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Quantifying the Value of Public Health Investments

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Quantifying the Value of Public Health Investments

Glen Mays, PhD, MPH
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Getting what we pay for?

Figure 1. There are large differences in life expectancy and health care spending across OECD countries 2008¹

1. Or latest year available.
Source: OECD Health Data 2010.
A Skewed Investment Portfolio

Ratio of non-medical social spending to medical spending:

- 2.0 in the OECD countries
- 0.83 in the United States

Source: Bradley et al., 2011:3 (BMJ)
Preventable disease burden and national health spending

>75% of national health spending is attributable to chronic diseases that are largely preventable
  – 80% of cardiovascular disease
  – 80% of diabetes
  – 60% of lung diseases
  – 40% of cancers
  (not counting injuries, vaccine-preventable diseases)

<3% of national health spending is allocated to public health and prevention

CDC 2011
Preventable mortality in the U.S.

Preventable Deaths per 100,000 population

Source: Commonwealth Fund 2008

Countries’ age-standardized death rates before age 75; including ischemic heart disease, diabetes, stroke, and bacterial infections. See report Appendix B for list of all conditions considered amenable to health care in the analysis.
Geographic variation in preventable mortality

Source: Commonwealth Fund 2008
Public health’s share of national health spending

USDHHS National Health Expenditure Accounts

% of total health spending

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<td>2008</td>
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- State and Local
- Federal
Factors driving growth in medical spending

Health spending growth rate 1996-2006

Growth rate due to cost per case

Growth rate due to prevalence

Roehrig et al. Health Affairs 2011
Public Health in the Affordable Care Act

- Public Health & Prevention Fund: $15 billion in new federal public health spending over 10 years (cut by $5B this year)

- Incentives for hospitals, health insurers, employers to invest in public health and prevention
Key questions of value...

- How much health can we produce through public health investments?
- Can public health investments help “bend the curve” to contain medical costs?
“Local spending varies by a factor of 13 between the top 20% and bottom 20% of communities, even after adjusting for differences in demographics, SES, and service mix.”

Gini = 0.472

Mays et al. 2009
Changes in Local Public Health Spending 1993-2008

- 62% growth
- 38% decline
Mortality reductions attributable to local public health spending, 1993-2008

Hierarchical regression estimates with instrumental variables to correct for selection and unmeasured confounding

Mays et al. 2011
Medical Care Offsets Attributable to Local Public Health Spending, 1993-2008

Medical Cost Offset = 0.088%

Mays et al. 2009
Projected effects of new ACA public health spending

- 1.2% increase in public health spending in average community over 10 years:

  - Public health cost: $7.2M
  - Medical cost offset: -$6.3M (Medicare only)
  - Deaths averted: 175.8
  - Life years gained: 1758
  - Net cost/LY: $546
Conclusions

- Local public health spending varies widely across communities
- Communities with higher spending experience lower mortality from leading preventable causes of death
- Growth in local public health spending appears to offset growth in medical care spending
Implications for Policy and Practice

- Mortality reductions achievable through increases in public health spending may equal or exceed the reductions produced by similar expansions in local medical care resources.

- Increased federal investments may help to reduce geographic disparities in population health and bend the medical cost curve.

- Gains from federal investments may be offset by reductions in state and local spending.
Limitations and next steps

- Aggregate spending measures
  - Average effects
  - Role of allocation decisions?

- Mortality – distal measures with long incubation periods

- Medical care spending relies on Medicare as a proxy measure (20% of total medical $)
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