoming 2013
For More Information

Glen P. Mays, Ph.D., M.P.H.
glen.mays@uky.edu

Email: publichealthPBRN@uky.edu
Web: www.publichealthsystems.org
Journal: www.FrontiersinPHSSR.org
Archive: works.bepress.com/glen_mays
Blog: publichealththeconomics.org

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University of Kentucky College of Public Health
Lexington, KY